

A practical guide towards ketoadaptation - The rejuvenation key

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Regular readers of the cassiopaea forum know that the health research is a must do to the unquestionable benefits of taking proper care of our machines. What we eat affects our body, mind and soul in ways that the average person has never learned about. The great improvements in body and brain health that forum members have achieved are based on solid science and research. It is not an exaggeration to state that this research - pioneered by Laura Knight-Jadczyk and the Quantum Future Group and expanded by the members of this forum - has saved many lives around the world!

Since newbies find it overwhelming to catch up with the various must read threads, I'm - as discussed on other threads - working on a couple of documents to help newbies get up to speed quicker. By reading the documents, they'll be able to navigate the various threads (which still are a must read!) much more quickly and painlessly.

The document is a synthesis based on dozens of health books (both ones on the recommended books list and others), hundreds (if not thousands!) of scientific journals and articles, explanations and experiences from forum members, and the threads "Life Without Bread", "Ketogenic Diet - Path to Transformation?", "The Vegetarian Myth", and also a few others.

So the aim is to cover the scientific background of the diet, practical aspects of keto-adaptation along with recipes, a carb and protein counter and other practical resources including Sott.net's best health articles and videos, videos made by the "Château Crew", and theoretical and practical aspects of the most favored supplements and complementary therapies for detox and ketoadaptation.

The document will be in google docs for updating purposes according to new dietary research, books, etc.

English is my second language, so for syntax and grammar suggestions, and as to avoid noise, please send the edits as a personal message to Gaby in the forum. For discussions or suggestions related to the material in the documents, post in the relevant thread.

Citations and references will be added shortly.

Topics covered in this document:

KETOADAPTATION

Back to basics

Ketogenic diet

Tips for a smooth ketoadaptation process

CARB AND PROTEIN COUNTER FOR DUMMIES

Keto-calculator

RECIPES

Bone broth

Breakfast sausage

Coconut cream custard AKA Fat Bomb Custard!

Chocolate
Chococcino
Deviled eggs
Home-made mayonnaise
Liver paté
Pork rinds
Salmon Mousse

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Liposomal vitamin C

A note on iron overload

Magnesium

Omega 3s

N-Acetyl-Cysteine

Constipation or Diarrhea Protocol

Easier Digestion and Sluggish Liver Protocol

Gut Healing Protocol for Leaky Gut

Keto-adaptation Troubleshooting Protocol

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Vitamin D3

Boswellia (Frankincense)

Zinc

Mitochondrial Energizers

DMSO

Adrenal Fatigue Protocol

Anti-Estrogen Dominance Protocol

Mood Enhancing Protocols

Mercury Detox Protocol

RECOMMENDED RESOURCES

Articles

Videos

Books

Keto-Adaptation

We come now to the exciting part, the healthy lifestyle that will help us reverse the effects of years of accumulating damage in this gone mad world.

Here you will find a dietary plan, recipes and basic principles as to why things are recommended. But do not start the diet without having read the first document, or you'll end up doing fatal mistakes like cooking in vegetable oils or margarine! You would also miss the WHY of this diet as we won't repeating all those jewels from the science background. There will be reminders here and there when necessary, but remember, you must understand the reasons WHY you are committing to do this diet.

The main reasons were already explained in the first document. You will also find information that will help you listen to your body's needs, so you can nurture it and be patient with yourself. Please notice that these guidelines are just that, guidelines, and that some level of flexibility is allowed as long as you are making progress and are doing the basic principles correctly and faithfully. That is, don't make excuses to justify the consumption of toxic foods. Do not justify the existence of unhealthy foods in your life.

We also suggest that you read carefully this information to help you determine which are the best supplements to take at the beginning of your journey, which will then help you

balance your health along with the diet, but also deal better with drug-like food withdrawals. Having said that, by the time you are fully adapted to a ketogenic diet, most if not all of the supplements are no longer required.

We also recommend the practice of resistance training which aids enormously to bring dysfunctional mitochondria back online. Other essential therapies that should accompany your journey for better health includes stress-relief techniques which are explained in the forum. Our all time favorite is Éiriú Eolas!

You may ask “But how will I know what is working?” Well, as long as you are getting better and making progress, it is better to have this confusion than to be so very selective that progress may be impossible. As you learned in the first document, the odds are pretty much against us. There are multiple stressors, other than a dire diet, that are destabilizing our wellbeing, other than the chronic illnesses that affect us.

If you have a heavy schedule, prepare simple meals and snacks ahead of time at home and take them with you at work. It is part of the process of taking care of yourself.

We have been collecting practical tips on every single health subject for years now. Don't hesitate to visit our websites at sott.net and its forum and use the search function for any topic you can possibly think of, or ask for help.

We encourage you to embark in this journey with your friends and loved ones. Network with your local community in order to find the best food sources, and to possibly buy in bulk size for a better price. Don't hesitate to organize

meetings to share experiences and discuss about these health topics and educate other people to make better choices and find solutions. If it's going to happen, it is up to us.

Back to Basics

First things first. Go to your kitchen and take all the Tupperware, plastic containers, plastic kitchen utensils, everything plastic and get rid of all of them. Don't burn them, it is highly toxic! Use only glass containers and if you choose to microwave your food, don't do it in a plastic container or plastic wraps.

Filter your own drinking water using a reverse osmosis filter or use distilled water. Believe me, the investment for a water distiller or reverse osmosis system is worthwhile. If you are on a low budget, you can get an inexpensive water filter like the one from Britta. It will remove toxic stuff, but not all of it, including fluoride. Something is better than nothing! In a highly toxic world, taking every step to limit your exposure is progress. Don't take an all or nothing attitude here. But do take a nothing attitude when it comes to toxic foods.

Don't use fluoride toothpaste, if there is absolutely no other option available, use sodium bicarbonate mixed up with xylitol (natural sweetener) which is excellent for teeth. Activated charcoal is another option, although some find it somewhat corrosive. Don't buy fluoridated salt; get sea salt, celtic salt, or Himalayan salt which is far more nutritious and delicious!

Don't get deodorants with aluminum in them; get an aluminum-free labeled one.

Give your baby natural fabric toys, plastic ones have BPA, lead, and other evil stuff. Avoid buying canned foods and drinks and processed foods. Think of it as going back to basics, a world free of the industrial influences that destroyed our healthy lifestyles.

You can use glass containers and canning jars at home for food storage. You can also use stainless steel containers in the freezer instead of freezer bags. If you have no choice but to use freezer bags, remember not to unfreeze your foods in them in hot water or microwave. It will leach all the toxins into your food.

Use a stainless steel water bottle or glass bottle instead of plastic bottles. Don't drink bottled water or other beverages from plastic bottles, especially when they've been exposed to sunlight. Babies should have only glass baby bottles.

Get rid of all the junk and processed food. If it comes in a plastic package, is probably not good. About 80% of the stuff in the supermarket is a candidate. All processed foods have MSG at the very least, and traces of evil soy, gluten, dairy. Check the spices very well; flavorings have MSG in most of them. Keep only natural herbs and spices. Remember that excitotoxins are in ready-made soups, salad dressings, steak sauce, gravy mixes, cream sauces, gourmet foods, soy milk, kombu, miso, soy sauces, soy burgers, bouillon, broth, stock, etc. The easiest way to avoid it is to use only natural herbs, salt and pepper. If you want bouillon, you can make your own very easily.

If you are to avoid evil Teflon and aluminum, which are the most popular materials for cookware nowadays, choose old

type or healthy cookware materials. Enamel cookware is very good (and expensive!), but if you can afford it then the best quality is enameled cast iron, ceramic or steel.

An excellent option is cast iron; it can be used for hundreds of years. Check out if there is still one available from one of your ancestors. You could probably get a second-hand one in a market. A cast iron pan should be seasoned with lard, tallow or olive oil, and then putting it in a 300 degrees oven for three hours. While heating, remove at least 3 times to wipe it and re-grease it. This will make your iron cookware a natural nonstick coating. Never, never ever use soap to wash your iron pan, it will ruin it! Simply heat it up on the burner until smoke comes out and then wash in very hot water with a nonabrasive sponge or washcloth. You can use salt as an abrasive if extra cleaning is needed.

Stainless steel is another option for cooking, especially for quick dishes or browning meat or sauces, or just heating stuff up real quick. You can wash stainless steel however you like it. Use lots of fat for cooking, as things tend to stick to the pan. Allow for the pan to get hot before putting the food, that will help.

Ladies, use natural cosmetics and beauty products. Remember that the diet will take care of most skin problems, but primrose oil and even olive oil are good options if a little extra moisturizing is needed. Some find Argan oil very useful as well. You can buy it in pure form. Other excellent options include calendula and comfrey for speedy healing, and shea butter with coconut oil.

As often as you can, choose healthy cleaning products labeled organic or old time cleaning products such as vinegar, sodium bicarbonate and lavender oil.

As far as EMF pollution goes, it can get very interesting. At the very least, use your cell phone only when reception is good. Allow children and teenagers to use a cell phone only in case of emergencies. Avoid carrying your phone on yourself, putting it in a purse or carrying bag. Assume there is no such thing as a safe cell phone. Used wired headsets (not blue tooth) to keep the cell phone as far away as possible from your body. Don't keep the phone in your room where you sleep and always switch it off.

Minimize or eliminate altogether the use of cordless phones at home and at the office. They are probably worse than cellphones. The old-style corded phones will do.

Minimize EMF influence by unplugging electrical appliances and Wi-Fi routers when they are not in use, especially in your room. Most wireless routers allow the user to turn off the wireless transmitter and go with wired connectivity by plugging in the appropriate cables. You simply need to run a cable to each location that you would like to use the computer. This may be inconvenient, but it is a far better choice, then, don't forget to turn off the wireless transmitter in your computer.

You can reduce your electric bills by seeking out nonelectrical alternatives to many home appliances. It is time to take these

things seriously and go back to basics in order to minimize their threat on your health.

Be careful with the organic label. Nowadays, with so many people interested in avoiding GMO, MSG, grain-based animal products and so forth, there is huge market for organic products and evil corporations are being unscrupulous enough to label something organic when it isn't. Network about your options, talk to butchers and find out where your meat is coming from. Talk to organic farmers and support them in their efforts to raise healthier and happy animals.

Choose as much as possible organic foods. If for a reason, this is not possible, choose animals that are considered safer such as pork and veal. Don't forget the joint and bone parts. In fact, good connective tissue is essential for health and it just happens that our connective tissue is very sensitive to a crappy diet. No supplement in existence will ever support connective tissue as a good diet does. Collagen is made and repaired from raw materials we should eat, typically parts of animals like joint and bone rich broths. These broths in turn are rich in other nutrients that help soothe the gut lining and digest protein and fat better. This is the reason why it is considered a superfood during the ketogenic diet, as it not only eases ketosis transition, you can also put all the fat you want in there and it will taste great! The bone broth is the one thing that has made the whole difference and its reputation in the past as key role in rejuvenation and/or treatment for a whole range of diseases proves that our ancestors knew this as well.

The other superfood is the coconut custard AKA the Fat Bomb Custard which is absolutely delicious, containing all the fat

you need for a day. And the beauty of it is that MOST of the fat there is medium chain fatty acids. Recall from the previous document how important these are in the ketogenic diet. People never thought they would be able to get down the amount of fat that all the experts say you have to consume to do the ketogenic diet right. Not only that, but LIKE it too. A definite must have. You'll find the recipe further down. With the coconut custard, some people don't see any need to eat anything else except breakfast, and then a small bit of meat and the Fat Bomb in mid/late afternoon. It is so satiating that people don't even want anything else. That means effective intermittent fasting which helps re-tool DNA and that's good! It needs to be handled with care; eaten in small portions, and never late in the day. But, for those who have been really not able to get the required fat in a day, it's a blessing. In one dish, you can get it all and the only other things some are needing to eat in the day are a small portion of protein and maybe a bit of veggie. Best part is, you'll never be hungry - ever. When purchasing coconut cream in cans, make sure you get the bisphenol-free version. If you can't find any, whatever you can get is fine.

If you happen to be sensitive to coconut, you'll find lard as a substitute for the coconut oil in the recipes. Tastes as delicious and it is even more satiating! You'll learn further on how to know if you are sensitive to a food. Folks that have a problem with coconut milk are usually reacting to guar gum which comes from beans. You can get guar gum-free coconut milk, or make it yourself, but coconut milk is also best avoided in those who have irritable bowel syndrome and fructose malabsorption. For the most part, coconut oil is tolerated as it is basically 100% fat with no evil ingredients, but coconut milk or cream might be not for the reasons above.

If you are making an order or a trip to get meat or other foods, then canning is highly recommended since this is the best way to preserve indefinitely without the need of your fridge. It is also a good idea to have stuff in storage! With a canner, you can get good meat, but tough cuts so that it is cheaper, chop it into bite-sized chunks, pack it raw into the jars very tight (no water, it makes its own broth), add one tsp salt and 1/2 tsp pepper, put on the lids, load the canner, and process it for 90 minutes. If you can get a good pressure canner and do this, it is well worth it. The canner should come with processing instructions and you can can just about everything: beets, sausages, eggs, squash, etc. You can do meat canning in a boiling bath but if you do, you have to let it boil for about 4-5 hours (3 hours in a regular pressure cooker). Some prefer to cook the meat beforehand to make sure it is properly processed and to cut down the boiling time to 2 hours.

You can also render fat from the animal sources you buy and can it. Like in the old days, nothing goes to waste. Just cut it up in chunks, cook on low heat for several hours until all the fat is rendered out, pour in canning jars, process in a boiling bath for about 25 minutes. Wash the outside of the jars (some fat tends to leak out and make them greasy during processing) check the seals, and store in a cool, dark place. It is really that simple! If you get fatty, cheaper beef from the butcher, you do not need to add anything. The fat renders during the processing and when it is cooled you have about 3 inches of pure fat sitting on top of the meat in its own juices.

Where you have the sealing lid which is flat and has a rubber rim on the inside. Then the screw on lid is either a ring lid or a full lid. Ours are full lids, but they work the same. When

you take them out of the canner, you can take the screw lid/ring off and wash the entire jar and sealed flat lid (which you tug on to check the seal), and then after all is wiped dry, put the screw lid back.

It is better to use the full lids instead of the rings because usually, when you take off the seal, you have to do it with a bottle opener and the warp that it gets means just throw it away since you cannot re-use a warped seal. So, if you do not use all the contents at once, having a screw lid to put back on so you can then put it in the fridge, is handy.



Tips for excellent natural hair - Quit Your Shampoo!

Take heart everyone who wants better hair. There is no reason to have greasy hair at any time during the process of

quitting shampoo (or any hair cleanser with any version of sodium Laural Sulfate in it).

Because you do not stop cleaning your hair--you just stop cleaning it with shampoo.

Begin eliminating the use of shampoo by finding a good conditioner, ideally something with minimal harmful chemicals (Google organic hair care products for info) but almost any conditioner will do to start. Clean/wash your hair every day with the conditioner. The oils in the conditioner are solvent to the excess oils produced by your scalp from stripping it of its natural protection all those years with shampoo, and will clean your hair beautifully. You will have clean, grease free hair every day. After a few weeks of cleaning your hair daily with conditioner, most people can cut back and clean the hair every other day with the same results--glossy shiny, strong hair with no frizz. Eventually most people find 2-3 times a week are enough depending on your activities. I work outside every day in the summer heat so find every day or every other day cleaning is needed, while in cooler, dryer weather cleaning with conditioner 2-3 times a week is enough--in between I clean my hair by scrubbing my scalp with my hands in the shower using water alone. Remember--you do not stop cleaning your hair; you change what you are cleaning your hair with. We have been brainwashed to equate "shampooing" with cleaning in general and think that to stop using shampoo will mean greasy hair and this is not true. Good luck and Good hair! -shellycheval

Ketogenic Diet

When you get up in the morning, have a nice protein breakfast rich in fat such as bacon, sausage maybe eggs if you tolerate them. Add a cup of broth if you like. This should be every single day.

Then, on normal days, have a bit of meat AND broth for lunch, a bit of meat and a bit of lettuce if you like, for dinner. Or just broth, or just meat. This meat should be the amount that is right for your weight. If you like, you can go a few grams over, but not more than that. Try to make sure you get the ratio of fat with this meat that is correct.+++++

The amount of meat is calculated in the following way: Find out your weight in Kg (1 Kg = 2.2 pounds). Then calculate the amount of meat per day: from 0.8 grams up to 1.5 grams of protein per Kg of ideal weight per day. Whether it is the highest range or lower is up to you. I included in this document a protein counter for dummies so you can see how much that translates to in terms of animal food sources and ounces. You'll find a photograph as a reference to give you an idea how much meat that is. The ratio of fat and protein should be around 4 to 1. Keep in mind that fat is more energetically rich than protein, so a pork chop with a thick chunk of fat on it will do, also bacon. Ideally, up to 85% of your energy will come as fat, 12% will come from protein, and 3% from carbs. You eat your allocated protein and then control satiety with fat. Works very well! People may have a bowl of fat rich broth or the fat bomb custard and then they're good for half a day. But if they have meat, they're hungry again in a few hours. More meat, more hunger. It is the fat

bomb custard or the nutrient rich bone broth with FAT on it, which is highly satiating. You can add apple cider vinegar to the broth to help with digestion.++++

Restricting protein to just what you need really is the key to being comfortable and staying in ketosis. It is much easier to do this diet when you eliminate carbohydrates altogether as well. You'll see that when you have the fat bomb custard which contains basically your fat quota of the day, you'll do intermittent fasting naturally. That is, you'll be so satiated that you won't feel like eating.

You can also choose a convenient day when you can do intermittent fasting, i.e. on the weekends. On that day have your usual breakfast and then just bone broth and/or the fat bomb custard for lunch and dinner and a snack if needed.

That, right there, gives you your fat, your nutrients, but restricts your protein. You can add butter or ghee butter to your bone broth, and lard if necessary. Intermittent fasting or caloric restriction along a high fat diet is how evolution designed us to eat and it is easy to manage when your insulin production is not overstimulated with a carb based diet.

It really is that simple. It IS important to have protein for breakfast every day. Always add butter to your broth, especially at the beginning as its fatty acids are readily taken as an energy fuel. If you prefer the fat bomb custard, the medium chain fatty acids in the coconut oil and cream will help you keto-adapt much faster and easier.

If you are going to eat carbohydrates, they must really be low in sugar, i.e. lettuce, some green beans. Never eat more than 20 grams of carbohydrates per day, that is the highest top

limit. You can eliminate carbohydrates altogether since you are going to eat lots of fat. In fact, most of us have done this and have had better results than when some carbs were eaten. If you don't want to lose weight, you'll have to up your fat intake. Keep in mind that in a world where being overweight is the norm, a lot of people who are concerned about their low body weight actually have a normal weight. So don't worry.

Give your body's mitochondria time to keto-adapt, for some people it can be as fast as a few days. Others might need a couple of weeks, and yet others will require 6 weeks. Other than the fat bomb, the bone broth with butter or ghee butter is meant to ease the transition into ketosis and replenish mineral losses that occur when you restrict carbs. Typically 5 grams of (non-fluoridated) salt are required to compensate losses. So always make sure your broth is salted enough. Research has shown that as long as you replenish minerals, have enough fat and adequate protein intake, physical exercise can be done without the need of carb fuel. Tread carefully if you have high blood pressure. For more information on how to deal with transitioning problems, see "Ketosis Transitioning Troubleshooting" further on.

Try to avoid sweeteners in your tea, remember that only xylitol or stevia are allowed. We try to reduce our sugar consumption to the maximum and these natural sweeteners count since they stimulate insulin. If you only drink tea once a day, then it is okay.

As a complement to heal dysfunctional mitochondria, resistance training must be done, since the building up of muscle will create new mitochondria with fewer mutations that will later displace the dysfunctional ones. You'll find

more information and workout guide routine later on this document. Don't overestimate the protein requirements to build muscle. As it happens, it is much less than most people think. You just need plenty of fat and watch as you build all the muscle you need. It usually happens more effectively than in people who are used to have carbs as their fuel. We have been amazed to see how much energy we have on this diet, with people accomplishing all kinds of physical tasks and mental work. Provided you don't overexert yourself while on semi-fasting days, you'll be amazed of how much you can get done. You might also require more food or fats during Winter time.

A word of caution must be mentioned regarding autophagy while on ketosis. Some had reported pains that go away only after full adaptation is achieved. Keep in mind that your body is "rebuilding" itself and having more fats will ease the process. I'll include other things that you can do or supplements you can take to ease this process.

For how long should you stay on hard-core ketosis? Well, it depends on your specific health condition. If you have a neurological problem such as ADHD, Parkinson's, migraines, anxiety and any neurological syndrome, I would say indefinitely.

In other conditions or for good health in general, at the very least 8 weeks in order to allow your body a full keto-adaptation. You can also stay indefinitely. Your body's physiology is such that it will tolerate an occasional carb slip. You can always come back to this diet. But for a profound effect, give it at least 2 to 6 months consecutively. Remember, this is a lifestyle not a fad diet!

When you are ketoadapted, you can handle intermittent fasting, skipping meals or go hours without having low sugar symptoms or craving carbohydrates. You can pass them by and say “yuk, no thanks!” Isn’t that amazing?

Learn to listen to your body and allow your mitochondria to heal and keep in mind that what our evolutionary ancestors did in the past has no bearing on this because they weren't in a state of mitochondrial mutation and decay.

Don’t worry, we have recipes to use as a guideline.

About 3 weeks ago I made the transition from paleo diet to ketogenic diet. Pretty smooth transition since I was 20gm [of carbs] and under during PD. I did go through a couple of drag days early on that I thought might be due to coconut oil in my tea. I stopped the oil and a few days later introduced it again as a test. No prob with it since so it was probably the transition.

I dropped another 5-10lbs down to 150 (5'10") which feels quite right. With very little hunger on fast days (plus broth/fat in the afternoon).

Over that time I've done a few kettlebell sessions, but other than that - not much. Yesterday I put a lot of resistance work into moving much cut wood from the forest to storage.

Normally this would leave me pretty sore in a few places for a day or two. But this time - not a single ache or sore muscle. This is definitely due to the ketogenic diet! -LQB

You know, this remaining in a state of ketosis is interesting.

I now realize that I was never in it for long except when fasting and the last time I fasted, it was miserable. I now realize that was probably due to autophagy. Anyway, I'm

right about at 3 weeks of my determination to go through whatever misery I have to go through to get to the other side and it hasn't been THAT miserable, thanks to bone broth with added lard and butter. There have been a few rough spots, but it's really been worth it.

I realized today as I was outside inspecting what last night's rain did in terms of water flow and problem areas on the ground, that my body no longer feels like a 60 year-old body. I actually have ZERO pain and my joints seem to be moving with an ease I haven't experienced for something like 30 years. That's today, of course, tomorrow may be different. But for the moment, I'm thinking that this ketosis thing is nothing short of a miracle. I've also gone 5 kilos past my last plateau that I was stuck on for about a year. So I've lost a total of 24 kilos since the beginning of my detox and diet experiments. That's about 53 pounds. I've gone down about 4 dress sizes and that awful stomach fat I was carrying around since my last pregnancy over 20 years ago is finally almost gone. I hated that. -Laura

Keto How To

There are several resources in this guide which will help you determine the practical aspects towards getting ketoadapted. A ketogenic diet which is 15-25% protein, 0 to 5% carb from your daily food intake, is good enough. The rest comes from fats of course. The number of minimal carbs necessary for each person in order to stay in an ideal range of ketosis varies among each individual. In general, ketogenic diets start with 0-30 grams of carbs per day, more protein than is actually

advised and ALL the fat you can tolerate while your body learns how to process and digest it.

Keep in mind that from the carb counter below, you consider the net carbs as we don't count the grams coming from fiber.

In order to calculate protein and fat intake and much that translates into real food, use the keto calculator. It will immediately adjust to a higher protein intake if you are beginning this diet to allow for an adaptation process of at least a few weeks while you learn to tolerate what your body was born to consume: FAT. You can determine the amount of fat you need according to your caloric needs with this equation: Fat grams = (calories * (0.8 to 0.7))/9. If you are aiming to consume 1400 calories per day and 80% of those calories will come from fat, then $(1400 * 0.8) / 9 = 124$ grams of fat a day.

You will be walked through another example to help you determine your caloric intake in the counter and calculator section.

As for fat, and if you are not used to it, you'll need some supplementation to help you "re-boot". Some of us can tolerate two fat bombs per day without any problem. Others must have their one fat bomb a little bit at a time along with betaine HCl and digestive enzymes supplements, least they finish with a stomach ache.

Keep in mind that once ketoadaptation is achieved, your protein intake will follow the recommended guideline of 0.8-1

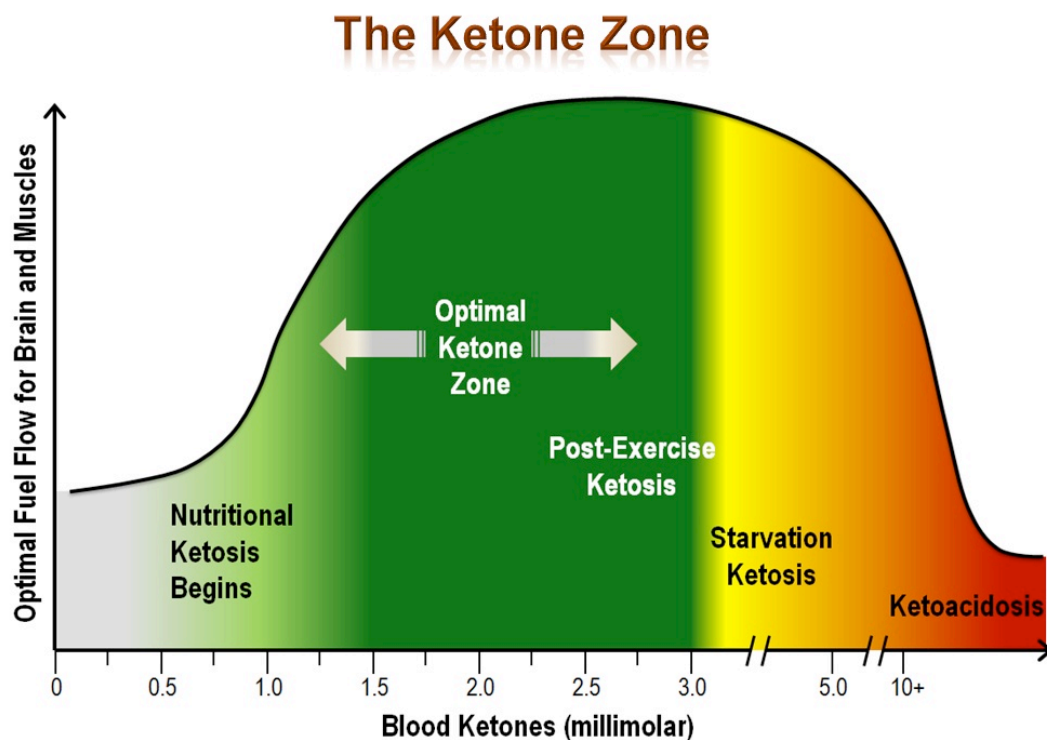
grams of protein per kilo of ideal weight and all the FAT your body needs which is usually ALWAYS underestimated by everybody.

The number of carbs usually stay around 10-20 grams for people with carbohydrate and insulin intolerance, excess weight problems, diabetes, and other chronic modern diseases. Those who are very thin might not necessarily tolerate more carbs though. Although they don't put on weight, carbs still wreak havoc in their bodies on silent ways as we discussed previously on the science background. This is why, and if you don't want to lose weight on this diet, you have to up your intake of fat.

If you want to find out if you are those who can tolerate up to 50 grams of carbs while staying on an ideal range of ketosis, you'll have to invest on a blood ketometer. That is, one of those gadgets used to test BLOOD ketones by pricking your finger and putting a drop sample on a strip for the gadget to read. Urine strips are unreliable because if it comes back with zero ketones, it doesn't mean you are not ketoadapted, on the contrary, it might mean that your body is using all the ketones and thus, they don't show on urine. When you start getting ketoadapted, you might have a lot of ketones in the urine and that may only mean that quite enough of them are not being utilized.

The blood ketometer can be obtained from Abbott Laboratories (Precision Xtra). It not only tests blood ketones, but also blood sugar. As we saw in the scientific background, there are ranges of blood glucose level that are ideal. What

mainstream medicine considers as an ideal range is already too high. Another brand for blood ketometers are NovaMax. Whatever blood ketometer you can hold from your local pharmacy would do, although beware that cheaper ones may read your blood ketones as “low” instead of giving you the accurate number. Remember, this gadget will help you determine how many carbs you can tolerate while staying on an ideal range of blood ketones which goes from 1.5 to 3 millimoles.



You get your lowest ketone readings in the am after fasting overnight. So if your morning reading is 0.5 or above you should be pretty good for the rest of the day. You can test early in the morning and then at night to compare your results. This is something that seems to be pretty consistent among folks and it makes sense if we are waking up after a

night of gluconeogenesis from protein to make sugar. This higher than normal morning blood sugar is called the Dawn Phenomenon, and is especially important in insulin dependent diabetics, as more insulin has to be injected to counteract the higher blood sugar overnight.

Those engaging on resistance training or other exercises will also need more fat and a little bit more protein (1-1.5 grams of protein per kilo of ideal weight). Excess protein could be ingested after a workout when the body is trying to replenish glycogen loses from the muscle. Again, having a blood ketometer would come out handy.

Un Ketoadapted, Maria Emmerich synthesizes a few questions that would help you determine if you are truly ketoadapted for those who can't get a hold of a ketometer:

Can you exercise without eating beforehand?

Can you go longer than three hours without eating?

Do you have enough energy throughout the day?

Do you need a nap in the afternoon?

Do you have "brain fog"?

Do you have headaches?

Do you wake up in the middle of the night hungry?

Do you experience hunger and anger?

As we saw in the science background, the answers to these questions would be an obvious yes IF you have a metabolism based on carbohydrates when your body cannot go without sugar before having a "panic attack".

Just a tip on if you are gonna test both glucose and ketones:

The strips have to be in the machine before you put blood on them. You put the strip in and a little droplet signal will show up when the machine is ready for the sample.

Since the ketone strips usually require more blood, do it first then do the glucose testing. After you clean your finger put your hand down to let gravity offer more assistance, milk (press on your finger and "squosh" it out) the blood out of your finger to put on the ketone strip. Wipe your finger (just to keep it neat and make easier to get the next blob of blood on the second strip) while the reading for ketones is processing. When you get the reading, immediately put in the glucose strip and milk your finger for blood again and apply to glucose strip.

Remember to deliver the poke off to the side of your fingerpad, not directly in the center. If your fingerpads are tough or calloused you may have to dial up the number on the lancet device. The higher the number, the harder the poke the lancet will deliver.

Hopefully, this will save having to poke yourself twice and will prevent wasted strips. -Odyssey, nurse

When you chose your 10-20 grams of carbs per day, do it from these foods: green beans, lettuce, sauerkraut, avocados (which contain good fats), ++++++. That's it. Preferably organic!

The beauty of this is that you remove from your diet: all sources of gluten, GMOs, bogus “gluten-free” foods which only amount to sugar, all alcohol (see the supplements section if you are having trouble getting off from addictive substances), foods which cross-react with gluten (triggering autoimmune and/or inflammatory responses) such as coffee and dairy (ouch, yes I know...), sugar starches full with anti-nutrients, fruit sugars, soy, night shade family (potatoes, eggplant, tomatoes - infamous of triggering autoimmune responses) and most if not ALL sources of food sensitivities. This is why the Fat Bomb Custard is so essential, because it is so delicious and satisfying that it will help you fight off cravings and transgressions effortlessly while providing your body. Trust me, if the worst kind of food and coffee junkies from all over the world did it (including me), so can you!

As to regard to food sensitivities, there will be a dedicated section further below to help you determine if you are sensitive to common foods on the ketogenic diet such as eggs, nuts, spices, butter, etc. You will also learn how to heal your gut so you can bring back some of these foods when the time comes.

The only sweeteners allowed in this diet are stevia, xylitol or other similar sugar alcohols such as erythritol. Other popular sweeteners such as honey, maple syrup, agave syrup and even coconut sugar amount to toxic sugar! The number of carbs in xylitol and stevia are listed on the carb counter.

If you have obsessive compulsive tendencies, you can channel them into reading labels carefully, making sure there are no

added sugars, MSG, aspartame, syrups, gluten and dairy products, corn syrup, fructose, soy, etc. In fact, if your grandparents from 4 generations back didn't have access to it, neither should you. Make sure you use only olive oil and vinegar on salads, no commercial dressings.

Cook with lard, tallow, duck fat, coconut oil or butter. If you are having trouble digesting your fats, add organic apple cider vinegar to your fatty meats, and eat fats with digestive enzymes. We'll expand on this topic later on as it is really troublesome for some to get back online their digestive juices after a lifetime of toxic foods.

You should eat more cooked vegetables rather raw ones, and take every opportunity you can to add more fat such as butter and bacon fat into it.

Drink plenty of water. In the ketogenic diet you lose all the water retained thanks to a carb/insulin metabolism, leaving you dehydrated. In fact, you'll pee a lot at the beginning of this diet, sometimes waking you up during the night. As you get ketoadapted, you'll normalize. But never get dehydrated. Always drink half your body weight in ounces and replace minerals lost.

Drink organic tea (less fluoride to wage a battle against!), for instance, a favorite one is Clipper "Everyday Tea" and after 5 PM, non-caffeinated teas such as herbal teas: Chamomile, Lemon Balm, Lavender, Green tea, Mint tea, etc. There is also red raspberry leaf tea which has rich concentrations of vitamin C, E, A, B complex, magnesium and manganese and

potassium and it is highly recommended non-caffeinated tea for the reproductive system.

As some of you might be aware, in the past members of the cassiopaea forum discussed a diet transition that could take months (if not years). Since then, the unquestionable benefits of the ketogenic diet have been put forward by several authors and researchers, including our own experience. The ketogenic diet is anti-inflammatory, heals the gut and food sensitivities. It is a much needed healing diet in our world today. Yes, getting keto-adapted can be difficult for some, and some troubleshooting is to be expected, but with the Fat Bomb and the bone broth, plus some investment in supplements and implementation of keto-adaptation tips... it is the BEST solution.

Some get discouraged with the detox phase that the ketogenic might trigger in the beginning, for instance eczema. But that is only a small price to pay when you finally shed toxins, especially when you hear consistently how everyone in this diet report less wrinkles and a smooth skin. This is only skin-wise. Rejuvenation and tissue restoration will be happening all throughout your body!

Same concept applies with bad breath and smelly sweat. The shedding of toxins from your fat cells is something that you want to happen. These are temporary and the additional supplementation and even a FIR sauna (see section on FIR sauna) would speed up this process.

Prolonging keto-adaptation is like allowing for toxic sugar to further deteriorate the body's metabolism before a person finally decides to do a diet that is anti-inflammatory and rejuvenating.

To help solve numerous problems, people just needed to get keto-adapted and that's it. Newbies struggle with a transition that spans throughout several months, making them suffer even more.

The Fat Bomb makes a heck of a difference. There is no comparison: when we tried to go into ketosis before, it was by force of discipline - now, with the Fat Bomb, we are done and effortlessly.

A gradual transition creates confusion, temptations, people end up eating stuff they shouldn't because "they are in transition", etc. For those of you who are asking, the ketogenic diet provides much needed healing in the most effective way. Some think they eat a "low carb" paleo diet, allowing still toxic foods and plenty of sugar into their diet and not enough FAT. So it is time you forget about inflammatory carbs and get acquainted with anti-inflammatory fat. Yes, it can be done even after decades of brainwashing. It is only on high fat bomb ketogenic diet that some are finally feeling more reassured. If cancer patients can do the ketogenic diet... then so can everybody else.

I remember particularly someone afflicted with rheumatoid arthritis who went on a strict paleo diet for nearly two months that doesn't allow for any foods that are usual triggers for

autoimmune reactions. That means no eggs, no nuts, grains, dairy, etc! This person still didn't get better until the fat intake was increased with the famous coconut fat bomb custard. Arthritic pains improved overnight with no supplements! Some articulations went back to normal after just two days on the fat bomb! This is one of the reasons coconut fat bomb is a most. It is the most delicious way to get all the anti-inflammatory fat you need in a day. If you can't get coconut cream and oil in your own country, order through the internet. You could also contact your local Dominican Republic or Thailand immigration center and/or consulate to find out where to find coconut cream. It is a staple food there, they simply don't go without it!

Keto-calculator

You can use this calculator to help you determine your ideal FAT intake for the ketogenic diet:

<http://ketodietapp.com/Blog/page/KetoDiet-Buddy>

Calculators out there are not based on longevity research. For instance, this calculator reduces the protein intake once keto-adaptation is achieved to 0.7 per *pound* for lightly active and 0.8 per *pound* for moderately active, 1 per *pound* maximum for extremely active. Keep in mind that these numbers are derived from *The Art and Science of Low Carbohydrate Performance* by Phinney and Volek, a book written for ATHLETES. We are using a range of 0.8 to 1.5 grams of protein per *kilogram* of ideal weight, based on longevity research quoted on the science background and on *The Art and Science of Low Carbohydrate Living* by Phinney and Volek as well, but which was written for health care

professionals, championing the benefits of carbohydrate restriction to manage insulin resistance, metabolic syndrome, and type-2 diabetes. So you have to adjust your protein intake according to the 0.8 to 1.5 grams of protein per *kilogram* of ideal weight:

- 0.8 grams per kilo if you are sedentary
- 1 grams per kilo if you are lightly active
- 1.2 grams per kilo if you are moderately active
- 1.5 grams per kilo if you are highly active

Keep in mind that the ketogenic diet starts with 0 up to 30 grams of carbs per day. Ideally 10 to 20 grams of carbs.

As for the fat, once you restrict carbs and moderately restrict protein, then there is no other option than fats. As Maria Emmerich points out in her book *Ketoadapted*, the following is a good equation to determine the amount of fat in grams you need to consume: Fat grams = (calories * (0.8 to 0.7)) / 9. For example, if you are shooting for 1400 calories a day with 80% of those calories coming from fat intake, then $(1400 * 0.8) / 9 = 124$ g of fat a day.

You can consume all the fat you need in order to not lose weight, or even more if you want to gain weight. If you want to lose weight and/or are unsure of how much calories you should aim to according to your needs, then you can use the recommended intake of the calculator below.



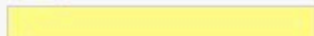
This calculator pays attention to protein, giving its maximum permissible while keto-adapting and then restricting it once keto-adaptation is theoretically achieved. That is much easier on beginners! In order to ease transition, they suggest a

protein intake of at least 120-150 grams as recommended by Lyle McDonald (*The Ketogenic Diet*) for the first 3 weeks. That can be a little bit too much for some folks. Also, Lyle McDonald was not taking into account longevity research quoted in the science background earlier. I suggest you use your common sense. Eat the fat you can tolerate at the beginning with the aid of supplements, and don't overeat protein unless necessary. You can keep that suggested range for the first 3 weeks in mind and then, remember to adjust to the ideal range for longevity purposes afterwards.



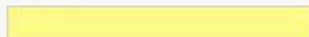
This might all sound very complicated, so here is a practical example. After entering all my data at <http://ketodietapp.com/Blog/page/KetoDiet-Buddy>, it tells me that:

Your activity level is: **Lightly active**
Your net carbs intake is: **25 grams**
Your ideal protein intake is: **63 grams**
Your fat intake should be: **116 grams to 167 grams**



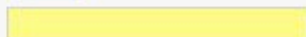
Your Basal Metabolic Rate is: **1235 kcal**
To **maintain your weight**, consume: **1851 kcal**

Carbs	25.0 grams, 100 kcal = 5%	
Protein	62.9 grams, 252 kcal = 14%	
Fat	166.6 grams, 1499 kcal = 81%	



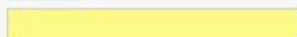
For **slow fat loss**, consume: **1622 kcal**

Carbs	25.0 grams, 100 kcal = 6%	
Protein	62.9 grams, 252 kcal = 16%	
Fat	141.2 grams, 1271 kcal = 78%	

For **moderate fat loss** (recommended), consume: **1508 kcal**

Fat	103.1 grams, 928 kcal = 62%	
Carbs	25.0 grams, 100 kcal = 7%	
Protein	62.9 grams, 252 kcal = 17%	
Fat	128.5 grams, 1157 kcal = 77%	

For **quick fat loss**, consume: **1394 kcal**

Carbs	25.0 grams, 100 kcal = 7%	
Protein	62.9 grams, 252 kcal = 18%	
Fat	115.8 grams, 1043 kcal = 75%	

Remember, it will only be a ROUGH guide to calculate how much FAT you need. I decided that I just want to keep my current weight and that I'm sticking to 25 grams of carbs per

day. Then, I calculate my protein intake according to my needs (lightly active): 1 gram of protein per kilogram of ideal weight: 55 grams of protein. So, the final result is:

Total calories to maintain your weight: (in my case) 1851 kcal.

There are 4 kcal for each gram of carbs, and 4 kcal for each gram of protein. There are 9 kcal for each gram of fat.

Carbs 25 grams, 100 kcal = 5% of 1851 kcal

Protein 55 grams, 220 kcal = 12% of 1851 kcal

Fat would be 83% of 1851 kcal = 1536 kcal (divided by 9) = 171 grams of fat. Or with the equation provided above: $1851 * 0.8 / 9 = 164$ grams of fat. So roughly 164-171 grams of fat.

Sample menu estimate

Breakfast

2 eggs (6 grams of protein, 8 grams of fat per each)

4 slices of bacon (3 grams of protein, 3.3 grams of fat per each)

Large mug of black tea with 1 teaspoon of xylitol (4 grams of carbs)

Lunch

Pork chop (21 grams of protein, 35 grams of fat)

Green beans, 1 cup (6.4 grams of carbs, 2.6 grams of protein)

Large mug of herbal tea with 1 teaspoon of xylitol (4 grams of carbs).

Dinner

1 serving of "light" version of coconut cream custard (9 grams of protein, 11 grams of carbs, 100 grams of fat)

Total: 56.6 grams of protein, 164 grams of protein, 21.4 grams of carbs.

If you don't have the brain nor patience for numbers, just stick to the suggested FAT intake in the keto-calculator and that's it. The important thing is to moderate your protein and restrict your carbs. Adjust fat intake according to your needs: weight loss, weight maintenance, weight gain.

As it was discussed in the cassiopaea forum,

Despite the saying that A Calorie is NOT a Calorie there is still some truth to A Calorie is A Calorie. If you reduce the amount of carbs ingested and keep your amount of protein in the 1g/kg body weight range (so as to not shunt unused amino-acids into glucose production), the amount of fat eaten will somewhat determine your weight. Eat little fat - lose weight. Eat more fat - keep weight, or put weight on, if everything else stays the same. If your goal is to increase your weight, then my recommendation would be to increase your daily amount of fat, while keeping carbs low and protein intermediate.-nickebleu

That seems to be the summary. On the previous keto diet, Ark[husband] lost a lot of weight. He tends to eat very little anyway, and going keto, he ate almost nothing because he wasn't enchanted by just meat and fat. Now, with his daily fat bomb, he is perfectly happy to get all those extra calories he needs (but not carbs or protein-to-glucose) for energy enrobed in coconut cream, chocolate, strawberry and now coffee custard! So the skinnies really can put on a bit of weight or maintain, and the chunkies can cut back and

nobody is hungry!-Laura

Summary

Carbs grams:

- From 0 to 30 grams of carbs per day (ideally 10-20 grams)

Protein grams:

- 0.8 grams per kilo if you are sedentary
- 1 grams per kilo if you are lightly active
- 1.2 grams per kilo if you are moderately active
- 1.5 grams per kilo if you are highly active

Fat grams: $(\text{Calories} * (0.8 \text{ to } 0.7)) / 9$.

Or basically all the rest of your intake, give or take if you want to lose weight, maintain weight, or gain weight.

Carb and protein counter for dummies

Carbohydrates

It is the Net Carbs that you take into account when considering your carb intake in grams. Remember, no more than 20-30 grams of carbs per day.

Props used to estimate food portions:

1 medium baked sweet potato (1 cup) ---- computer mouse or a fist

1/2 cup cooked broccoli ---- light bulb

1/2 cup serving ---- 6 asparagus spears; 7 or 8 baby carrots

1 ounce of nuts ---- one handful

Food Item (Amount)	Carb (gram)	Fiber (gram)	Net Carbs	Protei n
-----------------------	----------------	-----------------	--------------	-------------

	s)	s)	(gram s)	(gram s)
BEVERAGE S				
Brewed Tea, 8 fl oz.	0.7	0	0.7	0
Lemon, 2 tbs	2	0.1	1.9	0.1
DAIRY				
Cream, heavy, liquid 1 tbs	0.4	0	0.4	0.3
Cream,heavy , whipped, 2 tbs	0.4	0	0.4	0.3
Goat cheese, 1 oz	0.3	0	0.3	5.3
Sour cream, regular, 2 tbs	1.2	0	1.2	0.9
FRUITS				
Avocados ½ cup	9.9	7.8	2.1	2.3
Blueberries, Fresh, ½ cup	10.5	1.7	8.8	0.3
Cherries, sweet, fresh, ½ cup	9.7	1.3	8.4	0.7

Grapefruit, fresh, ½ cup	9.5	1.7	7.8	0.7
Strawberries, fresh whole, ½ cup	5.5	1.4	4.1	0.5
Raspberries, fresh, ½ cup	7.1	4.2	3	0.6
SWEETENE RS				
Xylitol, 1 teaspoon	4	0	4	0
Stevia, 1 package	1	0	1	0
Dark chocolate -4 squares	8	3	5	4.4
MEATS				
Liver, calf, 6 oz	4.9	0	4.9	33.6
NUTS				
Almonds, whole, roasted, 24 pieces	3	2	1	4.1
Chashews, whole,	5.6	0.5	5.1	2.6

roasted, 2 tbs				
Hazelnuts, roasted, 2 tbs	2.8	1.6	1.2	2.5
Chestnuts, roasted, 6 pieces	30	2.9	27.1	1.8
Macadamia nuts, roasted, 2 tbs	2.3	1.4	0.9	1.3
Pecans, roasted, 2 tbs	1.9	1.3	0.6	1.2
Pistachios, 2 tbs	4.7	1.6	3.1	3.3
Walnuts, halves, 1 oz.	3.9	1.9	2	4.3
VEGETABL ES				
Artichokes, whole, 1 medium	13.4	6.9	6.5	4.2
Asparagus, steamed, 4 spears	2.6	1.2	1.4	1.5
Green beans, ½ cup	5.3	2.1	3.2	1.3
Broccoli,	4.9	2.8	2.1	2.9

steamed, ½ cup				
Brussel sprouts, steamed ½ cup	6.4	3.2	3.2	2.8
Cabbages, green, shredded, raw ½ cup	0.8	0.4	0.4	0.5
Carrots, sliced, steamed, ½ cup	5.7	2.4	3.3	0.9
Cauliflower, steamed, ½ cup	3.6	2.2	1.4	1.6
Celery 1 stalk	1.2	0.6	0.6	0.3
Lettuce, iceberg, ½ cup	0.8	0.4	0.4	0.3
Pumpkin, boiled, ½ cup	6	1.4	4.6	0.9
Spinach, raw, ½ cup	0.5	0.4	0.1	0.1
Spagehetti	5	1.1	3.9	0.5

squash, cooked, ½ cup				
Summer squash, steamed, ½ cup	3.9	1.3	2.6	0.8
Zucchini, steamed, ½ cup	4	1.4	2.6	1.3
Sweet Potatoes, boiled, ½ cup	17.6	2.5	15.1	1.4
Turnip greens, raw, steamed ½ cup	3.6	2.9	0.7	0.9

Protein

Suggested protein moderation: From 0.8 to 1.5 grams of protein per kg of ideal body weight per day.

This is a “what you see is what you get” rough guide for those folks on a ketogenic diet and who are having trouble estimating their protein intake – which should be between 0.8 to 1.5 grams of protein per kg of ideal body weight per day. More than that will likely stimulate insulin way too much. Notice that the 1.5 gram upper limit is typically for those doing endurance exercise. The average person must stay between 0.8 and 1 grams of protein per Kg of ideal body

weight per day. If you have a fatty meat cut, it would have less protein, so these are only approximations. It isn't a good idea to exceed roughly 25g of actual protein in a meal since more has been estimated to silence longevity pathways (see science background on mTOR-stimulating threshold).

In the images below, use the fork or the plate as a visual reference. Dish plates are 25 cm long (9.84 inches). Content of protein is indicated for each total weight amount. Carbs are indicated when applicable. No fats are indicated because the rest of the energetic intake should come from fats mainly in the form of the fat bomb custard, fatty cuts, butter, lard or all of them mixed up in stock or bone broth. In fact, fat is the main protagonist of this diet.

Some carb dishes are illustrated, but ideally, the ketogenic diet should consist of 0 up to 30 grams at the very most. If you take those in the form of sauerkraut, then you'll have a healthy gut flora.

Ideally food should be weighted, so a scale comes in handy. You'll find a practical chart at the very end for weighting purposes.

Props used to estimate food portions:

3 ounces grilled/baked fish or chicken ---- checkbook

3 ounces cooked meat, fish, poultry ---- your palm, a deck or cards or a cassette tape

A 3-ounce piece of meat has approximately 21 grams of protein. The protein content in grams based on a 3-ounce serving is as follows:

Egg (1 medium): 6g
Bacon, 1 slice: 3 g
Coconut cream, 1 cup: 9 grams
Canadian-style bacon (back bacon), slice : 5 g
Fish: 21 g
Roast beef: 28 g
Roast chicken: 25 g
Other meats (average): 25 g
Sausage: 12 g
Ham: 18 g
Beef burger: 20 g
Corned beef: 26 g
Liver: 23 g
Sirloin steak: 24 g
Turkey: 25 g
Shrimp: 18-21 g
Cod: 19 g
Tuna: 22 g
Ground beef (regular): 23 g
Ground beef (lean): 24 g
Spare Ribs (lean): 22 g
Chicken breast: 25 g
Lobster: 17 g
Salmon: 22 g
Duck (roasted): 24 g
Lamb: 24 g

Protein content in 100 grams (3.5 oz) of:

Rabbit 23 g
Veal 20.7 g
Liver 20.5 g

Serrano ham 30.5 g
Cooked ham 18.4 g
Chicken slices 21.8 g
Turkey without bone and skin 21.9 g
Clam 10.7 g
Squid 17 g
Octopus 10.6 g
Shrimps 20.1 g
Anchovies 17.6 g
Tuna (Bonito) 21
Sole 16.5 g
Trout 15.7 g
Sardines 18.1 g
Horse meat 20 g
Veal 20 g
Organs 20 g
Pork 20 g
Lamb 20 g

10 grams of protein in:

75 grams of white fish
115 grams of oysters
75 grams of blue fish
40 grams of sausage
40 grams of bacon
70 grams of paté
80 grams of foie gras



Rasher (30 grams) – 14 grams of protein



Sausage (20 grams) – 4.2 grams of protein



Octopus (75 grams) – 14.7 grams of protein



Paté (30 grams) – 3.2 grams of protein and 0.7 grams of carbs



Mussels (43 grams) – 8.4 grams of protein



Serrano ham (46 grams, 2 units) – 13.2 grams of protein and 0.2 grams of carbs.



Shrimp (100 grams) – 18.1 grams of protein



Pork rinds (30 g) – 22.4 grams of protein and 0.2 grams of carbs.



Tuna (40 grams) – 11 grams of protein.



Anchovy (16 g) – 4.4 grams of protein.



Beef (150 grams) – 25 grams of protein



Cod (150 grams) - 14 grams of protein



Pork tenderloin (150 grams) - 19.6 grams of protein



Egg (60 grams) - 6.6 grams of protein



Veal stew (150 grams) - 28.8 grams



Roasted lamb (500 grams) – 18 grams of protein



Chicken (150 grams) – 32.5 grams of protein



Salmon (150 grams) – 30 grams of protein.



White fish (150 g) – 27.4 grams of protein



100g - 10.6 grams of protein



80 grams - 14.8 grams of protein



80g - 12.4 grams of protein.



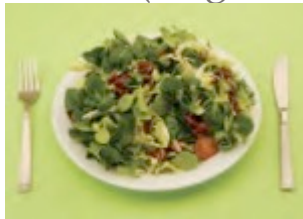
Artichokes with ham (300 grams) - 15.6 grams of protein and 10 grams of carbs.



Mushrooms (50 grams) – 1.7 g of protein, 0.5 g of carbs



Olives (50 grams) – 0.025 grams of carbs



Green salad (150 grams) – 5 grams of carbs



Green beans (200 grams) – 10 grams of carbs



Artichokes (200 grams) – 10 grams of carbs



Cauliflower (300 grams) - 10 grams of carbs



Sauerkraut (140 grams or 1 cup) - 3 grams of net carbs and 1 gram of protein

Notice in that in the carb counter above, some protein calculations were included, especially the ones pertaining to nuts.

Fats

1 slice of bacon: 3.3 grams

Liver pate 1 oz: 8 grams

Ham, slice, with bone, unheated, 1 serving (3 oz): 8 grams

1 pork chop (lean): 15 grams

T-bone steak, broiled, 1 serving (3 oz)(85 grams): 14 grams

1 egg, large: 8 grams

1 avocado (201 grams): 29 grams

1 stick of butter (113 g): 92 grams

coconut cream, 1 cup: 83 grams

coconut oil, 1 tbsp: 14 grams

olive oil, 1 tbsp: 14 grams

The following cut is perfect; it has around 3 ounces (21 grams) of meat and a big chunk of fat. Even if you don't have access to a cut like this one, ask your local butcher to NOT remove the fat from your meat. Pre-order if necessary.



Tips for a smooth ketoadaptation process

The first thing most folks ask is what they can actually eat. Basically, you'll be eating what people ate for most of human history, the most satisfying and delicious foods. Yes, there is actually quite a lot doesn't come from the food industry!

When beginning the diet, stick to the most anti-inflammatory foods:

Most vegetables (except tomato, potatoes, eggplants, red

peppers): asparagus, spinach, lettuce, broccoli, beets, cauliflower, carrots, celery, artichokes, garlic, onions, zucchini, squash, cucumbers among others. (Use the carb counter!)

Fermented foods: sauerkraut, pickled ginger, fermented cucumbers. You will need to make your own Search for information about anaerobic fermented foods in air-tight containers. These ferments do not produce histamines that some people react to (including rashes, digestive upset, inflammation) in aerobic, or open, ferments typically using mason jars.

Meats and their fat: fish, beef, lamb, organ meats, lard, tallow, duck fat, etc. Best choices are grass-fed and pastured meats from a local farm. Second best is organic. Avoid factory-farmed meats that contain antibiotics, hormones and that are GMO grain-fed. For a source of good meat near you, contact your farmer's market.

Low-glycemic fruits: strawberries, cherries and berries. Do keep this to the bare-minimum, just for the coconut custard recipe. It is very easy to over eat carbs and furthermore, they contain fructose which stimulates your appetite. When you eat in the coconut custard, you'll get full very quickly though.

Coconut: coconut oil, coconut butter, coconut milk, coconut cream. Be careful with the last two, several members of the forum had reacted to the guar gum added to them and

derived from beans. Ideally, you should get a guar gum free coconut milk or make your own (see recipes below).

Tea and herbal teas.

Olives and olive oil.

Common problems during ketoadaptation include dizziness, cramps, tiredness and fatigue. These problems are due to the fact that your entire metabolism is changing. When you restrict carbohydrates, you lose a lot of water retained in the body which for the most part constitutes what I call “inflammatory juice”. Carbohydrates promote the retention of water (and high blood pressure too!). Those with swollen legs at night (or throughout the day) and other symptoms derived from accumulation of liquids don’t necessarily have heart failure, but rather too much water retained from a carb metabolism. They can see a lot of weight loss at the initial stages of the diet. And with this inflammatory juice loss, they lose many minerals too. This is why drinking enough water and liquids, and getting enough salt and other minerals becomes so important. Supplementing minerals and other supplements which help alleviate cramps, headaches and fatigue becomes often necessary.

Even if you don’t have excess inflammatory juice, you’ll still need extra water and minerals in this diet. Isn’t that great? You can use all the salt you want! As your body gets ketoadapted, you’ll likely pee a lot, especially at the initial

stages of the diet. Don't be surprised if you have to wake up at night just to pee. Don't worry, once ketoadaptation is achieved, you'll get regularized without having an urgent need to pee all the time.

Drink all the water you need, but don't do it with meals as it will impair digestion. For the same reasons, don't take alkalinizing supplements with meals. You'll need all the digestive juices and acid you need to breakdown protein and fat from your diet, especially when switching to a high fat and low carb diet. Do invest on some sort of filtering: reverse osmosis, distillation or what you can afford. For those who prefer fizzy water, a soda streamer is a good solution.

Cut out coffee and alcohol altogether.

Taking fish oil gels and cod liver oil could help you increase your fat intake in a very nutritious and helpful way. Both are excellent sources for vitamin A and D, other than the much needed fatty acids to help heal our brain.

Also, best to have your last, small meal of the day slightly carb because too much fat late in the day makes your body supercharged!! You can get overheated and energetic when you are supposed to be sleeping!

Remember: protein that goes above your daily requirement gets turned into sugar. So find out what is right for you and stick there.

For those who want to GAIN weight, you can have a carb tending meal or snack (staying under the limit of what you have established as your tolerance for carbs while staying in ketosis) within 30 minutes AFTER the KETO workout. This is when your body is pumping out anabolic hormones and will use that food to build muscle.

A bit of potassium in the early months is useful because your body may flush a lot out along with the water it is eliminating. Check out the supplement section for a suggested dose. Also, keep in mind that dried herbs such as parsley, basil, oregano (etc!) have more potassium without the added sugar of bananas or other popularized foods to replace potassium. Avocados are a great source of fat and potassium as well; they are also among the most pesticide-free fruits in our world today. Fish and cocoa powder are also great sources of potassium. Organic fish is a very complete food and as long as it has more selenium that can neutralize mercury contents, you are safer.

Have a good breakfast with eggs, bacon and sausages. You can cut off the egg whites if they bother you. People who are allergic or sensitive to eggs are reacting for the most part to the egg whites. If you have your breakfast, and then maybe later in the afternoon around 2 or 3pm you can have a big bowl of Scarlett's bone broth(see recipe below). You use the blender on it so it's like a creamy soup, and then have your fat bomb for dessert (see recipe below), and you don't have

anything after 3 o'clock. And if you don't eat anything until 9am the next morning, you have engaged in intermittent fasting but it's painless because you're not hungry, and a good portion of the time your fasted, you're asleep.

The good news is that the "fat bomb" kills the carb cravings with some ruthless efficiency, whilst also providing the same hit of happy brain chemicals that one is craving when reaching for the sugar. If you need a little extra help, try L-glutamine sublingually and of course more tobacco. If you think you need extra help with sugar cravings, consider 5 HTP which is explained further below.

As to regards to getting used to digest fat after a lifetime of carbohydrates and its anti-nutrients... Trying to keep a high fat intake can be tricky for a while. Some never get upset stomach, but would get loose stools occasionally. The sluggish liver protocol posted in the supplement's section is the way to go for the first few months. What also helps is to break up the daily fat consumption - have a fatty snack or two during the day instead of getting all that fat in only two meals; that helps with the loose stools. You get the same amount of fat *for the day*, but at smaller amounts, more often.

Some carbs in the way of fermented foods (i.e. sauerkraut) will help you to keep a happy gut flora. Other than digestive enzymes and HCl, apple cider vinegar will help you to digest protein and fat.

Remember that toxic fats will be "mobilized" to be burned and also other toxins stored in the fat can cause problems. So some days of troubleshooting is normally expected.

Boiled down tips

- Have enough salt.
- Restore potassium and magnesium. See supplements section for dose suggestions.
- Drink enough water
- Don't be afraid to eat fat.
- Invest supplements to ease up ketoadaptation.
- Have a good night sleep.

Just an update...I am in my third week of the ketogenic diet. After reading keto adapted, I decided to dive in and I am so glad I did. I feel amazing! My joints have near zero aches and pains, and I have a steady stream of energy all day. My skin has totally cleared up, and it feels so much better. I sleep through the night soundly, and pop out of bed in the morning.

The recipes in the keto recipes thread have been a big help. The first time I went keto about a year or more ago, I now know I wasn't getting enough fat and I wasn't really sure what to eat. This time I feel well informed and more organized. It has been a much easier transition. -Angela

Recipes

Beef roast and Beef Liver Paté by LQB

Here is a combo recipe for a beef liver pate and a slow-cooked beef dish. I like to combine a dollop of each in a bowl and warm it up to produce a very tasty thick stew that has very high fat content. When you stir it up a bit, the fat mixes well so it's not like you are slurping up pure fat. The fat/protein/carb content will depend on what you actually use, but even with the onion added, the per serving carb content will be very low.

Beef Liver Pate

1-1 ½ lbs beef liver
1lb beef heart or other organs
1lb liverwurst or braunswieger or other organs
1 ½ - 2lbs ground beef
1 package bacon
4 cups lard or bacon fat (rendered)
1 med onion
2 TBL dried garlic granules
2 TBL salt
Ground nutmeg to taste
2 Tsp dried thyme
½ Tsp dried Dill
1 Tsp dried Sage
2 Tsp ground pepper

- Grind the bacon in a processor to a paste (wash the processor before use below)
- Begin cooking the bacon in the fat/lard in a large pot
- Cut the liver/organ meats into ¼ to ½ inch pieces and add to pot
- Add all other meat to the pot
- Cook on Med-Low slowly for about 1 to 1 ½ hr
- Remove from heat and let the pot cool to warm
- Put cut up onion (or onion powder) and spices in clean food processor and grind to a paste
- Add meat/fat mixture from pot and grind until smooth
- Transfer ground mixture to a large bowl
- Grind all the meat fat and transfer to the bowl
- Mix the bowl well and transfer to the fridge
- Done – this will keep in the fridge for many weeks

Beef Roast – Slow Cooked

5 Packages beef short ribs OR 3-4 lb chuck roast

1 Qt Bone broth (including fat)

1 ½ TBL low-sugar berry preserves

2 TBL apple cider vinegar

2 TBL Nama Shoyu soy sauce (organic, unpasteurized, fermented) – OR – add salt

2 Med onions (optional)

Dried garlic granules

Extra beef tallow 1 ½ cups (optional)

- Sprinkle the meat with garlic granules

- In the slow cooker pot, mix broth, vinegar, soy sauce, preserves
- Arrange meat in pot so that it is covered in the broth
- Add extra tallow and quartered onions on top
- Cook on LOW overnight
- Allow to cool
- Remove meat from bones/grizzle, return to pot, mix, and put pot (covered) in fridge
- Should stay good in the fridge for 2 weeks or freeze excess for later

Bone broth

Get some ox-tails - about as many as the size of a loaf of bread (regular, not long). Then, some short cut long bones with good marrow. About half the amount of ox tails. Put them in a pot with salt and pepper. Cover with water with an additional 2 or 3 inches. Cook overnight or 8-10 hours in low temperature (i.e. crockpot), or 3-4 hours in pressure cooker just under the "spitting level".

Use any bones, marrow, parts of the animal rich in connective tissue, fat and some meat.

The "jelly" part of the broth comes from the gelatin in the cartilage of the joints. Pigs feet make a great broth because there are so many joints with cartilage in them. Same with ox tails. Ask specifically for the joints and have them halved, or even quartered with the bandsaw. To get the marrow out of bones, the bones need to be cracked open. A really good broth looks like gelatin when it's cold. If you get a looser

gelatin it means it wasn't cooked long enough or there wasn't enough connective tissue.

Don't skim anything off. Just remove the bones. An option for those who don't like the "scum" is to use a blender once it cools down a bit, and it turns into a creamy broth. You can add some extra lard or butter to it to make it fattier. The minerals that come out of the bones and the stuff in the marrow just does something! Also, what really helps to bring the nutrients out of the bones is to put some cider vinegar (organic!) in the water, it also helps to digest the fat and some people like the flavor as well.

Scarlett's bone broth



Ingredients

- 12 to 15 marrow bones (according to the size).
- 3 to 5 pig feet (according to the size).
- 1 or 2 veal cross (it is the knee bone).
- Salt, pepper, turmeric, ginger, mixed herbs of Provence (thyme, laurel, rosemary), or quite different spices or herbs which you prefer.

Preparation of the recipe

Put the pig feet, marrow bones and veal cross in a big pot. Cover it totally with cold water, close the pot and put it over a low heat for at least 12 hours.

When time is up, get out the pig feet, marrow bones, veal cross and all what is substantial (including the most little bones from the feet pig) and put them in a large hollow dish. Let it cool.

In the broth which is waiting for in the pot, add 2 to 3 liter of water according to the quantity lost during the cooking. Add some lard/fat of duck (the quantity depends on the wished result: more or less fat). Put back over in low heat.

Once pig feet and bones are cool enough to put it your hands, separate the elements:

- If you use a mixer/blender, put the marrow and the bones gelatin in it and also the pig feet skinned of any bone.
- If you use a hand-blender, put the marrow and bones gelatin in another large hollow dish and also the pig feet skinned of any bone.

Be careful, some pig feet bones are very small and they could damage the knives of your mixer.

The pig feet also can be skinned, but it is not an obligation.

Add in the plat or in the mixer (depends of what you use) salt and pepper; and turmeric, ginger, mixed herbs of Provence.

Mix the whole until you obtain some kind of foam.

Prepare 6 or 7 glass jars (like the ones used for canning) of 1 liter each and distribute the foam in each jar.

At this time of the preparation, you can add some butter, either directly in every jar, or in the pot which still has the broth waiting (the butter doesn't need to be cooked and will keep all its nutriments).

Then distribute the broth in each jar and close them.

Wait until they have totally cooled and put them in the fridge. The bone broth can be kept there for at least 15 days. Of course, they also can be canned!

Today we made a batch of Scarlett's bone broth. We didn't use the same spices as she recommended because some people in the house are sensitive to them. Instead, we added a bit of garlic, onion, salt and pepper. And some canned mushrooms. It came out really good!

I personally like it waaay better than plain bone broth. It's like a mushroom cream soup, and very filling. We have our standard broth and the new one in the kitchen, so people can choose which one to drink.

Thanks for this great recipe Scarlett! The pig feet and the knee bone really make a difference. You can tell there is more fat and cartilage than with just the marrow bones.

You can stop eating at 3pm, and then just go to bed and that's already intermittent fasting since you need 13 hours of not eating. And then in the morning if you're hungry, another fat bomb or more broth, and then at 3pm you stop eating again. - Chu

Breakfast sausage

(You can increase this recipe proportionally according to how much meat you are using)

Sage

16 ounces (1/2 kg) ground pork or lamb with loads of fat

1 teaspoon salt

1/2 teaspoon dried parsley

1/2 teaspoon rubbed sage

1/4 teaspoon ground black pepper

1/4 teaspoon dried thyme

1/4 teaspoon crushed red pepper

1/4 teaspoon coriander

Mix well, shape into patties and refrigerate overnight for the flavors to mingle before cooking.

Capputeano

by Carlisle

Ingredients:

100g butter/coconut oil (a mix tends to work best)

1 Tsp Xylitol or whatever sweetner

Teabags and roughly a large mug of water - Regular tea works fine.

Brew the Tea.

Add butter / coconut oil - Allow to melt.

Pour it all into a blender (immersion blender works fine) and blend like crazy.

Sweeten to taste.

The result should be a creamy, cappuccino-like beverage with lots of froth sitting on the top. It's super simple for loading up on fat, and can also be used with coffee if tolerated.

Most days I make something similar to what Carlisle calls Capputeano:

-6-10oz. hot chai tea

-4-6 tbsp. butter (I normally clarify this to ghee as the first step in the process) : 48-72g fat

-2 tbsp. coconut oil : 28g fat

-1 egg yolk : 4.5g fat, 3g protein

-1 tsp. xylitol

-Cinnamon and cardamom added

Put everything in a blender, and it all comes together quite smoothly (the egg yolk emulsifies). I usually strain the hot butter with browned milk solids through a reusable tea bag (kind of like a small bag of cheesecloth) over a mesh

strainer.

So it's around 92.5g fat(5Tbsp. butter+2Tbsp. oil+1 egg yolk)/3g protein/4g carb(sugar alcohol). I find it very palatable, but it is rather rich, so remember to "chew" a bit and give your body the heads up it's getting a load of fat.

-Resistense

Coconut cream custard AKA Fat Bomb
by Laura



10 servings

1 liter or 1 Quart of coconut milk (canned is fine)

24 egg yolks

500 grams or 1 pound sweet butter

1 cup coconut oil

3 soup/ tablespoons of plain (knox or other) gelatin

11 tsps xylitol or 14 tsps erythritol

Vanilla

grated, unsweetened coconut if desired - 1 cup

Put the coconut milk, butter, coconut oil, gelatin, xylitol in the pot. Mix around to start the gelatin dissolving. Put pot on a heat diffuser on the stove, low medium heat. Stir it occasionally as it warms up. Meanwhile, separate the eggs. Freeze or toss out the whites.

Make sure the eggs are beaten up, none of the yolks whole.

When the mixture in the pot starts getting hot and steaming, you want to get ready to put the egg yolks in very carefully. This is crucial. I use a meat thermometer and when it says that the temp is 70 C - 158 F - it's time.

Take the pot off the stove.

Start drizzling the egg yolks into the pot while whisking thoroughly between each addition. I usually add a bit, make

sure it is mixed well, add a bit more, mix well, and so on. Have a scraper handy to scrape out the bowl into the pot.

Put pot BACK on the heat. At this point, you want to stir constantly until the mixture starts to thicken. That will happen when you come back to your temperature 70 C - 158 F. You can feel it. Once you feel a definite thickening, about one more minute of stirring. At this point, take the pot off and set it into cold water in the sink and keep stirring until the water in the sink gets a bit warm. While doing this, add the vanilla. A good bit if you like. I put in 3 or 4 tablespoons, more or less.

Next, put the pot on the counter. At this point, you can make different flavors.

For coconut: Get 1/2 cup/4 ozs/100 ml of water ready and your immersion blender. Add in your cup of grated, unsweetened coconut. Mix. Then, start blending the custard and add the cold water. Blend all around in the pot until the water and plenty of air is fully integrated. This step gives the custard a super light, silky texture. Also, if you let your custard get too hot and it curdles, doing this will restore creaminess.

For chocolate: Stir in about 3 or 4 tablespoons of plain cocoa instead of coconut. Follow directions above.

For coffee: Instead of adding cold water, just add an equivalent amount of cold, strong, coffee. Blend thoroughly. [Note: coffee shouldn't be consumed at the beginning of the diet when you first start healing your gut]

For lemon: Instead of adding cold water, add 4 ounces of lemon juice and a dash of lemon extract. Blend thoroughly.

For strawberry: Instead of adding cold water, add half a cup of mashed strawberries and a tsp of strawberry extract.

Finally, ladle into dessert dishes or little jelly glasses or yogurt glasses and refrigerate for an hour or so.

The coconut milk has 17 grams of fat per 100 ml. That's 170 grams of fat and 40 carbs and 14 grams of protein per liter.
24 yolks = 192 grams fat, 65 grams of protein
500 grams of butter = 410 grams of fat, 4 grams of protein
1 cup coconut oil = 230 grams fat
11 tsps xylitol = 44 grams carbs
1 cup shredded unsweetened coconut= 12 grams of carbs, 27 grams of fat and 3 grams of protein.

Total fat = 1002 grams
carbs = 84

Divided into ten servings: 100 grams of fat, 8 carbs and 8 grams of protein. So one can get THAT MUCH fat in and enjoy it and only use of 8 carbs of a 20 or 30 carb per day allowance. And if I find that the other sweeteners can be used and tolerated and don't mess up the taste, then even better!

With the shredded coconut: 103 grams of fat, 9.6 grams of carbs, 8,6 grams of protein.
Half a cup of strawberries has 4.1 net carbs, so the amount per serving is pretty negligible!

Tips and tricks (via Chu and Laura)

The only trick to make it layered once you have made your three different fat bomb flavors is to pour the first layer in the cake mold and freeze it for about 20 mins till it's solidified, then pour the second one (with strawberries and coconut if you want), 20 minutes in the freezer, and then the third one. Done! While the other batches are waiting, leave them on the counter (not in the fridge), so that they stay liquid and at room temperature. That way, you end up with smooth layers.

You can also add an extra teaspoon of gelatin to the fat bomb mix for it to hold together better, but it's not absolutely essential if you cool the cake enough in the freezer, and take it out of the mold just a few minutes before eating.

You can have all the layers and flavors you want! The one in the picture above was chocolate, strawberry and coffee.

The pink sauce you see on top is just 2 cups of fresh strawberries that we put in the blender, no sugar added, and sprinkled shredded coconut for decoration. The carb/fat/protein ratio ends up being practically the same as the fat bombs.

You can also increase the gelatin to 4 tablespoons to make the custard very "sturdy" for pouring into molds. They set up beautifully and sliced just like a cake. It is really like an ice-cream cake more than anything else!

There is any reason not to freeze it. You might want to let it defrost a bit before eating, though.

You should probably measure out your portions fairly accurately and stick to that amount each day. Don't let the goodness make you greedy or you'll have digestive problems. If you need some Betaine HCl at the beginning, that's okay. Don't eat it late in the day, either unless just a small amount.

There could be weight gain if more fat than needed is consumed. Or, at the very least, depending on the individual metabolism, NO weight loss. That's why it is a blessing for some of the skinnies who don't need to lose weight, but tend to do so on a keto diet when they are unable to keep up their energy needs by taking in sufficient fat.

The custard version is VERY taste and texture appealing and travels well for lunches and trips, etc.

I don't see any reason why the fat bomb can't be made with any other combination of fats you want such as ghee, coconut oil, tallow/beef fat, lard. We made a batch with lard and without coconut oil and it was delicious. The thing that holds the mixture together and gives it the anti-fatty texture is the large quantity of egg yolks. The gelatin gives it more body.

Theoretically, with the egg yolks and gelatin, you could create any number of other mixtures that you want to set up and be edible this way including salmon mousse, chicken or ham or a pate mixture, or an aspic with bits of meat and olives in it. It doesn't have to be sweet, it can be savory. So, in this way, you can get plenty of fat into the diet under your "conditioned anti-fat attitude radar".

Yes, if you follow the recipe exactly, you will have a beautiful and delicious product, low in carbs, loaded with fat, and

absolutely delicious. We've also put it in the ice-cream freezer as an experiment and it works well! Whoda thunkit? Low-carb ice cream???

Meanwhile, not everyone is okay with coconut cream/milk/oil. We have a couple "canaries in the mine" who demonstrate some intolerance to it. So, we conducted an experiment making the recipe with water replacing the coconut milk, lard replacing the coconut oil, but same ratio of fats and egg yolks etc. We have to tell you, there is a distinct difference between it and the coconut milk/oil version. WAY more filling for less. Total satiation. They ARE delicious and the ones with coffee added taste like butterscotch. So yeah, those who can't deal with the coconut can still get the fat in. And that's not to say that you can't have a coconut one now and then.

Today Alana and I made a double batch of coconut-free fat bombs, adapting yesterday's recipe a bit. They came out perfect, AND they are indeed more filling. Several of us had started to notice some bad effects from the coconut, so we prefer to avoid it from now on.

Anyway, here's Laura's recipe, adapted to be Coconut-free:

400 ml water

750 grams or 1 pound sweet butter or ghee

750 grams lard if preferred

3 soup/tablespoons of plain (knox or other) gelatin

11 tsps xylitol or 14 tsps erythritol (we actually put 8 and it was sweet enough for most people - try and see how you like it.)

24 egg yolks

vanilla

Same instructions as before.

Remember that on top of the 400ml of water, you will be adding some more to the mix when blending at the end. So, in total it will roughly have added 500ml. I think the best is to try it as I posted it, and then find out what consistency you like best. 600 ml of water may be fine in the end. But any more, and I think you'd end up with not enough creaminess.

- Chu

Today we made our fat bombs without any butter at all (the only kind of fat was lard), and they came out really good:

500 ml water

1.5kg lard

3 soup/tablespoons of plain (knox or other) gelatin

8 tsps xylitol

24 egg yolks

vanilla

Same instructions as before.

They were choco-coffee flavored. Yum!

-Chu

I'll repeat the warning: handle the Keto Custard with care. There is a LOT of fat in there and it goes down so easy you won't realize just how much you have consumed! You need to keep your fat levels in conformity with your daily energy requirements!

Less fat option for a daily custard:

3/4 of a 500 gram chunk of butter, and 1 cup of coconut oil.
Still 23 or 24 egg yolks. You can also add two tablespoons of water and use the immersion blender. The texture would be like silk and very light!

2 servings version

4 egg yolks

100 grams of butter

200ml or 1 cup of coconut milk

3 tablespoons of coconut oil

2 teaspoons of gelatin

2 rounded teaspoons of xylitol

Dash of vanilla-liquid and/or powder

3 tablespoons of shredded coconut if desired.

Put the coconut milk, butter, coconut oil, gelatin and sweetener in the pot. (You can use a heat disperser on a gas stove under the pot.) When it gets hot and starts steaming and looking like it wants to get close to boiling, drizzle the egg yolks in while beating constantly with a whisk (or electric mixer). Continue heating while stirring well constantly.

Don't let it boil. It will thicken some... Then, after about a minute, put the pot into cold water in the sink and kept stirring for a few minutes. Then, added the vanilla and ladled into dessert dishes and put in the fridge.

If you want to add cocoa powder, add it to the coconut milk/butter mix before adding the eggs and whisk well.

Coconut milk

Via Paleo Mom (thepaleomom.com)

Ingredients:

$\frac{3}{4}$ cup organic finely shredded unsweetened dried coconut (I like Tropical Tradition's or Let's Do Organic brands)

1 $\frac{1}{4}$ cup just boiled water

1. Place coconut into the large cup of a Magic Bullet or bottom of a Blender.
 2. Add freshly boiled, very hot water to coconut.
 3. Blend on high for 5 minutes (with the magic bullet, I blend for 45-60 seconds at a time, give the motor a few second break, and then repeat).
 4. Pour pulp into a Nut-Milk Bag or Cheesecloth (or other chosen strainer) suspended over a glass bowl, mason jar, or measuring cup (have your strainer suspended over your bowl before you pour in the pulp).
 5. You can either let gravity do its thing or you can squeeze the pulp through your bag or cheesecloth to release to coconut milk (I suggest waiting for the pulp to cool a little before doing this).
 6. If not being used immediately, store coconut milk in a glass jar in the fridge (the jar is great for shaking up later).
- Enjoy!

Chocolate

by Château Crew



Photo by Yas

Ingredients:

250gr butter

1 cup of xylitol

1tsp vanilla essence

1 cup of cocoa powder (or 1 1/2 depending on how bitter you want it to taste)

Preparation:

- Melt the butter and the xylitol, at very low heat. (If it gets too hot, it won't blend perfectly with the cocoa)

- Add the vanilla essence

- Turn the fire off, and incorporate the cocoa powder very slowly, stirring constantly or with the help of a hand whisk.

- Pour into molds, and cool in the freezer for about 15 minutes.

Done!

Optional:

- If you are not sensitive to nuts, you can add some cashews, almonds, etc.
- If you aren't restricting carbs too much, or for a special occasion, you can add raisins, dried cranberries, orange zests, or other fruits in moderation.
- Add three drops of peppermint essential oil to get mint-flavored chocolate without any added carbs.

Chocolate pudding

Follow the same recipe as above plus, once the chocolate is done and still warm:

Mix 8 egg yolks in a blender, incorporate the chocolate slowly and blend some more, add two table spoons of gelatin powder. Cool in the fridge or eat warm if you prefer it that way.

Chocogelatin

By Yas



- 2 cups of bone broth
- 2 tablespoons of cocoa powder
- 2 eggs
- 1 or 2 teaspoons of cinnamon
- Stevia (or xylitol)

Do a bone broth without any spices or salt. The idea is to extract the nutrients from the bones and get a gelatinous consistency which will serve as “primal matter” for the recipe.

Place 2 cups of bone broth in the blender. Add 2 tablespoons of pure cocoa powder or a quantity according to your taste. Add 1 or 2 teaspoons of ground cinnamon. Add 1 tablespoon of lard to make it creamier. Add stevia according to taste.

Separate the yolks from the whites of your eggs. Add only the yolks to the blender with the rest of the ingredients listed above. Blend the whites separately by themselves until you get a creamy consistency.

Mix all the ingredients (minus the whites) for 2 or 3 minutes. Place your mixture in a bowl.

Place the whites on the same bowl and mix slightly so they will not lose their consistency. Place everything on a final recipient and keep it in the freezer for 30 minutes, then on the fridge for 1 hour.

It is delicious! There is no trace of the broth taste and this recipe is ideal for those who are very sensitive to several ingredients, and certainly a good way of eating bone broth on a hot day.

I guess we can make a lot of variations of the same recipe. Like, the egg whites aren't really necessary, you could add more lard, butter, and coconut oil maybe (and milk if it is OK), you can also add vanilla (I just can't find natural vanilla here), you can use gelatin powder instead of bone broth but that will leave all the benefits of the bone broth out, etc...

Chococcino

120g fat; 24g carbs; 3g protein.

80-100g of butter, cubed

2 heaping Tbsp cocoa powder

15-20g cocoa butter (this is the secret ingredient! Adds fat and deliciousity)

2 Tbsp xylitol
3 drops stevia extract
A healthy pinch of salt (don't be shy here)
750mL water

Heat the water in a pot on the stove. Once boiled, take off the heat and whisk in cocoa, xylitol and stevia. Add cold butter, cocoa butter and lecithin to a blender. Pour in the chocolatey liquid and blend well until it's frothy and delicious. Serves 3 or 4, but everyone will probably want seconds!

You can use coconut cream instead of water to get the fat count up even higher. Maybe add some egg yolks too.

Deviled eggs

- eggs
- home-made mayonnaise (see below)
- butter

Place eggs in a saucepan and cover with water. Bring water to a boil then remove from heat. Cover and let eggs stand in hot water for 10 to 12 minutes. Remove from hot water and rinse eggs under cold running water to cool. Peel the hard-cooked eggs, and cut in half lengthwise. Remove yolks and place them in bowl. Whip egg yolks with softened butter. Fill egg white halves with the butter yolk mixture.

Home-made mayonnaise

- 3 egg yolks (8 grams of protein, circa 2.7 for each large egg yolk)
- 3 tsp of mustard (1 gram of net carbs, circa 0.3 carbs per each teaspoon)
- 3 tsp of lemon/lime juice (2.16 grams of carbs, circa 0.72 carbs per teaspoon)
- sprinkle powdered garlic
- sprinkle enough black pepper
- 1/2 tsp salt
- mix everything
- lots of olive oil, add slowly until mixture gets whitish and with good consistency.

8 grams of protein, 3 grams of carbs.

Ghee butter

by Rebecca Wood at rwood.com

Makes about 2 cups

It is critical to use unsalted butter to make ghee; and for the most flavorful result, use cultured butter. Organic Valley and some – but not all – European-Style butters are both cultured and unsalted. This recipe is easily doubled or tripled but requires increased cooking time.

1 pound cultured, unsalted organic butter

Place the butter in a heavy quart saucepan and melt over medium heat, do not cover the pot. When the butter starts foaming, reduce the heat and simmer uncovered and undisturbed for about 15 to 30 minutes, depending upon the heat and weight of the saucepan. As its water content

vaporizes, it will foam and you'll hear tiny, sharp crackling noises. The ghee is ready when it:

- Changes from a cloudy yellow to clear golden color
- Develops a popcorn-like aroma
- Stops foaming and making crackling noises
- Develops a thin, light tan, crust on the nearly motionless surface
- The milk solids at the bottom turn from white to tan

Keep a close watch on the ghee and remove from the heat when done. (If overcooked, it browns and starts foaming.) Let cool until it is just warm.

Pour through a fine sieve or through several layers of cheesecloth into a clean, dry glass storage jar. Discard the strained out solids. When the ghee is completely cool, cover tightly and store in a dry place away from direct sun light. It doesn't require refrigeration. Always use a clean spoon to dip into it.

Variation: Oven-made Ghee

Preheat the oven to 300 degrees F. Put the butter in a 1½ to 2 quart casserole or oven-proof pot. Place the butter in the oven without a lid and allow it to clarify, undisturbed, for 1 hour. As it boils and foams the water content vaporizes and if you open the oven you'll hear tiny, sharp crackling noises. The ghee is ready as detailed above.

Remove the ghee from the oven. Skim off the crust and, if desired, use it as a flavoring agent.

Guacamole

By Keyhole and Thorn

Ingredients:

1/4 cup of bacon/pork fat (or more) 32g fat

1 whole avocado (13.5g carbs, 22.5g fat)

1 clove of garlic crushed (if tolerated) (0.1g carb)

1 handful of fresh parsley (lots of potassium) (about 0.5g carb?)

1 teaspoon of ground fresh black pepper

1 teaspoon of crushed celtic sea salt

1/3 of a lemon juiced

1 1/2 table spoons of olive oil - 22.5g fat

First - Mash the avocado in a bowl and mix in the crushed garlic, pepper and salt. Then chop the parsley into small pieces and mix into the avocado well. Add the lemon juice, olive oil and fat and stir unto smooth in texture, like a thick paste :)

All in all - 77g fat and 13.5g carbs. This can make two or three servings, which equals 6.75g carb or 4.5g carb per serving :)

We usually have this for breakfast along with bacon and omelette, we used to have just plain avocado but we have found that the avocado works very well at holding the fat together, so it is more like eating a sauce rather than just eating fat by itself. I would imagine it works well as a spread on other meats aswell. perhaps on some pork chops !

Gravy

by Carlisle

Render your own lard, take the rendered pieces and put them in a frying pan. Add some broth to the pan, along with some butter/lard, and mash them up on a medium heat (mash for a long time until it gets to a thick, viscous consistency).

Then add whatever herbs and spices you like. This makes a great kind of "gravy" that can be eaten with a meal or even as a standalone snack.

Liver paté

by Chu and Château crew



Ingredients:

1 pork (or veal) liver (or a mixture of liver, chest and throat -
grounded)
10 slices of smoked bacon
2 cups lard
1 tbs salt
1 tsp pepper
A pinch of ground nutmeg
1 tsp thyme
1 tsp dried garlic
1 tsp dried onion
(you can modify the quantity of spices according to your
personal taste)

Instructions:

1. If you have only liver, cut it into small pieces and let it
marinate in vinegar, olive oil and salt for at least 1 hour.
Rinse. (This is in order to soften the liver and make your pâté
have a more creamy consistency)

If you have a mix of liver, throat and chest, ignore this step.
The mix is better if you don't like how liver tastes. But both
are yummy if you do!

2. Pour the lard into a big pot, and add the liver or mix. Add
the slices of bacon. Cook at low temperature for about 1 hour.
Let it cool down.

3. Mix in a food processor until you have a paste, or a bit less
if you prefer your liver to have solid pieces of meat. Add the
spices to the paste. Taste and make adjustments with your
spices according to your preferences.

4. Refrigerate, or can for storage.

Meat balls with coconut milk
by Chu

Proportions for 4-6 servings:

1 1/2 cup coconut cream

2 cups of bone broth

1 cup butter (or lard)

(the spices or flavoring of your choice, until it tastes alright for you)

Rather plain meatballs, cooked in deep fat, then put into a big wok type pan and coconut milk with all the ingredients. Let it simmer so that it thickens a bit. Done! The broth, butter and spices end up masking the coconut taste, so it tastes like a sauce made with real cream (for those who miss dairy!). Ideal for any kind of meat! You could make a pepper, garlic, lemon, onion sauce, etc. depending on which spices you can tolerate better.

Meatloaf

by another magyar

1 lb. ground beef

1 lb. ground veal

2 lb. ground pork

1 pack - 6-7 scallions

1 small onion

1 bunch of cilantro or parsley I use both
1 tbl spoon onion powder
3-4 cloves of garlic, diced
1 tbl spoon garlic powder
1 tbl spoon ginger, grated or diced very small
sea-salt
2 big tbl spoon of lard
1 egg

also a dash of herbs: marjoram, black pepper, lemon pepper, coriander powder. Of course you can add your own things and take away things.

Use a big bowl to mix everything together by hand.

Put a little lard in a glass pan, spread it evenly with a spatula and form two loaf.

Preheat the oven 375 degrees F.

Takes approx. 1 hour.

Yummy recipe, thanks! Around here, once a week we make a simpler version (because not everybody can tolerate many herbs). It's just ground pork, our sausage mix (salt, pepper, garlic, onion, sage) and egg yolks for binding. Sometimes we add ground beef, but not always. That's it. It tends to be our Sunday meal, just before the radio show. - Chu

Pickled eggs

by Chu and Château Crew

For a 1L jar:

About 16 hard boiled eggs (peeled, of course)

1tsp turmeric
1/2 coarse salt
1 pinch of celery salt
1/4 tsp mustard grains
2 tsp xylitol
and then, only apple cider vinegar (no water)

We just filled in the jars with the eggs and the spices, added vinegar, closed the jars, and processed them for 20 minutes in boiling water. Two weeks later, they came out great. They have a nice yellow color from the turmeric, and a nice hard consistency.

We also tried with ginger and vinegar, but they came out too vinegary. They are good too, but the above recipe made them much more flavorfull. Well, it will depend on everybody's taste.

Pig's head terrine

Slow cook the whole head in a broth (with vinegar and spices) for 12 hours, take the head out and the meat should just fall off the bone. Cut the meat into smaller chunks and lay it into a dish. Then reduce the broth you cooked the head in by about 2/3 and pour it over the meat and refrigerate. The reduced broth will turn into jelly. Cheap - and delicious! And lots of fat!

Pork Rinds

Ingredients:

- Pork skin
- Salt
- Lard

Preparation:

1. Take the pork skin and cut it into small squares (or whichever shape you want). Take into account the fact that they will become four times their original size when cooked, so you might want them fairly small. You want to remove quite a bit of fat from them only leaving about 0.1 inches (3 mm).
2. Spread them in a flat oven tray, and sprinkle lots of salt on them.
3. Set them in the oven at 110 degrees Celsius for about 12 hours (until they are dried - you can knock a piece against the counter and it sounds hard, but it mustn't be burnt either)

Note: You can keep them in the refrigerator for a few days and cook them as needed, a small portion at a time. They will stay crunchy for about a day, after which they become a bit rubbery, so you might want to cook enough for just one day.

4. Heat up some lard at a high temperature just before it smokes. Throw one piece in the pan. If it starts to pop like popcorn within 30 seconds, it means your lard is hot enough and you can add all the other pieces of skin in. Otherwise, heat the lard a bit more and repeat the process.

Once done, you can sprinkle some salt, and whatever spices you like. You can make a sauce with olive oil, garlic and salt, and they taste just like garlic bread. You can pour a bit of the sauce in the bowl, shake it, and it's done.

Another option is using the exact same recipe, but instead of raw pork skin, use the skin from bacon slices. That makes very thin and crunchy curls, and with the smoked flavor from the bacon, they are delicious!

Roughly, 60% protein and 40% fat. So, they are to be eaten in moderation, and with fat added. They make perfect little "toasts" for the fatty paté, or as croutons in bone broth.

Pork Jowl by Renaissance

3 pork jowls cut into 2 or 3 oz pieces (you can just use the whole jowl but I like to cut it up in 2-3oz pieces first so each portion gets fried later)

1 head garlic

1 onion

2 bay leaves

1 teaspoon peppercorns

Salt and freshly cracked black pepper

2 teaspoons thyme

Some butchers may consider the jowl the 'cheek' but you want the cut that includes much of the neck. It's incredibly fatty and will weigh roughly 3-5 pounds uncooked. You can get it directly from a local pastured pig farm. You can wet cure it in

a brine in the fridge for a few day first. But this step isn't necessary.

Preheat the oven to 350°F (170°C)

Place the meat, garlic, onion, thyme, bay leaves, and peppercorns in a high-sided ovenproof pan with enough room for the jowls to move around and add water or stock. You don't have to completely immerse the jowls, but some recipes do call for covering it to one inch. A dutch oven won't require full immersion but other types of pots may. Cover the pan with a tight-fitting lid and braise for 3 1/2 to 4 hours, or until a paring knife slides through the meat easily.

Remove the jowls from the liquid, place cuts on plates. Press the jowls with an additional plate and a heavy pot on top and refrigerate overnight.

Season the jowls liberally on both sides with salt and plenty of cracked black pepper. Heat lard in a pan over high heat and sear the jowls for 5 minutes with the fatty side down. Pop the pan in the oven and roast for an additional 5 minutes, or until crispy, golden, and heated through.

It's an absolute divine fatty dish. Jowl is also used for a type of bacon, and some chefs prefer it since the fat has a smoother texture. Braising it really softens it up and brings out the flavor. Some of the steps aren't absolutely necessary (brining, chilling and pressing it add on a bit of time for preparation and can be done without).

Salmon Mousse

It makes about 4 servings, with 14.2g protein, 1.9g carbs and 40.55g fat per serving.

280g fresh salmon - protein 56g, carbs 2.8g, fat 39.2g

150g butter - protein 0.75g, carbs 0.75g, fat 123g

juice of one small lemon - carbs 4g

salt and black pepper to taste

Fry the salmon in a bit of butter. Transfer into a bowl and mash it with a fork. Add juice of one small lemon, 150g of butter, salt and pepper to taste. Blend well and refrigerate. When serving, portion with tablespoon.

Some parsley or cilantro might be nice in it too.

Stock

(via Kim Schuette, *The Healthy Economist*)

Fish Meat Stock

Ingredients

2 medium non-oily fish, such as sole or snapper

4 or more quarts of purified water

2 tablespoons raw apple cider vinegar

Assortment of vegetables, as desired

- 1-2 medium yellow onions
- 2-4 carrots
- 3-4 celery stalks

Bouquet garni (tie together using cooking twine)

- Fresh bay leaf
- Fresh thyme, rosemary, sage

Celtic Sea Salt, 1-2 teaspoons, to be added in the last 10 minutes of cooking

Parsley, to be added in the last 10 minutes of cooking

Instructions

Rinse fish in purified water. Remove meat from the fish and reserve for cooking. Place bones, fins, tails, skin and heads in the pot. Add remaining ingredients. Fill pot with purified water. Allow the pot and its contents to stand for 30 minutes, giving the raw apple cider vinegar time to draw minerals out of the bones. Bring to a boil. Reduce the heat to a simmer and cook for 1 to 1 ½ hours.

Add parsley and salt during the last 10 minutes of cooking. Remove the fish bones and other large parts. Strain the stock. Set aside remaining ingredients for preparing fish broth (fish bone stock).

Chicken, Pheasant or Turkey Meat Stock

Ingredients

1 whole chicken, pheasant or turkey

2-4 chicken, pheasant or turkey feet, optional

1-2 chicken, pheasant or turkey heads, optional
4 or more quarts of purified water
2 tablespoons raw apple cider vinegar
Assortment of vegetables, as desired

- 1-2 medium yellow onions
- 2-4 carrots
- 3-4 celery stalks

Bouquet garni (tie together using cooking twine)

- Fresh bay leaf
- Fresh thyme, rosemary, sage

Celtic sea salt, 1-2 teaspoons, to be added in the last 10 minutes of cooking

Parsley, to be added in the last 10 minutes of cooking

Instructions

Rinse chicken, feet and heads in purified water. Cut whole chicken in half down the middle lengthwise. Place these in the pot. Add remaining ingredients. Fill pot with purified water. Allow the pot and its contents to stand for 30 minutes, giving the raw apple cider vinegar time to draw minerals out of the bones. Bring to a boil. Reduce the heat to a simmer and cook for 1 ½ to 2 hours.

Add parsley and salt during the last 10 minutes of cooking. Remove the chicken and other large parts. Debone and reserve the meat for eating. It will be delicious. Strain the stock. Set aside remaining ingredients for preparing chicken bone broth (chicken bone stock).

Beef or Lamb Meat Stock

Ingredients

4-5 pounds of bone marrow and knuckle bones
3 pounds of meaty ribs or neck bones
1 calf's foot, if available, cut into pieces (optional)
4 or more quarts of purified water
2 teaspoons Celtic sea salt
4 ounces raw apple cider vinegar
Assortment of vegetables, as desired

- 1-2 medium yellow onions
- 2-4 carrots
- 3-4 celery stalks

1 teaspoon dried peppercorns, crushed
Bouquet garni (tie together using cooking twine)

- Fresh bay leaf
- Fresh thyme, rosemary, sage

Parsley, to be added in the last 10 minutes of cooking

Instructions

Place the bones, meat and joints into a large pot. You may roast the meaty bones in a pan in an oven at 350 degrees Fahrenheit. You may roast the meaty bones in a roasting pan until well browned, for extra flavor. Place these in the pot. Add remaining ingredients. Fill pot with purified water. Allow the pot and its contents to stand for 60 minutes, giving the raw apple cider vinegar time to draw minerals out of the bones. Bring to a boil. Reduce the heat to a simmer and cook

for 3 to 4 hours.

Add parsley during the last 10 minutes of cooking. Remove the beef and other large parts. Debone and reserve the meat for eating. It will be delicious. Strain the stock. Set aside remaining ingredients for preparing beef or lamb bone broth. Additional ingredients to consider for variety would be garlic, ginger and lemon rind, to name a few. Avoid adding starchy vegetables to your stock.

Bone Broth (Bone Stock) Recipes

To make bone stock (broth) you may follow the above recipes and after deboning, add additional purified water and continue cooking according to these recommendations:

- Fish Bone Broth - simmer for 4 hours.
- Chicken, Pheasant or Turkey Bone Broth - simmer for 12 to 24 hours.
- Beef or Lamb Bone Broth - simmer for 36 to 48 hours.

Elimination Diet

Food sensitivities are such that one man's food is another man's poison. When it comes to sensitivities, it is crucial to understand that for the most part, they come from the plant foods. By doing the ketogenic diet, you have removed most of the delayed food allergies sources. If you have an acute allergy to peanuts or fish, you know it by now.

It is important to learn to listen to our bodies. There are several lab tests that can measure delayed food allergies, but

none of them (despite what they say) are as reliable as to what your body says once you remove and then re-introduce a food. There are certain schools of thought that are very dependent on lab tests for everything, even though its values are never 100% reliable. Tests can come back normal, and you can still have a serious sensitivity to a food. I've heard stories from children who had celiac disease whose tests were normal or thyroid problems even though all tests were normal. Doctors might see a lab value and not see the patient, then say everything is okay even if the person sitting in front of them is completely falling apart and looks atrocious – i.e. people with low cholesterol levels often do. To the extent that we are completely out of touch with our bodies, we will be unable to see and understand and recognize the obvious signs that our bodies are signaling to us. We often crave the very food we are sensitive to. I'm sorry, but that is usually how it works. Supplements usually help us deal with withdrawal symptoms easier and heal our gut, check out the list of most useful supplements in this document for more information.

Food sensitivities are often present in those with leaky gut produced by toxicity, gluten, dairy and yeast overgrowth to name but a few. Depending on the individual, it might take months or longer to heal the gut in order to tolerate a food again. Do not be shy to invest on the necessary supplements to maximize healing potential. The ketogenic diet speeds up gut repair in lots of folks, so with further supplementation and ketoadaptation, this period of gut healing time might get shortened.

Having said that, and for reasons stated in the science background, there are foods that should never be re-

introduced even if you have a perfect health gut: grains (gluten) and dairy.

Casein in dairy products is so addictive that it is not worthwhile! Being free of food cravings is among the best things ever. Learn to listen to your body by recognizing food sensitivities. Very rarely, you can have foods with anti-nutrients such as the nightshade family, but it should never be a part of your regular diet.

The elimination diet works by eliminating suspected culprits for a minimum of 2 weeks or food sensitivity symptoms subside. After eliminating foods that you might be sensitive to, then you reintroduce just one eliminated food group at a time. Then you wait 3 days for a reaction. The effects become obvious either immediately or within 3 days. When you reintroduce, you need to eat quite a bit of the suspect food in order to get a good test. The following are signs and symptoms you can consider as a reaction: headache, digestive problems, arthritic or joint pains (unrelated to exercise), water retention, skin problems, brain fog or hyperactivity or anxiety, irritability or crankiness, restless legs, tremors, flu-like symptoms, itchiness, swelling of lymph nodes, ear problems, low-grade fever, or chronic inflammation anywhere in the body!

After 3 days, you can reintroduce the second food group, and so forth. If you do experience a negative reaction to any food group within 3 days of challenging it, discontinue that group for a few months (usually 6 months) and then repeat the three-day process to see if you can tolerate it again. You will only tolerate a food once your gut heals.

Among the foods you can test and that have been usual suspects to lots of folks are: eggs, sulfur containing foods (cabbage, cauliflower, broccoli, Brussels sprouts, onions or garlic), butter, spices, and nuts.

Lots of folks are sensitive to eggs when they have leaky gut. It is usually the egg whites which are the problem. The protein in the egg whites are very similar to the proteins in nuts. That is why those who are sensitive to eggs, are sensitive to nuts. Once their gut is repaired, they can eat eggs without problems. Notice that this is very individual to each person. One person could tolerate butter just fine, others not that much. In that case, ghee butter is usually well tolerated by everybody. Another vegetable that is tolerated by about everybody: green beans.

Once you know you can tolerate (or not) eggs and butter and other vegetables, it will be easier for you to notice a reaction if you slip or eat the occasional something. Then you know it has to be eliminated. But we agree that gluten and dairy are gone forever.

Once your body is detoxified from a certain unhealthy food, you get very "pure" and might be able to tell when a food is bad for you because your body will protest stronger in order to not go back to the unhealthy state. This is what is meant by being sensitive and it happens because your body gets used to being healthy and is able to set off an alarm when something that shouldn't be eaten is eaten. Other people, unfortunately, don't have symptoms they can notice, but they can have rather silent diseases such as heart disease or high blood pressure. In any case, it bears repeating, you have to stay away from the evil foods: ALL gluten sources including all

grains and its derivatives, dairy, alcohol, MSG, trans fats, anti-nutrient loaded legumes like soy.

The food industry and big agribusiness are only too happy to support that enslavement and the perpetuation of the notion that glucose is essential as a primary source of fuel and that frequent eating, snacking, and carbohydrate intake are somehow important to maintain healthy blood sugar levels. This even gets taught in medical schools. It is a lie.

Nature would never have intended for us to constantly live this way. It is a terribly impractical metabolic state to maintain, particularly if you view this from the primitive perspective of ongoing survival in a less certain world where food wasn't constantly available. Our primitive (particularly ice age) ancestors would never have made it this far if carbohydrates were essential to the diet or if glucose (an anaerobic source of rocketlike fuel) were necessary as a primary source of energy all of the time. Nature isn't that crazy or stupid.

Mind you, it is possible to live in a state of primary glucose dependence. People do it all the time. The idea that we are necessarily dependent on sugar as our primary source of fuel is true only conditionally, only if we've metabolically adapted ourselves to that unnatural dependence. Most people in this culture are metabolically adapted to that very state. And you can go on managing your blood sugar levels all day with frequent meals, snacking, and the eating of more complex carbohydrates (i.e., piles of twigs, "eleven servings a day") to keep the fire burning more steadily, but I personally have far better things to do than live my life tending to that woodstove. It isn't necessary or essential at all, and it will age

you faster (and cost you much more in grocery bills and health care costs). There is a far better, healthier, and more natural way to live and eat.

Dietary fat, in the absence of carbohydrates, is like putting a nice big log on the fire. Fat's flame burns at a regular, even rate, and is easily kept going. Protein, consumed in moderate quantities, is mainly diverted toward structural repair and maintenance. Only in excess does it convert to sugar.

Fat's even flame keeps the hormone leptin under control, keeps insulin quiet, and keeps our appetite satisfied. Blood sugar, when one learns to depend on this steadier source of fuel, becomes a trivial concern. You become free to live your life instead of being constantly preoccupied with where your next meal or snack is coming from. One can go many, many hours on this longer-burning type of fuel without experiencing any discomfort or cravings at all. You may eventually get hungry if you really go a long time without eating, which is normal, but you are far less likely to experience irritability, dizziness, brain fog, cravings, fatigue, jitteriness, or mood swings because of it.

This is the way it's supposed to be! –Nora Gedgaudas, *Primal Body, Primal Mind*.

Favorite Supplements and Troubleshooting Protocols

It is preferable that you start the diet with the basic detox cocktail described below before buying tons of supplementation that are for problems that are dealt with by removing toxic foods and lowering your carbohydrate intake. As you have seen from our testimonials, the ketogenic diet

has proven to be the best thing we've ever tried so far. Nevertheless, we include here several protocols since they have proven invaluable in a number of conditions throughout the years.

Typically we tried a few consecutively before trying a different protocol according to our most prevalent needs and symptoms at a specific time. Keep in mind that our research group in the forum includes people of all ethnicities spread out throughout the entire world and who embarked on this health plan due to all kinds of health problems and incapacitating diseases.

Oftentimes, our bodies need time AND help to heal. If you are on a low budget, try to invest in at least the Basic Detox Cocktail and make the ketogenic diet your goal for healing. This last one has been the one thing that has made the whole difference. Most of us dropped all our supplements when doing the ketogenic diet. In addition to that, there are several chemical pathways in mitochondria energetics, if you supply for one pathway, the other ones get compromised. There are supplements to support overall mitochondrial function, but it is a rather expensive solution to what can be dealt with easily by just going into ketosis.

It bears repeating again, the diet will supply for most of the nutrients most people are lacking nowadays in a high carb diet in a way that can be used by the body. The main supplements you might need are the Basic Detox Cocktail to start with dietary changes and the Easy Digestion protocols to help you start digesting more meats and fats that your body was made to digest, but is slow to do due to a lifetime in a carb diet full of anti-nutrients. In addition to that, sugar highs

and lows stimulates your body into “fight or flight” mode which tampers with your digestive capabilities. Having said that, read these protocols to see if there is something you specifically need to help you heal and transition better into your transformational ketogenic pathway.

Basic Detox Cocktail

Vitamin C

Vitamin C or ascorbic acid, has been the one thing that has made a difference for detox purposes, especially when you are still eating carbs which increases your needs for vitamin C. It also helps you with withdrawal symptoms and keeps your bowel movements going. It protects your DNA from free radical damage, which is why workers with severe radiation exposure at the Fukushima nuclear plant had no significant change in both free DNA and overall cancer risk when supplemented with vitamin C.

Vitamin C also helps manufacture collagen, vital for the health of all our tissues including repair of blood vessels, teeth, joints and bones. It also helps to normalize blood pressure, and stave off degenerative diseases and premature aging, and it is vital so our immune systems can fight viruses, bacteria and other microbes. Vitamin C is important in the synthesis of brain chemicals such as our happy mood-serotonin.

Nobel Prize winner, Linus Pauling and Dr. Irwin Stone have helped pioneer the concept of orthomolecular medicine which uses megadose vitamin therapy - vitamin C in doses higher than those required for normal cellular functions. When taken

in very high doses (10 or 100 grams or more per day, depending upon the person's requirements and illness) vitamin C fights off serious illness. For instance, when the body is challenged by cancer, colds, toxicity or diseases, we are overwhelmed with free radical production. This is when our requirements of vitamin C increases. Mainstream medicine continues to be adamant against vitamin C, despite the miraculous effects it has had on people whose prognosis was fatal. Vitamin C or ascorbic acid, is something you want to have in your medical cabinet, as it can save your life as it has some of ours.

As a powerful water-soluble anti-oxidant that we are not capable to synthesize within our bodies, you can take 1 heaping teaspoon (4 grams) per day, when you first start detoxifying. But please note that your needs for vitamin C drop drastically in the ketogenic diet. Don't be surprised if you only tolerate 500mg at a time. If it has a laxative effect, then it was more than your body could absorb. So if you are in the ketogenic diet, you can start with 500mg several times a day.

During stressful times (either emotional or from illness) more doses are required, especially when you are eating carbs. Vitamin C and sugar use the same port entry to access our cells, and with little to no sugar to compete, a higher percentage of vitamin C gets into the cells making our requirements shrink. In addition to that, and as explained by David Jockers, DC, when white blood cells encounter pathogenic bacteria and viruses they must ingest or phagocytize these organisms in order to neutralize them. The phagocytic index measures how effective a particular white blood cell is at destroying viruses, bacteria & cancer cells.

Elevated blood sugar impairs this phagocytic index. In fact, a blood sugar of 120 reduces the phagocytic index by 75% (Jockers, 2013).

But as in the ketogenic diet sugar intake is restricted, our requirements of vitamin C have gone down to the point where most of us had to minimize or even eliminate it in the ketogenic diet. Most animals make their own vitamin C, so it is possible to get enough vitamin C in the diet without any plant foods by eating the proper parts of the animal: organs.

Keep in mind that vitamin C dosage should be built up gradually, and the same is also true for lowering the dose of vitamin C, in order for our bodies to adjust to the change. Going slowly also prevents Herxheimer reactions which come when you first start detoxifying. A Herxheimer reaction is an excretion of toxins from dying microbes (i.e. yeast overgrowth), sometimes called a 'die off' reaction.

Pregnant women should not exceed 5 grams of vitamin C a day. Large doses can cause diarrhea since excess vitamin C than your body requires doesn't get absorbed. In time of illness, you can gradually increase vitamin C by 2 to 4 grams each hour until your tummy starts to gurgle or you have a loose stool. This is what is known as titrating doses of vitamin C.

The most inexpensive vitamin C is ascorbic acid which you can get in bulk size, although other high quality forms and alkaline versions are available. If ascorbic acid gives you acidity, mix with some stevia or a little bit of sodium bicarbonate to take the bite off.

For those concerned that vitamin C will increase their blood sugar levels, well, it seems that it doesn't even at doses of 2 grams every 3 hours.

Homemade Liposomal Vitamin C

Nobel Prize winner, Linus Pauling and Dr. Irwin Stone have helped pioneer the concept of orthomolecular medicine which uses megadose vitamin therapy - vitamin C in doses higher than those required for normal cellular functions. When taken in very high doses (10 or 100 grams or more per day, depending upon the person's requirements and illness) vitamin C fights off serious illness. For instance, when the body is challenged by cancer, colds, toxicity or diseases, we are overwhelmed with free radical production. This is when our requirements of vitamin C increases.

Typically, megadoses of vitamin C are given through an IV. Unfortunately, with so many medical regulations and drug protocols, vitamin C's healing effects has remained in the back stage in a system ruled by Big Pharma. Despite this, it continues to help many around the world and it is starting to regain increasing popularity in conditions where no drug has made such a difference as vitamin C does.

Nowadays there are options that can substitute the intravenous (IV) vitamin C therapy in megadoses in the form of liposomal vitamin C which can be taken orally and made at home. If you are interested in getting the benefits of IV vitamin C in megadoses from the comfort of your home, don't miss this relevant information!

Liposomal Vitamin C

A liposome is like a bag that carries a substance into your body and its cells. It is incredibly effective at this task since it is made out of fat. As it happens, it is the same type of fat that make up cell membranes, making the job of crossing this barrier much easier. Plus, liposomes are super tiny and in that way, they can go through every teensy crack of our cell barriers.

In order to achieve an effective megadose vitamin C dose – for instance, to kill cancer cells – you need to achieve a vitamin C blood level of around 250-350 mg/dl. An average person will typically have around 1 mg/dl on a fairly decent diet. After a 25 to 50 grams IV vitamin C therapy delivered in about a 90-minute period, the blood level is in the 200 to 300 mg/dl range.

Reports say that 6 g of oral liposomally-carried vitamin C is equal in delivering vitamin C inside cells, where it does its work, to 50 grams of intravenous vitamin C.

To make Liposomal Vitamin C, you need an ultrasonic jewelry cleaner. Just type on amazon.com or other store of your convenience and see which size is the most practical one for you.

Then you'll need sunflower lecithin or non-GMO hexane free soy lecithin, and the vitamin C, preferably as sodium ascorbate.

Recipe

3 level tablespoons of lecithin.

1 level tablespoon of sodium ascorbate.

Dissolve the lecithin in 1 cup (240cc) of warm or cold water, preferably distilled. Let it soak for a couple of hours or so. It doesn't have to clump, so using warm water is preferable (not hot!).

Dissolve the sodium ascorbate in 1/2 cup warm water, preferably distilled.

Pour both solutions together into the ultrasonic cleaner and mix for around 20 to 25 minutes.

A loading dose, for several months, of liposomal vitamin C is likely 2,000 mg three times a day, maintenance , 1,000 mg twice daily, increasing doses and amounts when needed.

This recipe provides 12 grams (12000 mg) of Vitamin C Ascorbate at about 70% - 90% liposomal encapsulation efficiency. It will keep at room temperature for about 3 to 4 days and refrigerated, it will keep much longer.

Recall that 6 grams of this stuff is the equivalent of 50 grams IV vitamin C. So you can take half the solution throughout the day for a day or two in case of illness. Wean off gradually throughout the days though, so no artificial drastic lack is perceived by the body.

I've used 3 tablespoons of sodium ascorbate with good absorption results as well. Three tablespoons instead of one tablespoon as indicated in the above recipe will yield around 16 grams of vitamin C per cup. The absorption of the liposomal variety is about 5 times the absorption of vitamin C straight, so that is approximately 80 effective grams (IV therapy). That is a very high dose indeed! You will have to take that one cup throughout the day though, I doubt you'll tolerate drinking in one seat without having diarrhea.

Read about Vitamin C's Historical and Miraculous Record for a map on how to do IV vitamin C in megadoses depending on the situation. Forum members are familiarized with the research of a possible black death in the near future, such as the current African outbreak but on a large scale (see New Light on the Black Death: The Viral and Cosmic Connection). In fact, the black death was caused by an ebola-like virus (see: Black Death found to be Ebola-like virus) and we are already seeing signs of mutations of the current ebola strain to something akin to an ebola-like one. So for all we know, it is already brewing. So the IV vitamin C is something you might want to keep in mind.

A note in iron overload

Those with iron overload (ask your physician to test for ferritin, transferrin, TIBC and iron to determine if that is the case) should keep in mind that vitamin C increases the absorption of iron into the body, especially in the heart where it can cause heart failure, palpitations and others.

Ferritin levels should be ideally less than 80 and transferrin saturation should be less than 40%. If you are above those levels, you might want to donate some blood or refer to the Iron Disorders Institute.

The Iron Elephant – What you should know about the dangers of excess body iron (Vida Publishing Inc.) – is a book written by journalist Roberta Crawford which was extensively discussed in the cassiopaea forum. As it happens, one of the forum members was suffering from extreme fatigue and joint problems related to an autoimmune condition that was not responding neither to vitamin C or dietary measures. In fact,

she was getting progressively worse. A blood test analysis revealed high ferritin levels which rang a bell of high iron stores. Furthermore, there was a history of hemochromatosis within her family. This prompted much research and learning which was carried throughout the thread [Hemochromatosis and Autoimmune Conditions](#).

Slowly but surely, the picture of iron overload toxicity began to emerge and the final pieces of the puzzle fell into place. Several people who were having trouble recovering their health on a diet that was basically bulletproof were found to have iron overload.

The healing diet which is a gluten and dairy free ketogenic diet with moderate intake of protein and plenty of animal fats does not work as it should be as long as there is excess iron in the body.

Iron overload may affect any organ in the body and may include symptoms such as fatigue, depression, arthritis, irregular heart beat, high blood sugar and/or diabetes, shortness of breath, swelling of the abdomen and legs, jaundice, loss of sexual drive, premature menopause, loss of body hair, shriveling of the testicles, hypothyroidism, and redness of the palms of the hands. A suntan that does not fade in winter may or may not be present.

The excess iron oxidizes in your body and can literally rust your organs leading to diseases such as cancer, thrombosis, cirrhosis, arthritis and so forth.

The Iron Elephant describes the bitter journey of many people who suffered needlessly from iron's toxicity effects. It is a

warning for the rest of us who might be unaware of a silent iron overload. Let's have a closer look to the key concepts and warnings.

Iron 101

Only about 10% of the iron in food is available for absorption. Once you absorb iron, it has no exit from the body except by blood loss. Iron is not excreted. Once allowed into the body, it takes up stubborn residence.

The red blood cell is born in the bone marrow and lives for about one 120 days. When the red cell breaks down, it releases iron, to be recycled into new cells. Only about 1 mg a day is lost in finger nails, dead skin cells and other detritus, and this is the loss that needs to be made up from food.

Many people are secretly, unknowingly storing too much iron every day because of an iron metabolism imbalance. They are unable to keep from absorbing unneeded iron. Iron is so abundant and ubiquitous that **you just can't simply formulate an iron-free diet.**

Celtic Curse

As many as 32 million Americans (one in eight people of Northern European ancestry) may be carriers of genetic hemochromatosis also known as iron overload disease or iron storage disease. Hereditary hemochromatosis (HH) has been dubbed the "Celtic Curse" and it is the most common genetic disease in the USA. Researchers believe that HH originated at least 40,000 years ago in the area we now know as Ireland with a single ancestor whose genes mutated to over-absorb iron from what was then a very poor iron diet and famine conditions. Nowadays, descendants of these ancestors absorb too much iron until it reaches toxic levels.

Geoffrey Block, MD, an hepatologist, states,

“the appearance of the HFE gene mutation [for HH] occurred somewhere from 40,000-60,000 years ago. Human DNA goes back to somewhere between 120,000-200,000 years ago. The ethnogenetic source for the C282Y (HFE) mutation arose in the Celtic ‘empire’. Most people think that Celtic means Ireland, however, the Celts of 40-60,000 years ago covered Ireland to just west of Moscow, north to the upper reaches of Scandinavia, south into Spain and Portugal, and south east across the Italian peninsula and north of Greece and Turkey/Iraq.”

But any ethnic group can also have the mutations even though it is more infrequent (i.e. Asian or Jewish). In fact, the single gene carrier estimate for the abnormality runs into the 650 million people world-wide, more than half a billion people. Needless to say, that a heck of a lot of people. The tragic thing that to this day in 2013, many people are having a hard time to get their doctors to order iron testing, let alone interpret them correctly once they are done. Excess iron has no way to leave the body but by bleeding. When the body is storing excess iron, then it must be unloaded in order to avoid injury. It is already too late when the damage is done. When iron is the underlying factor, no amount of testing, no method of treatment will do a person any lasting good unless the iron is removed. Excessive iron may be the cause of arthritis, hypothyroidism, diabetes, cirrhosis, cardiomyopathy, chronic fatigue and much more.

Each person’s unique metabolism will result in varying degrees of damage due to iron overload.

Untreated Iron Overload Can Give You Cancer

Excess iron storage in the liver is carcinogenic for primary liver cancer. If cirrhosis had not developed due to iron burden, and treatment is adequate, liver cancer rarely develops. Early detection is essential.

Among the most important concepts reported in *The Iron Elephant* was the one where it was speculated that, contrary to all accepted belief, in Hodgkin's disease or leprosy, the white blood cells (leucocytes) are not diminished, but are simply trapped in areas other than where they belong and that iron proved to be the trapping agent.

Iron depresses the immune system. Tumors require iron for survival. Due to a tumor's iron sequestration phenomenon, when there is a finding of iron deficiency, one must search for cancer. Iron might be sequestered by the tumor itself and therefore not available for blood formation.

Dry weight of iron in breast cancers are threefold greater than that of normal breast tissue. Nearly 90% of those with metastasizing breast cancer have elevated serum ferritin – marker of iron storage.

In both infection and malignancy iron is shifted to storage tissues. The severity of cancer is related to displacement of iron. Levels of iron go back to normal if a person recovers. This is why it is very important to screen for iron markers. If they are low, it is essential to investigate for cancer or infection.

Inhalation can be another form of iron entry into the body, raising the risk of cancer. Workers in iron mines develop

bronchial cancer five to ten times the rate of the general population. Lung cancer can be nearly 8 times higher than expected in patients with hemochromatosis. Other cancers recorded are pancreas, stomach, rectum, gallbladder, bladder, prostate, colon and brain among others.

People with iron overload provide a favorable environment for cancer growth.

Untreated Iron Overload Can Give You Arthritis

Sore or stiff fingers with affection of the index and middle finger is typical of iron overload. However it can vary depending on overuse and straining. Do test for iron load if it hurts when someone shakes your hand and the pain lingers. Other joints that may get affected include knees, hips, jaw, shoulder. The most frequently affected are the hands and wrists and weight-bearing joints such as knees. Joint pain is not always present.

Dupuytren's contracture – which is a proliferative connective tissue disorder which involves the palmar fascia of the hand – is sometimes seen. In severe cases, the hand takes the form of a claw. When something similar happens in other parts of the body – cheek, stomach, arm – it is called panniculitis. The tissues seem to fasten to the underlying connective tissue leaving an impression, like a dimple.

Along with arthritis, there might be acute synovitis with subsequent inflammation of the tendons. But the most common feature of iron overload is chondrocalcinosis also known as pseudo-gout.

Arthritis is one of the most difficult symptoms to improve. Furthermore, iron promotes the growth of microorganisms,

which can further contribute to the inflammation associated with arthritis.

Untreated Iron Overload Can Give You Heart Disease

Traces of iron greatly increase rhythm irregularities following heart attacks. Furthermore, chelating iron greatly decreases rhythm irregularities following heart attacks. Even iron levels long regarded as within range, may have deleterious effects in the heart. As we will see, within range may already be too toxic. Normal iron load levels have been set too high and should be redefined in view of iron's toxicity.

Abnormalities such as atrial ectopic heart beats, atrial fibrillation, incomplete right bundle branch (long regarded as a normal variation in the electrocardiogram), low voltage and enlarged heart is seen more often in those with iron overload. Heart failure incidence increases in iron storage diseases.

Supplementing with Vitamin C might be dangerous. Vitamin C binds with iron and moves it around where it might end in the heart muscle. Vitamin C taken with iron increases absorption of the iron.

Iron in the heart is a poison related with arrhythmias and heart damage.

Untreated Iron Overload Can Give You Cirrhosis

The primary target organ for iron is usually the liver, which becomes overloaded and damaged. The liver can either become enlarged or atrophied. Liver enzymes that never get normalized is indicative of iron overload.

Whenever cirrhosis is suspected, iron should be checked. Cirrhosis is a consequence of chronic liver disease where

replacement of liver tissue by fibrosis, scar tissue and regenerative nodules leads to loss of liver function. Liver dysfunction leads to all kinds of problems including mental confusion. When you have a sluggish liver, you have more problems in metabolizing even healthy foods such as protein and fat.

Untreated Iron Overload Can Give You Diabetes

Diabetes that is difficult to manage and/or that appears at an earlier age than expected is indicative of iron overload. Severity depends upon the amount of iron load and whether diabetes is discovered early or late in the course of iron accumulation. Improvement might be expected if iron is unloaded promptly.

Blood sugar levels are very difficult to regulate when the underlying cause of pancreas damage is excess iron.

Untreated Iron Overload Can Impair Your Immune System

The body has mechanisms to withhold iron from invading microorganisms, but when there is iron overload, this ability is seriously impaired. Everyone with depressed immune function should check their iron load levels. People are much more susceptible to infections at times of high iron elevation. Low iron body stores reduce mortality due to certain infectious diseases.

One thing that is easily forgotten is that many anemias are in themselves iron loading anemias. For instance, thalassemia and sideroblastic anemia among others. The worst thing in this case is to reach out for iron supplementation. That will do nothing to correct the underlying problems and will only worsen things. Patients with rheumatoid arthritis may have anemia as a body mechanism to withhold the iron in order to defend the body against arthritis.

The only anemia that improves after iron supplementation is iron deficiency anemia, and you can't diagnose it based on hemoglobin levels alone. Iron stores must be checked.

Untreated Iron Overload Can Make You Very Tired

Hypothyroidism can be a complication of iron overload and people with chronic fatigue syndrome should be screened for iron load levels.

It is ironic that excess iron may be the underlying cause of pallor, weight loss and fatigue. In fact, up to 25% of those diagnosed with hemochromatosis might be anemic.

Laboratory Screening

Ferritin is an ubiquitous intracellular protein that stores iron and releases it in a controlled fashion. The amount of ferritin stored reflects the amount of iron stored.

There is a specific iron-binding protein called transferrin which holds and controls iron transit. Transferrin binds to iron and delivers it to wherever it is needed.

The concentration of iron per se in blood plasma is about one hundred micrograms per one deciliter. Serum iron (SI) normal values goes from 50 to 160 depending on the lab. Serum iron above 150 must be followed up with transferrin saturation and ferritin levels.

The blood plasma contains enough transferrin to combine with about 300 micrograms of iron per deciliter. This is called Total Iron Binding Capacity (TIBC). When the concentration of iron is one hundred micrograms, the transferrin is about one-third saturation.

You obtain the percentage of transferrin saturation by dividing serum iron by TIBC and multiplying by 100 percent. It's the proportion of these two numbers that is significant. You're looking for a normal range of 25-35%.

If you have elevated transferrin iron saturation percentage greater than 45% with an accompanying elevated serum ferritin, iron overload is present and bloodletting/phlebotomy should be commenced. Blood-work should be done in fasting and after drinking enough water for hydration.

Iron levels fluctuate from day to day and from hour to hour. When transferrin saturation persists over 45% and ferritin is above 150, then you have iron overload.

It is important to keep in mind that people who might be gene carriers or relatives of someone diagnosed with hemochromatosis, may test "normal" and later proved to have a considerable iron load at a later examination. There is a variable rate of iron accumulation within families.

In the absence of symptoms and with blood tests that show normal levels, the relatives nevertheless can sometimes be diagnosed after persistent checking. Liver tests had confirmed a diagnosis, even after blood tests were normal.

The doctors on the Board of Directors of The American Hemochromatosis Society state that transferrin saturation percentage greater than 40% and serum ferritin greater than 150ng/mL could indicate clinical iron overload/iron storage

in the body and treatment with phlebotomy (bloodletting) should be considered regardless of DNA test results. Some researchers suggest that ferritin should fall between 20-80 ng/ml, with an ideal range being 40-60 ng/ml. If you are above those levels, but less than 150, consider donating at the blood bank. You can only benefit and at the same time, your blood will potentially go to someone who needs it more.

[Our] daughter with the serious problems who has been prescribed regular phlebotomies has made enormous improvements over the past few weeks. She decants about a pint every two weeks. Obviously, if someone was really HIGH they would need to get it down as quickly as possible, but this schedule seems to work after she did two in rapid succession.

It really is amazing to see how her energy/mood has improved and her inflammation has quieted down with just getting rid of some blood. -Laura

Those who can't donate blood and/or are having problems getting a phlebotomy prescription, opt for decanting iron through oral EDTA chelation and/or activated charcoal.

Just an update for the data pool - After giving two pints of blood and drinking activated charcoal on average of every few days for the past 2 months (some days I'd drink it some days I would not), my Ferritin level dropped to 55 from 197, so I think the activated charcoal really played a part since giving a pint of blood should only drop it about 50 points from what I understand, so if the drop were just from the pints of blood,

the reading should have been around 97. Of course there could be other factors at play of which I am unaware. Serum iron level dropped to 70, though that doesn't tell us much.

Unfortunately, this doctor I had didn't do either of the binding capacity tests so I have no idea of the saturation, logically, it should have improved (I think). So, I'm going to continue to give blood as often as the red cross allows me to and I think that should manage it. All my other blood tests were normal and she did an abdominal ultrasound to make sure I didn't have liver enlargement or anything and that all looked normal as well. I did have one liver hemangioma, a benign mass but she said that's no big deal.

So, if anyone can't do EDTA or doesn't want to do EDTA, activated charcoal certainly appears to be an alternative. -A.

Magnesium

Magnesium has a relaxing, anti-oxidant and anti-inflammatory effect on our organism. It is critical for metabolic processes, cell growth and reproduction and is involved in hundreds of enzyme processes affecting every aspect of life. It is not only essential for maintaining good health, but also for detoxification and the treatment of numerous diseases including: anxiety and panic attacks, asthma, blood clots, bowel disease, cystitis, depression, detoxification, diabetes, fatigue, heart disease, hypertension, hypoglycemia, insomnia, kidney disease, migraine, musculoskeletal conditions, nerve problems, PMS, osteoporosis, Raynaud's syndrome, alcohol abstinence, etc.

People who crave chocolate are usually deficient in magnesium.

Just as with vitamin C, excess doses will cause loose stools or diarrhea since it will not get absorbed. To benefit from magnesium supplementation, take chelated magnesium (bound to organic amino acids) for maximum absorption: magnesium citrate, malate, orotate, taurate, or magnesium glycinate. You can follow label instructions or take two capsules before bed time. If magnesium oxide or chloride is your only choice available that will do (research shows that the minimal doses absorbed are beneficial), but just take enough of it that it will not cause laxative effects.

Magnesium can be taken with or without meals but it's best to take it between meals as it requires stomach acid to be absorbed. Digestion after a full meal may make the stomach acid less readily available for mineral absorption. Magnesium is an alkaline mineral which may act as an antacid, neutralizing the stomach acid needed for digestion.

For detox purposes 200mg four times per day is a better dose. If this dose has a laxative effect, cut down by 200mg until this effect stops. Your needs of magnesium vary according to stress. The more stressed or inflamed you are, the more magnesium you will need.

Magnesium chloride can be used to make magnesium oil which can be readily absorbed through the skin when sprayed or rubbed on the body. It increases magnesium bioavailability in the body and provides the ideal solution for those individuals who experience loose stools when they try to take

enough oral magnesium to meet their needs. Some researchers have found that using magnesium oil at a concentration of 25% magnesium chloride restores a magnesium deficiency in a matter of weeks that would otherwise require months or a year to restore with oral supplementation. If you pump about 6 sprays of magnesium oil for each leg and arm, you are applying about 400mg of magnesium (a 25-35% magnesium chloride solution delivers between 13 and 18 mg per pump). Using a few sprays under your arms will also function as a highly effective deodorant. If any redness or stinging feelings result, use a more diluted magnesium oil.

Requirements for a very ill person are much higher than for a healthy person. In general, if you take a full body magnesium bath, two ounces of magnesium chloride could be used. Some people prefer a very concentrated magnesium chloride bath with as many as eight ounces of magnesium at a time. Foot baths use much less water, so two ounces will yield a very concentrated intake. Soak the body or just the feet in the warm solution for 20-30 minutes. It is best to do it daily during the first week, starting at lower concentrations and working towards higher levels. Then continue at 2-3 times a week for 6-8 weeks or longer.

Magnesium sulfate, also known as Epsom salts, is another excellent option even though it is rapidly excreted from the kidneys and more difficult to assimilate. The effects from Epsom salt baths do not last as long, so you will need more magnesium sulfate than magnesium chloride in a bath to get similar results.

For the average individual, high doses of magnesium have no side effects except loose stools. However magnesium therapy

is contraindicated in individuals with kidney failure, myasthenia gravis, excessive and pathological slow heart rate, and mechanical bowel obstruction. In such cases, it should at the very least be given under the supervision of a health care provider.

People often find relief from their symptoms when they take magnesium, so they immediately tell friends and relatives.

This word-of-mouth spread of information about this miraculous mineral is really making a difference in the epidemic of magnesium deficiency, and I hope that you will benefit as well.

Omega 3s

Omega-3s prevents irregular heartbeat, reduce arterial plaque, decrease blood clotting, lower blood pressure, and minimize inflammation among all the other benefits we reviewed in the first document. In order to protect its vulnerability, it should be taken with animal fats from the diet.

Take 2 to 4 capsules of fish oil.

N-Acetyl-Cysteine

The anti-oxidant N-acetyl cysteine (NAC), as a source of our most powerful anti-oxidant and detoxifier - glutathione - and as a source of healing sulfur, is an excellent supplement to take. It has been used to detoxify heavy metals, as an anti-viral and anti-bacterial, to treat depression, schizophrenia, addictions, bipolar disorder, and other mood problems. It helps enormously to heal a leaky gut and it is a powerful anti-inflammatory.

NAC is most commonly known as a mucous dissolver and it is an excellent respiratory supporter for those with asthma, bronchitis or any respiratory problem. It is used in hospitals as an antidote of Tylenol (acetaminophen) liver toxicity.

Around 500mg twice a day is a good dose. We often take NAC in higher doses along with titrating doses of vitamin C in order to stave off any infection. Both supplements are also essential in slowing the spread of cancer.

Constipation or Diarrhea Protocol

When you start taking carbs out of your diet, you can get constipated if you don't have enough fats in your meals. You can take titrating doses of vitamin C or magnesium to deal with constipation problems. You can also try a saline water enema (one and a half teaspoon in 1 liter of filtered water) the first week it happens. But before trying these measures, try having around 5 grams of sea salt (or other natural forms) in your bone broth or directly in filtered water, this resolves constipation issues. You lose a lot of water and minerals when you first take out carbs from your diet. It is the carbs that cause saline and water retention, which is why blood pressure usually goes down when you take out carbs from the diet. So much for our high blood pressure epidemic!

I have IBS and following this diet of low carbohydrates helped me enormously. Sometimes I still have small crisis and my belly is, when I have a crisis, a little big. At the beginning of the diet I was constipated and then everything is normal, now. What helped me a lot is to stop eating grains and wheat. This diet, here, is fantastic for me. Everyone is a

world, I know, but this diet saved my condition that was really terrible! -Loreta

Same thing applies for dizziness problems or low blood pressure symptoms, take salted water or salted bone broth. Always salt your food, don't deprive yourself! Make sure you drink enough water in order to have pale yellow urine.

But remember, by having enough fats in your diet, you avoid constipation problems. Then, by the time you are keto-adapted your pooh will be like the one of a child. We have learned the Fiber Menace lesson the hard way! Most of us thought that it was the meat and other animal foods to be blamed; all the while it was the veggies creating a vicious cycle. By the time your gut habits adapt to high fat, you'll notice too the great difference. Keep also in mind that once you are adapted to a high fat diet, pooh depositions are minimal since pretty much everything is used. They may happen every 3 days and there would be no discomfort. If you have diarrhea, you might need to cut down on the minerals or fats. Remember, excess doesn't get absorbed, causing diarrhea.

Restoring Digestion

If you are having trouble switching to a high fat diet, this protocol is for you.

Betaine Hydrochloric Acid and Digestive Enzymes, follow label instructions. You might also want to try first apple cider vinegar in your foods to help ease the transition towards a high fat diet digestion. Eventually, you will be able to produce enough digestive acid and enzymes of your own. This is the

reason why you introduce one fatty meal every two weeks. Typically, by the time you are ketoadapted, no supplements are required.

Ditch the proton pump inhibitors anti-acids such as omeprazol (Prisolec). When I used to be a medical student, no doctors were allowed to prescribe it since obviously stomach acidity is essential to digest food in order to make its nutrition available. Only under very special occasions doctors were allowed to have a prescription which was only issued by a gastroenterologist specialist in a hospital setting. Nowadays, these drugs are given out like candy to everybody since the major culprits of acid reflux are grain-based foods (the daily bread, muffin, cracker, ETC!) and anti-nutrients in foods such as soy. This happens to be what everybody eats.

These acid blockers reduce calcium absorption, increasing fractures. They also increase the risk of lung infections, since an acid-free stomach kills fewer microbes. The elderly are at a special risk since they already have an aging-stomach which produces less or no acid. It also increases risk of dementia (no nutrients digested, no brain). People often report gas problems with these drugs. Well, of course, if you are impairing acid to digest food, it is going to ferment somewhere.

Lack of proper hydrochloric acid secretion leads to acid reflux, skin disorders, anemia, osteoporosis, rheumatoid arthritis, vitiligo, asthma, food allergies and much more.

The lack of acid in your stomach fails to signal the stomach's valve to close properly. Digestive problems and stomach pain are eased when acid supplements such as hydrochloric acid

(HCl) are given. Do not take betaine hydrochloric acid supplementation if you have a stomach ulcer or debilitating gastritis and acid reflux though. The gut lining must be first healed. In this case you can take deglycyrrhizinated (DGL) licorice supplementation which soothes the pain instantly. It works wonders!

If you had your gallbladder removed, you will need digestive enzymes and ox bile (follow label instructions), in order to be able to digest and absorb the fat. Keep in mind that gallbladder problems stem from a lack of enough animal food sources in the diet. If the gall bladder doesn't pump out bile to digest these foods, it gets stagnated and stones are formed. This is a big problem because mainstream doctors will remove the gallbladder which is badly needed to digest fats and fat soluble vitamins like vitamins A,D,E,K. In the long run, people end up with deficits of these vital nutrients in their bodies, leading to all the common diseases. If your gallbladder was already removed, take digestive enzymes and ox bile with your foods.

Sluggish Liver Protocol

What is a sluggish liver? Typically, a person who has dietary fat intolerance, foul smelling gas, or a swollen belly benefits from the sluggish liver protocol. It aids a higher fat metabolism, since ketone bodies are produced by mitochondria in your liver.

You can think of a sluggish liver as a subclinical liver dysfunction brought on by a lifetime of eating the Standard American Diet (SAD!) and/or too much toxicity. The liver is the detoxification organ par excellence and the body's ability

to eliminate toxins largely determines its health. The liver also plays an essential role in hormonal balance, the immune system, digestion, protein synthesis, cellular nutrition and many other functions. This explains why a person with a sluggish liver can have a variety of symptoms: Irregular or heavy menstruations, nausea, dietary fat intolerance, foul smelling gas, swollen belly, PMS symptoms (including breast soreness and sensitivity, depression, hypoglycemia and irritability), mood instability and irrational anger and temper flare-ups ("what am I, chopped liver?!"), nausea, dietary fat intolerance, loss of appetite, constipation or diarrhea, aching joints and muscles, sore feet, psoriasis and other skin problems, hair loss, and slow wound-healing, headaches, insomnia, difficulty awakening, poor memory, and difficulty concentrating, strange or opposite reactions to drugs, multiple chemical sensitivities and multiple allergies, asthma, hives and eczema, chronic fatigue syndrome, depression.

If you are to transition more smoothly into ketosis, your liver needs to be running smoothly so it can devote its energy into ketoadaptation. In addition to helping your liver transition into ketosis more smoothly, the liver will benefit enormously and function as it should, helping to promote good levels of thyroid and sexual hormones that your body can actually use. The thyroid hormone T4 is converted into the active thyroid hormone T3 in the gut and liver. So helping the latter two goes a long way in healing your thyroid function.

If you have a sluggish liver, this protocol is for you.

- Milk thistle 140mg (with 80% silymarin) three times a day
- Alpha lipoic acid 100mg twice per day
- Vitamin E 800 IU per day

- Vitamin C 4 g/day
- Magnesium 400-1200 mg/ up to bowel tolerance (cut out one dose until diarrhea disappears)
- Digestive enzymes and ox bile with meals

Milk thistle is a flowering plant of the daisy family which contains the silymarin complex, known to protect the liver in a direct and indirect way. It protects the liver from free-radical damage. It prevents certain toxins from entering liver cells and even neutralizes toxins that have already penetrated the liver. It is able to regenerate liver cells that have been injured, prevent fibrosis and prevent fatty liver.

Milk thistle treatment can be effective even several hours after initial poisoning occurs. It can also prevent the damage caused by certain drugs such as acetaminophen, antidepressants, antipsychotic, cholesterol-lowering and anticonvulsive drugs.

Silymarin can raise glutathione levels in liver cells by as much as 50%. Glutathione is the most important liver-protecting antioxidant, becoming depleted if we are exposed to high levels of toxins on a daily basis. Silymarin also increases the activity of another antioxidant known as superoxide dismutase (SOD).

Other than the liver, milk thistle has been shown to be protective for our kidneys and brains against toxins, free-radical damage and inflammation.

There are no known contraindications or interactions with other drugs for milk thistle and the only occasional side effect

is a mild laxative effect. No restrictions during pregnancy and lactation are known.

Alpha lipoic acid is another crucial supplement which protects the liver. It is water and fat soluble and it is also capable of crossing the blood-brain barrier. This means that it is capable of reaching and preventing damage from the evil toxins that are lodged in our fatty tissues, our brains, and every single organ for that matter. This is an important factor because toxins can affect our brain in a significant way. ALA also repairs DNA and prevents DNA and RNA from the damaging processes that result from certain cell-signaling chain reactions. It is a good heavy metal chelator, it protects the heart and brain from cell death, stimulates the regeneration of liver tissue and is rapidly absorbed high up into the digestive tract. ALA recycles other antioxidants such as vitamin C, vitamin E, and glutathione which is an indispensable antioxidant for detoxification and is synthesized within the mitochondrion. Glutathione may not reliably be augmented by oral supplementation because it cannot always pass over the mitochondrial membrane, therefore it must be synthesized within the mitochondrion. ALA and its metabolite DHLA provoke the cell to produce significantly higher levels of glutathione (even by 70%). So if the glutathione levels in a cell are kept up to a satisfactory level by ALA, even if the cell is poisoned, the cell will have a better chance of recovering instead of dying. Other researchers have demonstrated that ALA can help glucose enter the injured cell. In this way, it provides the fuel necessary for the mitochondrion powerhouse. This energy can be used for the increased cell divisions that are necessary for the regeneration of a severely damaged liver. The

recommended dose of ALA is 100mg twice a day with meals. Although others have used higher doses: 300mg - 600mg.

Gut Healing Protocol for Leaky Gut

A key player in gut healing is the bone broth, rich in nutrients and amino acids which helps heal the gut, soothe the gut lining, and enhance healthy gastric secretion for digestion of protein and fat. If you find broth too rich or upsetting in the beginning, then try with stock.

Stock is rich in gelatin and free amino acids (i.e. proline and glycine) which help heal and strengthen connective tissue. These nutrients are obtained during the first few hours of cooking fish, beef and lamb. Since large bones need longer cooking time, making stock without them will yield these nutrients.

Stock will help you with digestion, increasing the quality of hydrochloric acid in your stomach which will help you digest protein and fat.

If you have a lot of food sensitivities, or other debilitating chronic conditions such as an autoimmune disease, you might want to try these protocols to speed up gut healing along with the diet.

-L-glutamine, 1000mg to 3000mg once or twice daily on an empty stomach. L-glutamine is the primary source of fuel for the cells in your gut, it helps regenerate them. Large amounts (6000mg) are used to meet the high energy demands of the digestive tract, liver and immune system during periods of

physiological stress. L-glutamine has been shown to increase IQ levels in some mentally deficient children. L-glutamine is fuel for your brain and your second-brain (gut)! A deficiency in L-glutamine can result in mental fog and fatigue. A small dose of L-glutamine can help ward off feelings of anxiousness (Murphree, 2008). L-glutamine helps regulate blood sugar levels, eliminates sugar cravings and low sugar episodes, making it an ideal supplement for those with sugar cravings. For a more effective result, place some L-glutamine underneath your tongue to ward off cravings. Those who benefit the most from L-glutamine include those who have had IBS, leaky gut, food allergies, yeast overgrowth and other inflammatory conditions of the gut.

- Probiotics, follow label instructions. It helps to restore normal gut health and immune response. Choose a good quality probiotic with at least lactobacillus rhamnosus and with a stomach acid resistant capsule.

Lactobacillus rhamnosus GG is a probiotic unlike any other because it has little “hairs” (pili) that helps it stick to the inner lining of the digestive system. It also acts as the good guy promoting the proliferation of other good bacteria in the neighborhood, and surviving stomach acidity, making it likely to reach the intestinal walls where it’s needed the most. Lactobacillus rhamnosus has a unique capacity to promote gut health and wellness in general, diminishing food sensitivities, inflammation, and the risk of infections. When the gut flora is compromised, it is common for the any person to become malnourished, obese and have multiple nutrient deficiencies and food intolerances. In fact, around 80 to 85% of the immune system is located in the gut.

Lactobacillus rhamnosus reduces anxiety. In fact, good bacteria in the gut shape the brain in ways we are just starting to comprehend. The gut is home for the “second brain” which consists of 100 million neural inputs and outputs through which we feel the inner world, as in gut feelings. Our emotions are influenced by our gut health, so not only what we eat determines our health, but also our emotional well-being. Gut health is very important indeed!

- Omega-3 fish oil or krill oil, 2 to 4 capsules per day (you can take more). It helps promote production of anti-inflammatory chemicals.

- N-acetyl-cysteine, take around 500mg per day.

As a general rule, the diet is the best tool you have to heal your gut. Remove all foods to which you are sensitive and give the high fat, ketogenic diet time.

- Slippery elm, 1 to 2 teaspoons mixed into a glass of water, taken up to 4 times per day. It takes care of inflammation and ulcers of the digestive system. It helps in gastritis, diarrhea, constipation (with large amounts of water) and many other conditions. It has a soothing action in all mucous membranes. It also provides an effective barrier against infection.

- Aloe vera, 1 up to 4 teaspoons per day. Aloe vera is very useful to repair damage in the digestive tract for the very same reasons it helps repair and soothe your skin after a sunburn. Aloe vera buffers pH, so it is best to take it between meals to leave the acid needed for protein and fat digestion.

Keto-adaptation Troubleshooting Protocol

In addition to the information in the Easy Digestion protocol and Constipation Protocol, there is a chance that you might still experience muscle cramps while getting adapted to ketosis. Usually this is not the case if salted bone broth is consumed. But if cramping still occurs, take L-carnitine (or acetyl-L-carnitine), follow label instructions. Recall that L-carnitine transports fatty acids inside the mitochondria so it can be used as energy. Found typically in meat, it might take some time before your body is able to use it from the diet. This is why L-carnitine has been so helpful in cardiovascular and brain diseases. What suppliers usually don't tell you is that a keto-adaptation will take care of these problems by cranking up your fatty acid metabolism.

Potassium 2 tablets 99mg with each meal for 3 or 4 days, then follow label instructions++++

Remember that the salted bone broth or the fat bomb of the recipes section is a blessing for your health and when you transition towards a fat metabolism. You should make it and take it every single day of your life from now on.

Potassium and sodium go hand in hand. If you lose a lot of sodium through the diuretic effect of a low-carb diet, you'll lose a lot of potassium as well. Keeping your salt intake up will help preserve your potassium as well. Both sodium and potassium are supplied in enough quantities through the salted bone broth. Maintaining your potassium levels will prevent you from losing lean muscle mass during ketoadaptation. Plus, both sodium and potassium prevent cramping and fatigue. As Volek and Phinney recommend in *Art and Science of Low Carbohydrate Living*:

Ridding your body of this excess salt and water is a good thing, but only up to a point. After that, if you don't replace some of the ongoing sodium excretion, the associated water loss can compromise your circulation. The end result is lightheadedness when you stand up quickly or fatigue if you exercise enough to get 'warmed up'. Other common side effects of carbohydrate restriction that go away with a pinch of added salt include headache and constipation; and over the long term it also helps the body maintain its muscles.

They then suggest the broth clarifying that a ketoadapted metabolism insures that you pass the sodium right on through within a matter of hours, so do not fear salt buildup in your system.

This rapid clearance also means that on days that you exercise; take one dose of broth within the hour before you start, it will help you preserve muscle mass while moderating your protein intake.

If you still have cramping after all these measures, take potassium citrate, following label instructions and magnesium as well. Keep in mind that you must drink enough water, or no amount of minerals will relieve cramping, tiredness, headaches or constipation that is due to loss of both sodium AND water.

For those struggling with the low carb diet adaption. I had the major depression, the anger, the total lack of energy for almost two weeks - and then I went seriously low carb. I went four days with less than 15 [grams of] carbs per day (three of those days I had zero carbs) - felt horrible (especially in mood), then, the fifth day in the late afternoon it felt like I was on rocket fuel! This is the sixth day and I

don't even know what to do with this much energy - it is that noticeable!

It's really astonishing - just bursting with energy, my mind is clear and quick and I think my vision is even clearer - it's bizarre! So - hang in there and do NOT give in to those sweet cravings! It only took me four days of extreme low carbs (of course this was after years on the diet, following the forum threads as we all went along experimenting) - but once I went really low carb, only four and a half days or so, then - a pronounced shift.

So - don't give up - lots of water, lots of potassium, lots of fat and lots of vitamin C water with salt and the bad times do pass. -Anart.

Ladies have to keep in mind that there are menstruation changes with the diet. Menstruations are more spaced out, but they can be more regular at the beginning of the diet while the body gets adjusted. Research shows that the number of menstrual cycles modern women experience differs greatly from the number experienced by pre-agricultural women. American women currently experience three times as many menstrual periods as women who have continued living in the ways of earlier ancestors. Typically, PMS and other problems such as fibroids, painful breasts, and others get relieved or eliminated with the ketogenic diet. It is known that among primitive Inuit women, there were hardly any or no women's health problems. Optimal health avoided the need of Cesarean child birth as well! If you are having problems with your periods, you can check the Estrogen Dominance protocol for a temporary good solution until your menses stabilize in a new rhythm.

Some people report calculus buildup on their teeth, especially where the salivary ducts have their exit: inside of the lower front teeth. If you drink black tea, you might find out they get easily stained as well. To counteract this problem, wash your teeth with sodium bicarbonate and do mouth washes with it as well. The bone broth with its added minerals and salt usually keeps this problem from happening though. Risking sounding like a broken record: don't forget to have your bone broth!

Those who have had skin rashes on a ketogenic diet have seen their problems resolve as they are able to digest better fat and meats with the aid of apple cider vinegar or betaine hydrochloric acid supplementation, and also by buying organic foods rich in omega-3s.

In *Life Without Bread*, Allan and Lutz reports how a low dose prednisone therapy has helped their patients going on a low carb diet and who have trouble getting over "autophagy" symptoms. That is, they report people feeling like they have cold, only that no real infection is taking place and they don't feel necessarily ill. It involves prednisone at very low doses which doesn't have the side effects that a therapeutic prednisone dose has. It is also for a very short period of time, so it would not interfere with your low sugar levels in the long-term. And while the dose is low enough, it still has helped their patients with autoimmune diseases to get over the transition period. They found that a simple treatment with 10 to 12 mg of prednisone for four to five days was enough to eliminate minor problems. The dose is low enough and an open minded doctor can prescribe it.

Those who can't seem to get over the fatigue after some time on the diet and the recommended supplementation might have low thyroid function and adrenal fatigue. Refer to the adrenal fatigue section for more information. No matter what you do to address your thyroid, if you are under adrenal fatigue, thyroid function will unlikely normalize. Others might benefit of "over-feeding" alternating with intermittent fasting.

Adding in an "over-feeding day" (a day where you add 250 to 300 more calories of high-fat, moderate-protein, low-carb food) once or twice a week helps stimulate T3 production. [...]

In extreme cases, we need a non-ketogenic day a few times a week to increase glucose and insulin levels in order to help the conversion of T4 to T3. Remember, you can make glucose from excess protein through gluconeogenesis. This is why an over-feeding day with more grams of protein is my suggestion, rather than increasing glucose with excess carbohydrates. [...]

This event stimulates the thyroid. When you constantly eat a certain amount every day, your thyroid may start to produce less T3, the activated thyroid hormone. We do need some sort of energy deficit, but if we do that every day for years, our thyroid may downgrade. [...]

The reason behind intermittent fasting is based on the foundation that your body tends to burn glycogen from your liver, but there is only enough glycogen for six to eight hours. Once your glycogen stores are used up, what is left? Fat! [...]

There are a lot of ways to add fasting into your life. For one, I suggest clients skip dinner once or twice a week. Maybe

it is a day you know you will get home late and will be eating too close to bed. I like this because it stimulates the human growth hormone to be at a high level when you fall asleep. Some clients are so fat-adapted that they do this every day, where they stop eating at 3 p.m. This takes some adjustment. It is easy when you are a fat burner, but if you are a sugar burner and you continue to have a “treat” of sugar or carbs every once in a while, this is a hard thing to practice. [...]

Intermittent fasting should last at least eight to ten hours when you are awake.

Emmerich, Maria . Keto-Adapted

L-lysine and l-leucine are a couple of amino acids that readily convert into ketones. Folks in the fitness community take leucine for muscle building and maintaining lean mass. It is one of the aminos considered as essential since our bodies cannot make it. L-isoleucine helps in muscle recovery after a work-out, increasing energy and endurance. Suggested dose is 1000mg of L-lysine and 1500mg of l-leucine first thing in the morning.

Preventing Kidney Stones

There is some controversy on whether the ketogenic diet raises the possibility of kidney stones. Since it is a problem that can potentially cause a LOT of pain and there are some people who have done the ketogenic diet for extended periods of time, I thought I would gather some of the info about it and what can be done in order to stay on the safe side. The

problem could potentially arise in some people who are predisposed to develop kidney stones due to structural differences (congenital issues).

According to Lyle McDonald in *The Ketogenic Diet: A Complete Guide for the Dieter and Practitioner*:

In epileptic children, there is a low incidence (5%) of small kidney stones. This may be related to the dehydrated state the children are deliberately kept in rather than the state of ketosis itself.

Some data that suggests that 1 in 20 children will develop kidney stones on the ketogenic diet, but that it can be prevented (Sampath 2007).

Dehydration, low urine pH and fat malabsorption seem to be the reasons why there might be an increased incidence in kidney stones in a very tiny percentage of children treated with ketogenic diets for epilepsy (Choi, 2010). But keep in mind that the more often than not, the fat used in these mainstream studies is inflammatory (i.e. soy, vegetable oils). Yikes!

In short, there is a chance that some individuals might develop kidney stones on the ketogenic diet, especially if there is a predisposition. Drinking enough water, taking citrate supplements in the form of magnesium citrate or potassium citrate and making sure you are absorbing your fats will prevent it.

Some folk do have a predisposition to form kidney stones. It doesn't mean they can't benefit from the ketogenic diet. But in case of doubt, do keep well hydrated and take citrate supplements.

Useful Supplements

Vitamin K2

You need to be eating beef liver, butter, oysters, mussels, bone marrow, fish eggs and organs in order to get vitamin K2. It is essential for calcium to go where it should (bones and teeth) and not where it shouldn't (your arteries). It was Weston Price who established the importance of vitamin K2. Along with vitamin A and D, it is very important for growth and health. All these vitamins are typically found in animal foods which then have the fat required for their digestion and proper assimilation. It is very important for cardiovascular health. People with the highest vitamin K2 consumption have a 50% lower risk for heart attack mortality. Vitamin K2 also protects against vitamin D toxicity. Make sure your butter is organic, and the darker it is, the more K2 it will contain.

Vitamin D3

Vitamin D3 is really not a vitamin, it is a secosteroid hormone related to our immune system. Nowadays, everybody seems to have low levels of this vitamin. But it seems the problem has several aspects to it. In part it has to do with the cholesterol fear mongering going around since cholesterol is needed to make vitamin D3 from sunlight. In addition to that,

an imbalance in the immune system might result in low vitamin D levels even though there is enough sun exposure and cholesterol.

Low levels of vitamin D3 has been associated with the following diseases: obesity, depression (seasonal affective disorder which occurs in winter), autism, multiple sclerosis, amyotrophic lateral sclerosis, schizophrenia, asthma, cancer (prostate, breast, colon, leukemia, pancreatic, etc cancer), tuberculosis, the common cold, toenail and fingernail fungus infections, type 1 diabetes, metabolic syndrome (insulin resistance, type 2 diabetes), high blood pressure, rheumatoid arthritis, Crohn's disease, irritable bowel syndrome, ulcerative colitis, alcoholism, cysts, acne, heart disease, chronic obstructive pulmonary disease (bronchitis, emphysema), lung problems, macular degeneration, lupus, kidney disease, pre-term births, pregnancy complications, gastritis, learning disabilities, anorexia nervosa, strokes, all autoimmune diseases, glaucoma, migraines, Parkinson's disease, urinary tract infections, PMS, cavities in teeth, gout, etc!

You can measure your vitamin D levels (25-D), but only measures of both 25-D and 1,25-dihydroxyvitamin-D (the active metabolite) will help you understand what is really going on. The problem comes when there is an infection with L-bacteria, bacteria which live inside cells.

Vitamin D metabolism can be dysregulated by these bacterias so they can proliferate by inactivating the Vitamin D Receptor (VDR) which has a fundamental role in our immune system.

In an attempt to activate the VDR and kill the bacteria, the infected cells release inflammatory chemicals which causes 25-D to be converted into 1,25-D; the result is low 25-D levels and elevated 1,25-D levels. Thus, the disease process causes low 25-D, but that doesn't mean low 25-D is the cause of the disease.

Vitamin D supplementation promotes excess production of 1,25-D in infected people with L-bacteria, which then decreases vitamin D receptor transcription of proteins that have broad spectrum antimicrobial activity against bacteria, viruses, and fungi. This results in less elimination of microbes and thus, an improvement in symptoms which deceptively suggests that you are getting better. However, symptoms may come back in the long-term, as the intracellular bacteria continue to multiply.

1,25-D (a secosteroid hormone) is essential for many vital metabolic functions. The vitamin D receptor is responsible for turning on and off a wide variety of genes and chemical pathways. When 1,25-D levels reach a certain threshold, 1,25-D binds not just to the VDR, but to other nuclear receptors that regulate the body's hormones (i.e. adrenals, thyroid, sex), thus, disrupting hormonal homeostasis.

Perhaps it is for this reason why a study involving almost 250,000 people found higher mortality rates when the blood contained extremely low levels of 25-D, but also high levels as well (less than 2.5 ng/mL or more than 56 ng/mL respectively). The lowest mortality rates were seen with levels of 20 ng/mL of 25-D.[3]

If you benefit from Vitamin D3 supplementation, make sure most of your intake comes from natural animal sources such as cod liver oil which contains other nutrients necessary for a proper metabolism. It is perhaps for this reason that cod liver oil has proved to fight off infections dramatically. Don't get vitamin D2, which is highly synthetic and can cause problems. We are likely to see problems if we drift away from natural animal sources. Also, keep in mind that ketosis is by far the best tool against intracellular bacteria since it promotes autophagy.

Boswellia (Frankincense)

Boswellia serrata is an herb that has been used for thousands of years to treat conditions related with inflammation. It has similar effects as the non-steroidal anti-inflammatory drugs (NSAIDs) - such as ibuprofen and aspirin - but without the side effects.

It reduces inflammation in both osteoarthritis and rheumatoid arthritis, inflammatory bowel disease, and other autoimmune conditions.

Boswellia blocks 5-lipoxygenase (5-LOX) which leads to the release of the inflammatory chemicals known as leukotrienes. Leukotrienes are involved in cancer, asthma, and arthritis. It also decreases chemicals (i.e. matrix metalloproteinase proteins) involved in endothelial dysfunction, cancer metastasis and other diseases. Boswellia helps in the prevention of cartilage and joint tissue deterioration.

In those with ulcerative colitis and Crohn's disease, boswellia reduces gastrointestinal inflammation and tissue damage. It also helps relieve anxiety and depression.

Boswellia also acts as an anti-microbial for gram positive bacteria such as Staphylococcus aureus and Staphylococcus epidermidis. This is very important due to the widespread emergence of methicillin-resistant staphylococcus aureus superbugs (MRSA). It also has anti-candida properties.[4] Boswellia also seems to aid in brain plasticity essential for memory, learning and preserving cognitive abilities.

Take boswellia when having digestive problems or inflammatory conditions in general.

Zinc

Our richest sources for zinc are oysters. It is involved in over 300 enzymatic reactions in your body and it plays a critical role in DNA repairing, replication and protein synthesis. It also supports your immune system and controls inflammation. It also helps support a healthy respiratory, thyroid and digestive system, where it activates digestive enzymes necessary to break down and digest food better. It helps prevent food allergies and helps rid the body of heavy metals such as mercury. It protects you against oxidative stress, it helps in wound healing, it promotes a healthy emotional state, and it can reduce the severity and duration of the common cold. It has also delayed the progression of macular degeneration and vision loss. Zinc plays a crucial role in your skin and it has been used to treat inflammatory conditions such as acne, boils, dermatitis and other skin conditions at a dose of 90mg per day.[5]

People with impaired taste and smell often have zinc deficiencies. They also tend to have weak nails and white spots as well. Wound healing might be slowed down and they can have a tendency to lose hair or have dandruff. People with inflammatory bowel disease, rheumatoid arthritis, depression, also tend to have zinc deficiencies. There are also links with schizophrenia and zinc deficiencies.

The usual dose is 30-50mg of zinc at breakfast. Some folks get a nauseating feeling after taking it, liquid zinc is much better tolerated.

Mitochondrial Energizers

- D-Ribose, 5 grams a day in powder.
- Acetyl-L-Carnitine, 500 mg twice a day.
- Coenzyme Q10, 400mg a day

- Alpha lipoic acid, 100mg twice a day.
- NADH, 10 mg a day.
- PQQ 10 mg, 1 or twice per day.

As we have seen, the best way to heal mitochondria is through ketosis. If you can't wait to get there, you have to keep in mind that the top mitochondrial nutrients are the ones mentioned above plus magnesium, riboflavin, niacin, and N-acetyl-cysteine. If you focus on only one nutrient, you might create an unnecessary imbalance. All of them will serve as nutrients and antioxidants to protect your mitochondria; the combination is the key, plus a high fat diet which will provide what your mitochondria's membranes need to protect them from the environment.

Supplementing with these supplements might be necessary in those with debilitating diseases who are having trouble creating mitochondria and going into a fat-burning ketogenic metabolism.

Prostate protocol

Zinc picolinate (Zn 30mg, Copper 2mg) – twice my current daily intake at bedtime.

1 tbsp flaxseed oil (as now at breakfast)

Omega 3 fish oil, 2000mg (as now, split between breakfast and lunch)

Evening Primrose oil, 1300mg (as now at teatime)

Vitamin E, 800IU (as now at teatime)

Amino acids (glycine, alanine, and glutamic acid) as in Prostex, two tablets (375mg each) 3 times a day for 2 weeks, then 1 tablet 3 times a day for maintenance (Saw palmetto extract is included in the formulation)

Vitamin C 4000mg (as now, split between breakfast and teatime – my saturation point (when combined with the Magnesium))

Magnesium citrate, 800mg (at bedtime) and transdermal Magnesium Chloride

Vitamin B6, 67mg (at breakfast)

GABA, 1000mg (split between teatime and mid evening)

Supplements for Autoimmune issues and rejuvenation

by Laura

Alpha Lipoic Acid - 1

Thorne Trace Minerals - 1

Healthy Aging with NT Factor - 1

Now NADH - 1

Life Extension Super K with K2 complex - 1

NAC - 3 times per day

Life Extension PQQ Caps - 2

PQQ is for mitochondrial biogenesis support.

DMSO: The Real Miracle Solution

This is something you must absolutely have in your medical cabinet. We recommend DMSO in rose cream in topical use for pain and inflammation. DMSO is useful as a pain reliever and also in burns, acne, arthritis, mental retardation, strokes, amyloidosis, head injury, scleroderma, it soothes toothaches, eases headaches, hemorrhoids, muscle strains, it prevents paralysis from spinal-chord injuries and softens scar tissues. In fact, it is useful in well over 300 ailments and is safe to use. You might think that a compound that has so many alleged

uses and benefits should be automatically suspect, so let's have a close look at its properties and the data available and we'll shed some light on this miraculous chemical.

Dimethyl sulfoxide (DMSO) is an organic sulfur compound which was used initially as an industrial solvent, that is, until its medical properties were discovered in 1963 by a research team headed by Stanley W. Jacob, MD.

DMSO is an effective pain killer, blocking nerve conduction fibers that produce pain. It reduces inflammation and swelling by reducing inflammatory chemicals. It improves blood supply to an area of injury by dilating blood vessels and increasing delivery of oxygen and by reducing blood platelet stickiness. It stimulates healing, which is a key to its usefulness in any condition. It is among the most potent free radical scavengers known to man, if not the most potent one.

DMSO also penetrates the skin and the blood-brain barrier with ease, penetrating tissues, and entering the bloodstream.

It has a calming effect in the central nervous system and it reaches all areas of the body, when absorbed through the skin, including the brain. That is, DMSO applied to one area often leads to pain relief in some other location due to its systemic effect. It acts as a natural diuretic and relaxes muscles. It boosts the immune system, and has anti-bacterial, anti-viral and anti-fungal properties.

DMSO has radioprotective properties against lethal and mutagenic effects of X-rays in cells, cellular systems and whole animals. It also has cryoprotective properties, meaning that it is capable of protecting against injury due to freezing. DMSO is sold in health food stores, mail-order outlets, on the Internet, and in most countries around the world. It is used by millions for its health benefits yet in the U.S., DMSO has FDA approval only as a preservative of stem cells, bone marrow cells, and organs for transplant, and for interstitial cystitis - a

painful inflammatory condition of the bladder which is very difficult to treat with other therapies. Despite restrictions on the use of DMSO, thousands of Americans purchase it on the 'black market' each year, its popularity due not to publicity, but rather 'word of mouth'. When you have something that relieves all kinds of ailments, including some life-threatening ones, people naturally recommend it to friends and family! DMSO is effective for macular degeneration and retinal disease, both diseases of the eye. This effectiveness was first discovered when patients with retinitis pigmentosa, a retinal disease, were taking DMSO for certain musculoskeletal disorders. They sensed that their vision had improved and some had remarkable results.[6]

"My brother put some DMSO gel (70% dms0, 30% aloe vera) on his shoulders and lower part of neck because he had muscle pain/soreness in that area, and it caused skin redness/irritation for a few hours, although it did diminish the muscle soreness as well...my grandma has rheumatoid arthritis that made her legs swell up and hurt continuously, and I had her apply the same DMSO gel, and after about 2-3 days of applying it once a day, the swelling was 90% gone, and I think within 4-5 days it was 100% gone, and she said the pain diminished as well." - Michael Shatskiy, Los Angeles, California, United States

DMSO is generally applied to the skin in a gel, cream, or liquid. Strengths and dosages vary widely. The only side effect of DMSO is its peculiar garlic-like taste and smell (no matter the route of application), and mild skin irritation when applied topically. If you are just dealing with pain or an injury, use a topical application. If you use a rose scented DMSO cream, chances are that nobody will be able to smell DMSO's garlic-like smell.

The skin must be clean, dry, and unbroken for any topical use of DMSO. The face and the neck are more sensitive to DMSO and no higher concentrations than 50% should be applied there. Topical concentrations of DMSO should be kept below 70% in areas where there is a reduction of circulation. When 60 to 90% DMSO is applied to the skin, warmth, redness, itching, and sometimes local hives may occur. This usually disappears within a couple of hours and using natural aloe vera, gel or cream, will help counteract or prevent this effect. When 60 to 90% DMSO is applied to the palm on the hand, the skin may wrinkle and stay that way for several days.

"My brother has arthritis of the spine. He is in pain and bedridden more than half the time. When he is treated with DMSO, he is able to lead a normal, active life... Just one application of this cheap, safe DMSO changed my brother from a grimacing patient into an active, pain-free man in exactly 30 minutes!"[7]

For chronic pain topical DMSO for 6 weeks is needed before a change occurs, but many report relief to a degree they had not been able to obtain from any other source. In general, the greater the chronicity of the disorder, the longer the treatment with DMSO must be employed in order to achieve relief.[8]

Common health problems for which people will apply topical DMSO at home include acute musculoskeletal injuries and inflammations. The earlier DMSO is used, the more dramatic the result. A 70% concentration of DMSO mixed with water in volumes ranging from 8 to 12 ml, applied on and around the injury in a wide area at least three times daily, will have a healing affect in 4 out of 5 people.

The garlic-like body odor and taste in the mouth that some experience is attributable to a specific DMSO metabolite: dimethyl sulfide (DMS), a component of natural onion and

garlic flavors.[9] This can last for one or two days and in a small number of people, especially men, the odor can be very pungent.

Only purified and properly diluted DMSO should be used. When you dilute a pure DMSO solution, always do it in distilled water. When it is applied, the skin site as well as the applying hand should be thoroughly cleaned before application. This is of utmost importance as DMSO's properties allow contaminants to be absorbed through the skin and transported into the bloodstream.

DMSO is known to be one of the least toxic substances in biology[10], so any serious side effects should come from potential contaminants or the intake of concomitant drugs that DMSO will carry into the body. Worth repeating again, DMSO and any substance dissolved in it, will penetrate the skin, the blood-brain barrier, and other parts of the body very fast.

Remember also that DMSO increases the effects of drugs like blood thinners, steroids, heart medicines, sedatives, etc. In addition to that, acetone or acid contamination of DMSO can lead to serious medical consequences. Be aware of this problem when buying unreliable DMSO. A pure DMSO solution will turn solid (like ice) in the refrigerator within 2 hours. If, when the frozen bottle is turned upside down, little rivulets of water flow through the ice, you probably possess the veterinary grade DMSO. This is a 90% concentration. Ten percent is distilled water.

Women are discouraged from using DMSO during pregnancy or breastfeeding, even though DMSO is used to preserve frozen human embryos. DMSO can interfere with liver function tests and give a false reading. That problem is easily

solved by waiting a week after DMSO usage before taking the test.

Long-term use has been documented as safe. Eye damage, reported in laboratory animals, has not been confirmed. Side effects such as skin rash and itching after topical application can be avoided in large part by employing more dilute solutions. Since DMSO causes dryness and scaling of the outer layer of the skin, skin diseases characterized by scaling (psoriasis) could be aggravated by the use of DMSO. But DMSO applied topically for only a few days has been useful in psoriasis. Prolonged use of DMSO for the treatment of psoriasis is not advised however, as it can worsen the psoriatic condition.[11]

Sulfur is an element of the earth and it is essential to life, it is among the most prevalent elements in the human body. Allergic reactions to sulfur are not possible because sulfur has no protein component. When people are 'allergic to sulfur', what they really mean is that they are allergic or sensitive mainly to certain sulfur-containing drugs or proteins, most notably sulfa antibiotics (sulfonamides) or to sulfites (preservatives used in wines and some foods), or to foods with a high sulfur content (broccoli, cauliflower, garlic, onions, etc). Many individuals with allergies to sulfa drugs, sulfites, or high sulfur containing foods do not experience problems taking DMSO, because apart from sulfur, DMSO bears no relation to these substances.

Adrenal Fatigue Protocol

If your “adrenals are shot”, then your stress-coping abilities are severely depleted. That is, you’ll just stress out. Adrenal fatigue can affect anyone who experiences frequent,

persistent, or severe mental, emotional or physical stress. It can be a contributing factor in health conditions ranging from allergies to obesity and despite its prevalence in our modern world, adrenal fatigue is for the most part ignored and misunderstood by the medical community.

The adrenals are located on top of your kidneys and they are responsible for producing noradrenaline and adrenaline which are important for your “fight or flight” acute response. Your adrenals are also responsible for producing steroid hormones from cholesterol, including DHEA, progesterone, estrogen, testosterone and cortisol.

Cortisol has a fundamental role in coping with chronic prolonged stress (psychological, physical or emotional). Cortisol is anti-inflammatory; it increases stamina, boosts mental and physical energy and has a role in your immune/defense system response. It is here where the low fat scam takes its toll again. But several things may go wrong other than low cholesterol levels. For instance, your adrenals and your HPA axis might be overstressed or dysfunctional.

The hypothalamus-pituitary-adrenal (HPA) axis is what can be considered the head master of your adrenals. As the name suggests, the HPA axis is composed of the hypothalamus, the pituitary gland (both in the brain), and the adrenal glands. Our hypothalamus is that part of the brain considered as the master gland of the endocrine system due to its homeostatic (balance) effect over all our hormonal system.

This is why the HPA axis regulates many functions such as blood pressure, digestion, circadian rhythms, sex drive, body temperature, balance and coordination, heart rate, sweating, water balance, blood sugar levels, adrenal hormones, thyroid hormones and metabolism.

The HPA axis, as the head master overseeing your adrenals, has an effect in your reactions to stress. What is more, chronic stress can suppress the HPA axis, leading to lower production of cortisol by the adrenals.

If there is an imbalance of the HPA axis, it will disrupt our body's ability to maintain homeostasis of any hormonal system. Thyroid function may become compromised by any disruption to the HPA axis, so stress can definitely have an effect on thyroid function. A dysfunctional HPA-axis can cause estrogen, testosterone, and progesterone to become imbalanced as well.

If you have leptin resistance due to a high carbohydrate diet, that will make your HPA axis most unhappy as well. Recall from the science background how leptin proved to be a major hormone that ultimately influenced all other hormones and the functions of the hypothalamus in the brain. Thus, leptin controls the function of the HPA axis. As it happens, it seems that leptin enhances your flight or fight response and it inhibits the secretion of steroid hormones (cortisol) by the adrenals (Malendowicz, 2007). Thereby it promotes the stress response and it discourages anti-inflammatory effects.

An imbalance in your HPA axis is known to cause symptoms such as muscle or joint pain, dizziness, fatigue, low body temperature, a compromised immune system, constipation or diarrhea, abdominal pain, depression, and less mental acuity (Murphree, 2003).

People with low cortisol levels have a tendency towards allergies, especially hay fever, and the beginnings of arthritis. Low cortisol is associated particularly with autoimmune disorders, such as asthma, arthritis, allergies, ulcerative colitis, and fatigue.

Adrenal Fatigue: The 21st Century Syndrome

Adrenal fatigue refers to the concept of too much stress depleting your adrenals and causing a decrease in the output of adrenal hormones, particularly cortisol. Even though mainstream medicine denies its existence, adrenal fatigue has been called hypoadrenia, neurasthenia, non-Addison's hypoadrenia, subclinical hypoadrenia, adrenal neurasthenia and so forth (Wilson, 2001).

Low cortisol levels may make you less able to respond when you need to, and it has been associated with low grade, frequent emotional (and sometimes physical) abuse and neglect (Gerhardt, 2004). There is a strong link between low cortisol and post-traumatic stress disorder (PTSD). Low cortisol has also been associated with a lack of positive good feeling.

Years of poor sleep, excessive stimulants such as coffee, chronic psychological stress (anything from a divorce to an economic collapse), surgeries, traumatic events, and environmental toxicity can have a very heavy toll in your adrenals as well. The adrenals, in their effort to regulate blood sugar extremes from a lifetime of a high carb diet, become overburdened, eventually burning them out.

Adrenal fatigue is a syndrome, that is, a collection of signs and symptoms. People can look normal, yet they are living with a general sense of unwellness. People who suffer from adrenal fatigue often have problems regulating their blood sugar, they tend to experience more delayed food allergies, they are more vulnerable to infections and they tend to have pains and mood problems such as anxiety and depression, they also have sleeping problems. People with frequent respiratory infections, rhinitis, asthma, frequent colds, allergies, fibromyalgia, chronic fatigue syndrome, diabetes, autoimmune disorders tend to have adrenal fatigue. In fact, allergies seem to get worse when there is more stress since cortisol is needed to counteract the inflammatory reactions.

People with adrenal fatigue tend to skip breakfast. They wake up without appetite and the only thing they want is coffee. This has the effect of stimulating their adrenals, extracting the very last juice from them so they can start-up the day. Under more stress, they can faint easily if they skip further meals or just drop exhausted anywhere. If you are to heal your adrenal function, you must absolutely eat a big fatty breakfast. To clarify, this skipping breakfast characteristic of those whose

adrenals are shot is different from those who are on a ketogenic diet and do intermittent fasting because they run on ketones and don't feel hungry. How can you tell the difference? Well, if you were eating a modern diet until yesterday, then you know you are among the first!

This is why people addressing adrenal fatigue shouldn't skip breakfast. Those who are under a lot of stress and are addressing adrenal fatigue should eat plenty before going to work, first thing in the morning.

Once you are ketoadapted, you'll be able to go without food for long periods of time without suffering. It is then when breakfast first thing in the morning doesn't become a must. Whenever you "break your fast" is when you eat your most important meal of the day regardless of the time of the day.

Other hormones produced by the adrenals also may leave the ladies prone to more facial hair or acne.

People can crave more salt since the adrenals are also responsible for releasing a hormone related with salt and water. In adrenal fatigue, more sodium is lost than usual, leading to drops in blood pressure, tiredness and lots of salt craving. It is a crime to deprive a person with adrenal fatigue of salt. As it happens, salt has anti-inflammatory effects since it is a natural anti-histaminic. Why do you think it is recommended for sinus congestion?

Since the adrenals produce the rejuvenating steroid hormone DHEA (dehydroepiandrosterone) - precursor for estrogen, progesterone and testosterone - people with adrenal fatigue tend to have bone loss, loss of muscle mass, depression, aching joints, decreased sex drive and so forth.

Another thing often overlooked is that if you are meant to normalize a low thyroid function, you must absolutely heal your adrenals first, otherwise, nothing will happen. Thyroid function often normalizes when you support your adrenals and remove delayed food allergies. Thyroid problems often mean gluten intolerance, and if gluten is removed on time, and you support your adrenals, the damage is reversible.

If you have adrenal fatigue symptoms such as chronic stress, tiredness, excess facial or body hair growth in women, several food sensitivities, multiple chemical sensitivities, hair loss, acne, salt cravings, recurrent infections, low blood pressure, tend to skip breakfast in the morning (lack of appetite and/or drink only coffee), or feeling cold. Keep in mind that you'll never normalize a low thyroid function (diagnosed either by lab tests or clinical symptoms) if you don't address adrenal fatigue.

First, try titrating doses of vitamin C since it is a very important nutrient for adrenal function and repair, other than cholesterol. Refer to the vitamin C section earlier, making sure you don't have iron overload.

Second, try an herbal extract for adrenal support, or even better, adrenal cortex supplementation. Not the medulla extract, but the CORTEX extract. If you try medulla, it would

likely compound palpitations and nervous energy. Take adrenal cortex 500mg twice per day, first thing in the morning and at midday.

Low Dose Hydrocortisone, dosage as follows:

- Start with 2.5 mg (a quarter of a 10-mg tablet or half of a 5-mg tablet) per day between 6 and 8 am for one week.
- Increase the dose to 5 mg per day between 6 and 8 am if you saw no positive response with the lower dose for one week.
- Increase the dose to 10 mg per day between 6 and 8 am if you saw no positive response with the previous dose for one week
- Maintain your dose of 10 mg in the early morning and add 5 mg at noon if you saw no positive response with the previous dose for one week.
- Maintain your dose of 10 mg in the early morning and 5mg at noon, add 5 mg at 4pm if you saw no positive response with the previous dose for one week.

If at any point you experience carbohydrate cravings, experience bloating or insomnia, feel hyper, or have any other negative symptoms, either stop or reduce the dose. This is not meant to be a permanent therapy, you can stop this protocol a few days after you feel better, regardless of the dose you were taking. In case of illness or trauma or physical stress, you can take hydrocortisone again with double the dose.

Ask your physician for a hydrocortisone prescription. Most doctors will prescribe therapeutic or lower doses of cortisone for inflammatory conditions, so they shouldn't have a problem prescribing such a low dose of hydrocortisone. We are not talking here about therapeutic dosages. This is very important to understand.

Hydrocortisone is the chemical form of the cortisone your adrenal gland produces. The average daily production of hydrocortisone in your body is about 30 to 40 mg. If you have adrenal insufficiency (low adrenal function or adrenal fatigue), you may be producing much less and have symptoms as a consequence. By supplementing your low production with 5 to 20 mg of hydrocortisone, your body's supply becomes normal and symptoms should promptly disappear.

The misunderstanding with this low dose hydrocortisone protocol stems from the use of high-dose cortisone therapies like prednisone, medrol, etc. With such high doses there are significant side effects such as high blood pressure, osteoporosis, Cushing syndrome, immune suppression and so forth. But these effects have absolutely nothing to do with low-dose hydrocortisone treatment. In fact, the reason why most doctors are reluctant to prescribe it is because the dose is way too low in order to make any difference whatsoever. Keep in mind that mainstream science is completely ignorant about adrenal fatigue. The low doses we are talking here is even much lower than what your body normally produces, even if your adrenal's output of hydrocortisone is normal. High-dose mainstream treatment of cortisone is several times your body's daily output, that is, 60 to 300 mg of hydrocortisone per day. So if someone tells you that you are crazy for being on cortisone because it has serious side effects, you can reassure them that you are taking below levels of physiological doses of what your body already produces. Remember, it is not prednisone, it is hydrocortisone. 5 mg of hydrocortisone is the same as about 1 mg of prednisone. Fludan.com sells hydrocortisone in powder form which you

can then weight with a scale for mg, such as a jewel scale. If you are unable to get a hold of hydrocortisone, you can use low dose progesterone cream to support adrenal function described below which also gentlemen can use.

Keep in mind also that the best test to see if you will benefit from this therapy is the trial one, that is no lab test will be able to tell you with accuracy if your adrenals need a boost. People who have negative tests often benefit from low dose hydrocortisone therapy.

Anti-Estrogen Dominance Protocol

For severe PMS problems, adrenal fatigue, very irregular cycles such as heavy bleeding or light bleeding, uterine fibroids, fibrocystic breasts, premenstrual migrains, peri or menopausal symptoms. Please note that most of the women's health issues stabilize on the diet and by minimizing toxicity, since a high carb diet and estrogen-mimicing toxics (BPA, phtalates, pesticides) are at the root. The protocol focuses mainly on progesterone cream as the main issue is estrogen dominance.

Low dose progesterone therapy which was pioneered by Dr. John R. Lee. You can check the website for a list of reliable creams.[12] The protocol is as follows:

- Pre-menopause or PMS problems: from day 12 to day 26: 1/4 to 1/2 of a teaspoon once or twice per day.
- Menopause and post-menopause: 24 to 26 days a month, 1/4 to 1/2 of teaspoon once or twice per day. It is important to have some days off as some spotting may occur (if this happens, use the PMS/Pre-menopause schedule and after 3 to 4 months of no spotting, you can resume the post-menopause schedule).

- Men: 1/8 of a teaspoon, that is, around 8 mg per day. After ovulation on day 14 (that is, if we ovulate) we are supposed to produce around 20 to 30 mg of progesterone per day. The progesterone cream is usually a 2% natural progesterone, so 1/4 gives around 20mg per day. A normal low progesterone dose is of 20-60mg/day (100mg per day maximum).

You can use progesterone cream for about 2 to 3 months and then take a break or stop using it.

Another option to reduce estrogen dominance is Indole-3-Carbinol. Indole-3-carbinol is derived from cruciferous vegetables and inhibits cancer and it also balances hormonal levels, assisting in detoxing. The recommended dose is 200-400mg a day. Consult your physician before taking it if you are pregnant or breastfeeding.

Evening primrose oil (1300mg three times per day) is also the most favored supplement for any reproductive health. It contains the fatty acid gamma-linoleic acid which we mentioned on the science background. This supplement will help regulate hormones and nervous function.

Mood Enhancing Protocols

Serotonin

Serotonin deficiency symptoms include feeling edgy, irritable or angry; having problems falling asleep or staying asleep; lack of motivation or feeling depressed most of the time; preferring to be alone; automatic negative thoughts in your head; anxiety, worry, or difficulty concentrating or taking

decisions; having feelings of low self-esteem and lack of confidence; feeling self-critical and guilty; being shy or fearful; tendency to be obsessive, inflexible, a control freak, or a work addict; PMS or menopausal moodiness; having a sweet tooth or craving carbs and starchy snacks or alcohol; being achy and/or having jaw pain; having a family history of fibromyalgia and/or treatment with serotonin boosting anti-depressants (SSRIs).

These are all manifestations of serotonin deficiency and are typically present in those eating a high-carb diet. That is, a high fat, moderate protein diet will certainly relieve these symptoms. Vegetarians often have a lack of serotonin.

We all have a right to healthy levels of serotonin, but we live in a highly stressful world where we are exposed to all kinds of toxins and pollutants, where our modern foods are often nutritionally deficient and toxic, and where people often have to turn to stimulants or anti-depressants in order to cope with life's demands and stressful situations. We live in a world where life can be quite hard and nothing is certain except death. All of this takes a high toll on our serotonin levels, and thus on our bodies and our psychological well-being. In addition, genetic predispositions might leave you vulnerable to low levels of serotonin. Helping the body to top up the serotonin tank when you are faced with a stressful situation is exactly what you might need.

5-HTP administration has been shown to be effective in treating anxiety, depression, fibromyalgia, insomnia, binge eating, pain, and chronic headaches including migraines. Studies have revealed that it can work better than prescription medications at treating depression, and without the negative side effects! 5-HTP stands for 5-hydroxytryptophan, a form of the amino acid tryptophan which is found in foods like red meat, turkey, fish, or seeds. 5-HTP comes from the seeds of

the African plant *Griffonia simplicifolia* and when taken correctly, it turns into serotonin - a brain chemical which regulates our sleep, raises our pain threshold, and elevates our mood.

We have more serotonin receptors in our intestinal tract than we do in our brain, so it doesn't come as a surprise that low serotonin can also interfere with proper intestinal function. This is also the reason why 5-HTP can be beneficial in the treatment of IBS (Irritable Bowel Syndrome).

In order for our bodies to convert 5-HTP into serotonin, we need calcium, magnesium and B vitamins, so doing the diet and taking your bone-broth is essential to have enough of this important brain chemical.

5-HTP will turn itself into serotonin and then into melatonin, a natural sleep hormone and powerful anti-oxidant. In fact, 5-HTP can increase the body's production of melatonin by 200%.

In general, an average of 300mg of 5-HTP per day is the recommended dose to restore your levels of serotonin, although quite often, some end up needing around 500mg per day. Start with 50 mg at lunch and dinner and increase your dose every 2 days by 50mg until you reach 300mg of 5-HTP per day. If you are unable to have a restorative sleep after two weeks, then you can also consider increasing the dose or supplementing yourself with melatonin at night. If you decide to opt for this therapy, give a trial of one bottle and then see how it goes. As complement, try "Sleeping in Total Darkness", explained in the last chapter.

Potential side effects of 5-HTP include nausea, diarrhea, and sleepiness. Also, in very rare cases, there might be insomnia and headaches, which usually happen when 5-HTP is taken on an empty stomach and when a person has "sluggish" liver issues. The good news is that when you take 5-HTP with

meals and gradually increase the dose, these side effects should be eliminated.

Note: It is practically impossible to reach a serotonin overdose, but a combination of 5-HTP and drugs like SSRIs (serotonin boosting antidepressants) and especially MAOI (Monoamine Oxidase Inhibitors) can result in an overdose. Please, do not take 5-HTP and these prescription drugs without consulting your physician first.

Dopamine

People with low dopamine levels tend to crave chocolate, caffeine and seek out stimulating experiences to boost up their dopamine levels. They may have marijuana or alcohol addictions, or other addictions. A lack of capacity to focus, lack of motivation, low-energy levels, struggle to get motivated to exercise, tendency to sleep too much are other symptoms of a lack of dopamine.

DLPA (DL-phenylalanine) and L-tyrosine are dopamine precursors. DLPA is a precursor for L-tyrosine. They are amino acids which can be bought in powder forms in bulk size or capsules. You can choose between one of the two. If you choose DLPA, take it for just a few days as it can have a crashing effect after a few days of very good mood. You can use it as mood enhancer occasionally and I personally think it is a better option than L-tyrosine because it has other effects. Those who don't respond to L-tyrosine generally do so to DLPA. L-tyrosine is safer to use the entire bottle. Remember that these imbalances are relieved by a diet rich in meat and fat which happens to have the amino acids and other nutrients you need to make your brain chemicals.

DL-phenylalanine inhibits the breakdown of endorphin- and enkaphalin-limiting enzymes. These are substances within the body that help relieve pain. Taking DL-phenylalanine may

improve lower-back pain, migraines, osteoarthritis and rheumatoid arthritis. For pain control or as an antidepressant, doses of 1,000–4,000 mg are required, but must be reached slowly. If you experience a rapid heart beat, agitation, or hyperactivity, reduce or discontinue the DL-phenylalanine. Phenylalanine in any form can increase blood pressure. It can be stimulating and should not be taken past 3:00 in the afternoon.

L-phenylalanine is an important amino acid that is involved in the production of catecholamines which stimulate mental arousal, positive mood, and the fight-or-flight response to stress. It creates [PC1] several neurotransmitters: adrenaline, epinephrine, norepinephrine, and dopamine which help to elevate mood and reduce depression, pain, fatigue, and lethargy. Phenylalanine also curbs appetite. It also forms PEA (phenylethylamine), another energizing brain chemical which is also found in chocolate.

- DLPA, one capsule half an hour before breakfast and if you have no headaches, then another capsule half an hour before lunch time for 3 days. Alternatively, you can get L-tyrosine and take 500mg 3 times a day on an empty stomach (before 4pm).

-L-tyrosine, 1000mg twice daily on an empty stomach (half an hour before eating or two hours after eating). It is a precursor for both dopamine and norepinephrine. It is also necessary for the synthesis of thyroid hormone and adrenaline. It helps to stabilize mood.

GABA

Gamma-Aminobutyric acid (GABA) is our natural valium. Its levels are increased by the ketogenic diet which is why the diet is so useful in anxiety and epilepsy among all the other reasons we reviewed. Those who have a GABA deficiency have a hard time relaxing, they are easily stressed or

overwhelmed, they feel pressured and overworked, their body language is stiff or uptight, they can feel weak or shaky, bothered by loud noises or lots of activity, and may use drugs or sugar or alcohol to relax. A big clue for those who will benefit almost instantly from the ketogenic diet. GABA can be bought in supplements as well and following label instructions will do.

Anti-Candida Protocol

Since the ketogenic diet removes sugar, yeast overgrowth is hardly any issue and we don't do the anti-candida protocol anymore. But this is something you might want to consider if you have any kind of fungal infection or if you have an autism spectrum disorder, a problem with alcohol or sugar addiction, you recently took antibiotics, you have an autoimmune disease, or you have lots of food sensitivities.[13] See the section of "The Candida Epidemic" in the Carbohydrate Chapter. Always complement this protocol with a low carb diet of less than 50 net grams of carbs per day, otherwise it will be hard to see results.

Fluconazole, systemic candida therapy of choice. Always check with your doctor; fluconazole has potential serious side effects.

- For autoimmune disorders and/or severe alterations of your immune system: fluconazole 200mg for 1 week.
- For a candida detox in general: fluconazole 150 mg 1 dose every 3 days, 2-3 doses total.

Nystatin

-1 hour before meals. Alternatively, you can take it 2 hours after meals. You can stop after your yeast overgrowth

symptoms have disappeared. If it gives you nausea, you can take it right before meals.

-Dose: 1/8 teaspoon 3 times a day for 1 week.

1/4 teaspoon 3 times daily for 1 week.

1/2 teaspoon 3 times daily for 1 week.

If your symptoms don't disappear, maintain 1/2 teaspoon 3 times daily for a couple of more weeks. You can take your nystatin with lemon, but do not take it at the same time you are taking your mineral supplements. If you forget one dose, take nystatin immediately when you remember, but do not take 2 doses at the same time.

Nystatin is an anti-fungal that acts only in the gut; it doesn't get reabsorbed in the bloodstream. It is available under prescription or at fludan.com

Probiotics

30 minutes after taking your nystatin, take probiotics. This should be done every time you take nystatin, wait other 30 minutes before you have your meal. Probiotics can be taken for 2 to 6 months depending on your symptoms

Complementary Measures

This is optional; it will depend on your symptoms and/or your dis-ease.

-Colloidal silver, drink it and/or apply topically in fungal skin or nail infections.

-Topical coconut oil in fungal skin or nail infections.

-Wormwood tea. Drink during or after a meal. Make wormwood tea by adding 1 heaped teaspoon of the herb to 1 cup of boiling water and allow to steep for ten to fifteen minutes. You may sweeten the tea with a little bit of xylitol or stevia, and add some peppermint.

Systemic candida therapy - Alternatives to nystatin and fluconazole.

Choose one, that is, do not take the same one for more than 1 month at a time:

-Olive leaf extract. 6 to 10 capsules daily. In powder form, use 3 to 5 g daily, dissolve in water.

-Six to eight drops of Lugol's solution (internal iodine solution) four times a day. Do not take this one for more than 3 weeks at a time.

-Oils of eucalyptus, oregano, thyme, cinnamon, tea tree or neem tree. Of any of these oils, use 1 to 2 drops four times daily.

- Pau d'arco (taheebo or lapacho) Use either extract or make tea: one tablespoon of bark or a heaped teaspoon of powder in a large cup of water. Bring to boil and let simmer or steep for 5 to 15 minutes; drink 3 cups a day. Pau d'arco extract in capsules. Use 3 capsules of extract 3 times daily.

-Wormwood. *Artemisia absinthium*, but also *Artemisia annua* or Sweet Annie can be used. To avoid the bitter taste of *A. absinthium* stir a rounded teaspoon of powder in some cold water and drink immediately. Use a teaspoonful three times daily.

Remember that a low carb diet is fundamental and should always include the bone broth.

To clear nasal congestion, postnasal drip, sinus or even ear problems: put a dot of nystatin powder on your index finger, hold one nostril and sniff gently. Repeat for the other nostril. The number of sniffs, inhales or snizzles[PC2] can be gradually increased to 3 in a row up to three times a day, depending upon how well it is tolerated.

Nystatin powder can be used to treat athlete's foot, nail fungus, and dry skin spots or rashes. The powder or cream can be applied two to three times a day. To make nystatin cream that can be rubbed into the skin, mix one teaspoon of nystatin powder into two teaspoons of a very mild cold cream or a coconut based cream.

Remember that some of these therapies are not suitable for pregnant women.

Mercury Detox Protocol

You'll need at least 6 months before you try this protocol as your gut has to be as healed as possible and you should not have yeast overgrowth issues. The protocol is taken from the Autism Research Institute which provides research, testimonials and videos about heavy metal detox. Although it is not a miraculous treatment, it is worth doing a mercury detox at some point. The supplements involved in the protocol are antioxidants, vitamins and minerals. It is a children's protocol and it has been enormously useful in autoimmune and other conditions where heavy metal toxicity is an issue. Remember, if you have a condition difficult to manage, suspect heavy metal toxicity. This protocol has been used by several people around the world without ill-effects. The protocol involves the over-the-counter chelation product DMSA. Dimercaptosuccinic acid (DMSA) is a compound that

contains sulfur which binds to mercury and takes it out of the body. It is not supposed to cross the blood brain barrier, but in our experience it might, due to Herxheimer reactions like anxiety experienced by some of us.

The FDA has started to go after chelation products since they think that the tonnes of mercury emitted by the industrial complex does not exist. But as The Autism Research Institute disclaimer says[14]:

Disclaimers for parents and family members:

Many families are treating their autistic children with therapies similar to those listed in this monograph without involving a physician or other health care provider. *That most of them do so without any adverse consequences is a testament to the safety of the drugs and supplements used.* However, DMSA, DMPS and some of the supplements present a small but non-zero risk of serious side effects. Life, in general, is a series of risks; the risk of serious side effects can be reduced by careful medical monitoring during treatment.

Keep in mind that the number of medication-related deaths in the U.S. is estimated at over 200,000 a year, making medications the third or fourth leading cause of death and they still have the nerve to go after a harmless sulfur containing compound. Refer to the “Heavy Metals” section of Our Toxic World Chapter for some interesting connections.

Nutrient	Details	Dose	Per day
DMSA	Succimer, Chemet	200mg	Three times (just for the first 3 days of each 14 days cycle)
Vitamin C	Buffered	2-3	Twice

	ascorbic acid powder	grams	
Alpha lipoic acid	Thioctic acid	100mg	Twice
Zinc	Picolinate or citrate	50mg	Once (not with food)
Selenium	Oceanic	200mcg	Once
Vitamin B6	As pyridoxal 5 phosphate	50mg	Once (in the morning)
Vitamin E		1000 IU	Once
Melatonin		1mg	Once (at bedtime)
Taurine		200mg	Twice or three times
Reduced glutathione (or N-acetyl-cysteine 600mgx2)		100mg	Three times

Two-week rotation with three days on DMSA and eleven days off. Take DMSA on Friday, Saturday, and Sunday. Take all of the supplements every day, but only take the DMSA on days one through three of each cycle. You should plan to complete at least six cycles. It is OK to interrupt the cycles for any reason.

You might experience increased anxiety or odd pains when you take DMSA, that is why you do the DMSA days on the weekend.

We also recommend for you to have any silver-mercury amalgam dental fillings replaced. Despite the controversies

around this subject about its safety or lack of it, in our experience the benefits have outweighed the risks. Removing one filling at a time, spaced out with at least a month and making sure your dentist uses a suction system (and spit out all the mercury!) seems to be a good option. For the most part, we had done the mercury detox protocol while having amalgams removed.

Low Dose Doxycycline

- 20 mg twice per day of doxycycline for at least 4 months. The antibiotic doxycycline, at low doses of 20mg twice per day, is an anti-inflammatory. It doesn't have an antibiotic therapeutic effect at those doses. It is used to inhibit the degradation of matrix metalloproteinase proteins which means it helps preserve joint or cartilage tissue. It is used for rheumatoid arthritis or other autoimmune conditions where the degradation of tissue is of concern. Low dose of doxycycline has been approved by the FDA for periodontitis treatment based on research indicating reductions in collagen and matrix degradation, and decreased inflammation in gingival tissue.

Low dose doxycycline has proved to be very useful in acne and rosacea and other inflammatory conditions of the skin.[15] It also has proved useful in bullous dermatoses, neutrophilic diseases, pyoderma gangrenosum, sarcoidosis, aortic aneurysms, cancer metastasis, periodontitis, hidradenitis suppurativa, cardiovascular disease (i.e. heart attack), and autoimmune disorders such as rheumatoid arthritis and scleroderma.[16] All of these are hard core skin problems plus other chronic conditions. The healing effects has to do with its anti-inflammatory properties and its modulation of the immune system.

It is available under prescription or it can be purchased at fludan.com

Poultices and Clays, Activated Charcoal

Comfrey -also called *Symphytum officinale*, knitbone, bruise-wort, wound wort, healing herb and slippery root – has great healing properties that many around the world appreciate. Even though its oral intake has been discouraged due to possible liver toxicity and cancer effects in animal studies, its application as an ointment or a poultice has had amazing effects in sprains, broken bones, wounds, skin problems (dermatitis, eczema, viral skin infections), by promoting fast healing, sometimes in record time! It can also be used as a mouthwash.

For an extra powerful effect, mix with DMSO as follows: Put some comfrey in the herb grinder and powder it. Add hot water until it and mix until becomes a firm paste. Then, in a glass jar, mix it with DMSO rose cream. Apply it on a bandage and attach on the needed area.

A few weeks ago when I had a serious back attack, we made a poultice of comfrey root powder mixed with a bit of warm water and DMSO cream. Put it on a large gauze piece, taped it on the back, and then I taped one of those heat pack things on top of it. Kept it on all day, did the same thing the next day, and boy, did it produce relief! -Laura

Activated charcoal has the ability to absorb and neutralize toxic materials. Even though it is typically used in the emergency rooms to treat poisonings and drug overdoses, very few health practitioners realize that charcoal is the best

single detoxifier for whole-body cleansing. For these purposes the recommendations have been of 20 grams on two consecutive days each week, divided into two or three doses.[17] If it causes constipation, dose needs to be lowered down or more water should be drunk. Supplements and medication should be taken 2 hours away since charcoal doesn't discriminate between them and other poisons.

Natural zeolites (i.e., those found in volcanogenic sedimentary rocks) is a mineral which possesses attractive properties that contribute directly to their use in the extraction of nuclear wastes and the mitigation of radioactive fallout, but also as a dietary supplement for heavy metal detoxification. It also has anti-bacterial properties and it stimulates the immune system. It was used successfully during the Chernobyl nuclear accident. Other edible clays are useful as well. Beware, both activated charcoal and clays will also chelate your supplements.

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[PC1]Isn't adrenaline and epinephrine the same thing?

[PC2]Is snizzels a word? Don't know what it means and can't find it in the dictionary.

Resistance Training

Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it. –*Plato*.

Chronic cardio aerobic exercise is simply bad for your health, period. It stresses your adrenals into fight or flight mode and other than burning you out, it also creates lots of joint problems. People who run marathons and what nots typically have CPK (creatine phosphokinase) blood levels that are high, a marker of muscle damage that is used to detect heart attacks. Excess aerobics causes overtraining and muscle wasting, which later leads to reduction in fat burning. Aerobic exercises increases your bodies' need for oxygen. From running to hours on a treadmill or stationary bike, many aerobic workouts are long and their overall effect on your body is inflammatory. I've seen quite a few people who had a heart attack when they were jogging supposedly "for better health".

In contrast to aerobic exercise, resistance training builds lean mass, but the implications are far more than just that.

Resistance training minimizes and even reverses mitochondrial dysfunction. It also induces mitochondrial biogenesis – a process where new mitochondria are formed within the cell, and it does it not only in the muscles, but in the brain[1], kidney, fat tissue and liver as well.[2] The implications here are enormous! By exercising our muscles, we have the potential to not only reverse aging and brain-related diseases such as dementia which are characterize by mitochondrial dysfunction, but as we saw in the Health Matrix Chapter, mitochondrial dysfunction is the final step in

ALL diseases. In fact, by making new mitochondria, there is a remodeling of entire networks of mitochondria. New mitochondria merge with old ones, leading to elimination of damaged or dysfunctional mitochondria through mitophagy (mitochondrial autophagy). This dynamic process of replacing old unhealthy mitochondria with new healthy mitochondria underscores the enhanced quantity and quality of mitochondria with exercise training.[3]

Autophagy, best known as the body's ability to devour itself, is a process by which a cell degrades damaged or unhealthy parts of itself to produce energy. Activation of autophagy contributes to health benefits such as protection against cancer, neurodegenerative diseases, aging and viral infections.

Autophagy functions as an innate immunity, playing a role in lifespan extension.[4] Autophagy is promoted by ketosis, exercise, cold adaptation.

While there are benefits with aerobic exercise training in mitochondrial function, these typically disappear and reverse with detraining. Furthermore, aerobic training has been shown to not change the number of mitochondrial DNA (mtDNA). On the other hand, resistance training activates proliferation of new cells in the muscle as a consequence of fiber injury, and the level of mutations in mtDNA in these new cells is lower than the one of already present muscle fiber cells.[5] Hence, when there is fusion between the new and the old, there is a shift towards the new low level in mutation in mtDNA and mitophagy of the old dysfunctional ones. This leads to mitochondrial healing. Typically 12 to 14 weeks are needed to see these results even though we have noticed positive results with the first few sessions. Others have noticed results in their muscle mass with the ketogenic diet alone. So much for muscle wasting on protein restriction on a ketogenic diet! In fact, as long as there is optimized mineral

intake (bone broth!), a constraint of protein to 15%-25% of daily energy expenditure allowed unimpaired endurance performance despite nutritional ketosis.[6] This translates into 1.5 grams of protein per kilogram of ideal weight per day.

As far as resistance training goes, there are several ways to do it. But as a general rule, brief bouts of peak anaerobic exertion are far better for your overall health, including the one of your cardiopulmonary system. It is important to remember that more is not better when it comes to resistance training, it is the quality that makes the whole difference.

The muscles in the abdomen (rectus and transverse abdominis, internal and external obliques, and pyrimidalis) are the foundation for nearly every movement you do. Try to make an effort to strengthen and tighten your abdominals when you do resistance training.

Exercise no more than 20 minutes and focus on brief bouts of significant anaerobic exertion, interspersed with brief periods of recovery at a slower pace that will allow you to return to resting heart rate. It can be done using kettle-bells, weights, or elastic bands. Following these brief bouts of significant anaerobic exertion, critical building and rebuilding mechanisms takes place over the next day or two. So after 20 minutes of brief bouts of exertion plus recovery time in between, allow at least 2 days of down time to recover and build-up your strength and muscles. Drink your bone broth within an hour before or after exercising, as it will help you preserve muscle mass.

Just how much weight should you lift? Well, that depends on each person. But maximum effort or at least go for an 8 effort on a 10 scale. Keep in mind Mark Sisson's tip as well[7]:

When you exercise a muscle to short-term exhaustion at 12 reps or deliver a max effort for 10 pull-ups, you'd be

surprised what your body can do two minutes later if you repeat the effort.

If you don't have access to gym equipment, you can get a set of resistant bands whose tension can provide from a few pounds up to 312 pounds depending on the type of set you get. You can carry it easily anywhere you go and depending on how creative you are, you can make up over 100 different muscle work outs with it.

If you exercise without craving or eating carbohydrates, that means you are probably ketoadapted. If you can exercise while fasting, you are most likely ketoadapted. When you use ketones as an energy fuel from fats, you rely on a steady and reliable energy source that stabilizes your energy levels and mood and doesn't make you crave sugar after working out. That means you have effectively reprogrammed your body's metabolism, switching to a fat burning one.

You are more likely to endure resistance training or any activity when you are ketoadapted. Not only do you use glycogen stored in muscles, you also burn fat for energy that is both stored and not stored in your tissues.

Myth: You need carbohydrates to fuel exercise

Facts: Our bodies store over 40,000 calories of fat, but we can only store 2,000 calories of carbs. This is why, when "carb-burning," marathoners "hit-the-wall" and constantly need gel packs and Gatorade. They are still low in performance at the end of races, too, due to the depletion of carbs in their muscles and liver.

Carb-fueling tactics and sugar-based fuel sources create a

body that fuels on carbs while simultaneously inhibits fat burning. Dr. Volek and Dr. Phinney state in *The Art and Science of Low Carbohydrate Performance*, “This suppression of fat burning lasts for days after carbs are consumed, not just the few hours following their digestion.”

Even athletes who have very little body fat are able to work out twenty times longer at their max level. Vigorous exercise fueled on carbs depletes the athlete in a few hours, but by burning fat for fuel, you can exercise for days. [...]

Benefits of a Keto-Adapted Diet When Exercising

It improves insulin sensitivity and speeds recovery time between training sessions. Low-carb diets are anti-inflammatory. This produces less oxidative stress while exercising, which speeds recovery time between exercise sessions. This is why I was able to run every day while training for my marathons.

It spares protein from being oxidized, which preserves muscle. Branched-chain amino acids (BCAA) are considered essential because your body can't make them, so you need to consume them for proper muscle building and repair (as well replenishing red blood cells). What I found so interesting is that BCAA oxidation rates usually rise with exercise, which means you need more if you are an athlete. But in keto-adapted athletes, ketones are burned in place of BCAA. Critics of low-carb diets claim that you need insulin to grow muscles; however, in a well-designed low-carb, high-fat diet there is less protein oxidation and double the amount of fat oxidation, which leaves your muscles in place while all you burn is fat! [...]

It decreases the build up of lactate, and therefore helps control pH and respiratory function. A myth of low-carb diets is that it puts you in a state of acidosis. Dr. Volek and Dr. Phinney point out that “This stems from the unfortunate fact that many doctors confuse nutritional ketosis (blood ketones at 1-3 millimolar) with keto-acidosis (blood ketones greater than 20 millimolar). In nutritional ketosis, blood pH at rest stays normal, plus sharp drops in pH due to CO₂ and lactate buildup during exercise are restrained. By contrast, in keto-acidosis, blood pH is driven abnormally low by the 10 -fold greater buildup of ketones. Suggesting these 2 states are similar is like equating a gentle rain with a flood because they both involve water.” [...]

NUTRIENT TIMING TIP: The best time to burn fat is when performing aerobic exercise first thing in the morning on an empty stomach and after drinking a large glass of water, or a little coffee, in order to avoid dehydration. You burn 300% more body fat in the morning on an empty stomach than at any other time in the day because your body does not have any glycogen or stored carbohydrates/ sugar in the liver to burn. When this happens, your body has to go directly into the fat stores in order to get the energy necessary to complete the activity. You also increase your human growth hormone levels, which is the fat-burning hormone . The human growth hormone and insulin counteract each other. If one is high, the other is low – like a see -saw. So if you eat something , especially carbohydrates , before a workout, you will be spiking your insulin levels, meaning your growth hormone levels will be low. .” [...]

The following is an example of a good workout schedule:
WAKE UP (AFTER 8 HOURS OF RESTED SLEEP) Take the

recommended morning supplements (including amino acid supplements) with 24 oz of water (green tea is best).

EXERCISE: Workout on an empty stomach.

Warm-Up for 5 minutes, then jog for 5 minutes Do 10 push-ups, then 10 sit-ups 9 push-ups, 9 sit-ups 8 push-ups, 8 sit-ups Repeat with 7, 6, 5, etc. all the way down to 1 push-up and 1 sit-up Jog for another 5 minutes Do 10 triceps dips, then 10 bicep curls 9 triceps dips, 9 bicep curls Repeat with 8, 7, 6, etc. all the way down to 1 tricep dip and 1 bicep curl Jog for another 5 minutes Do 10 squats (Advanced: hold weights in each hand), then 10 jumping jacks 9 squats, 9 jumping jacks Repeat with 8, 7, 6, etc. all the way down to 1 squat and 1 jumping jack (Repeat whole cycle if you are advanced) WALK for a cool down and stretch! Supplement with branch chain amino acids if desired. 15 MINUTES TO 1 HOUR BEFORE BREAKFAST: Take 2 grams of L-glutamine and one capsule of probiotics with bifidobacteria.

Emmerich, Maria , Keto-Adapted

[1] Steiner JL, Murphy EA, McClellan JL et al. Exercise training increases mitochondrial biogenesis in the brain. *J Appl Physiol*. 2011 Oct;111(4):1066-71

[2] Little JP, Safdar A, et al. Skeletal muscle and beyond: the role of exercise as a mediator of systemic mitochondrial biogenesis. *Appl Physiol Nutr Metab*. 2011 Oct;36(5):598-607.

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[4] He C, Bassik MC, Moresi V. et al. Exercise-induced BCL2-regulated autophagy is required for muscle glucose homeostasis. *Nature*. 2012 Jan 18;481(7382):511-5

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[6] Phinney SD. Ketogenic diets and physical performance. *Nutr Metab (Lond)*. 2004 Aug 17;1(1):2.

[7] Mark Sisson. *The Primal Blueprint*. Primal Nutrition, Inc.; 1 edition (June 1, 2009).

Well, we're each different, but I'll tell you what happened to me. Your mileage may vary!

I have been working out (the resistance training kind of thing) for years. Before the Paleo diet, I hit a certain amount of weight on the various exercises I do, and I never went any higher.

With Paleo, I hit a new higher plateau, and then it stopped. With the Ketogenic Diet, I have gone up another level very quickly on a few exercises. One specifically is the hamstrings. I could NEVER get over that plateau, until the other day on the Ketogenic diet. Suddenly, I added 10 lbs like it was nothing. On the leg extension (quadriceps), I can't now lift over twice my own weight. I couldn't do that even when I used to be a distance runner w/weight training (but on a high-carb diet, of course).

Like I said, your results may vary, but I think if you're not feeling great while working out, it's best to just take it slowly - and be patient! Your body may be repairing/cleaning itself in various ways. If I feel really tired or weak, I'll even skip my workout and try to do it the next day if I feel better.

I also recently found that workouts every 2 days are a bit too much for me. If I do my normal intense workout on, say,

Mondays and Thursdays, it works very well. But every 2 days doesn't seem to allow for enough "regeneration time". Anywho, even in week #4 on the Ketogenic Diet, I'm still noticing changes as the process continues. So, it seems these things can take some time. -Mr.Scott

Good Night Sleep

In order to have a restorative good night sleep, what matters is completing a number of sleep cycles more than the total sleep time. Each cycle has 5 different phases which exhibit specific brain-wave patterns. As Dr. Gregg D. Jacobs explains:

Every 60-100 minutes we go through a cycle of four stages of sleep

-Stage 1 is a drowsy, relaxed state between being awake and sleeping - breathing slows, muscles relax, heart rate drops.

- Stage 2 is slightly deeper sleep - you may feel awake and this means that, on many nights, you may be asleep and not know it

-Stage 3 and Stage 4, or Deep Sleep - it is very hard to wake up from Deep Sleep because this is when there is the lowest amount of activity in your body.

-After Deep Sleep, we go back to Stage 2 for a few minutes, and then enter Dream Sleep - also called REM (rapid eye movement) sleep - which, as its name suggests, is when you dream.

In a full sleep cycle, a person goes through all the stages of sleep from one to four, then back down through stages three and two, before entering dream sleep.

If you wake up in the middle of the night after having a couple of cycles, you might stay awake for 2 hours before being sleepy again and do a few more cycles before you start the day. This is what is known as polyphasic sleep and it is not pathological (i.e. insomnia). Though, you might wake up later than you need to in order to do a few more cycles before you go to work or do what you have to do. The trick for sleeping consecutively through the night – monophasic sleeping – is to wake up at 5 am and then your body will adjust to have all its cycles consecutively.

Moreover, sleeping should respect our natural circadian rhythm – our body's internal clock – and its restorative hormones. So if you go to sleep way too late, sleeping in to catch-up with the number of hours you usually sleep might disrupt your cortisol, growth hormone and melatonin levels. This is why loss of sleep, even for a single night, increases inflammation in the body (Miyata, 2010).

Whenever you feel fatigued or need to catch up on non-REM sleep cycle deficiencies, taking brief naps of no more than 20 to 30 minutes during the day, is the key that will help you feel refreshed and restore your brain's lack of non-REM sleep deficiencies.

Melatonin is produced mainly by the pineal gland in the brain and helps regulate our bodies' circadian rhythm. Melatonin is inhibited by light and it is enhanced by darkness, making artificial light its worst enemy. Exposure to electrical light

between dusk and bedtime strongly suppresses melatonin levels and may impact physiologic processes regulated by melatonin signaling.

Melatonin is particularly susceptible to blue light which is sold now by the billions in computers, televisions, and cellphones since they are more energy-efficient. The light emitted by older sources (i.e. incandescent bulbs), contains more red wavelengths, but is increasingly replaced. A 1 hour light exposure of an overhead fluorescent fixture can delay melatonin production and sleep by up to 2 hours. In addition to that, short nights with artificial light suppress our master hormone leptin, leading to all kinds of imbalances including carb cravings.

Melatonin helps regulate other body hormones and it is a powerful antioxidant. Low melatonin production leaves you susceptible to inflammation, accelerated aging, depression and mood problems. People with lower levels of melatonin have lower immune/defense function, less antioxidant activity and accelerated cancer cell proliferation, and they also tend to have more unhealthy imbalances in gut bacteria.

Melatonin is produced from the brain chemical serotonin and melatonin's immediate precursor -acetylserotonin - stimulates the same circuits in the brain activated by the growth factor BDNF (brain-derived neurotrophic factor), our brain's super fertilizer. A lack of BDNF, which pushes brain cells to grow and helps them resist stress, is behind depression and several neurodegenerative diseases. Less melatonin production is something you definitely want to avoid! As anthropologist Teresa S.Wiley says:

If the NIH has run most of the studies that provide the evidence that depression, obesity, heart disease, and cancer can be prevented in a great many cases by sleeping more and turning the lights off, why have they kept us in the dark? Why do they continue to insist high-carbohydrate diets and exercise will cure us? Are they really trying to kill us? [...]

Your body translates long hours of artificial light into summertime. Because it instinctively knows that summer comes before winter, and that winter means no available food, you begin to crave carbohydrates so you can store fat for a time when food is scarce and you should be hibernating. [...]

With artificial light, we've created an endless summer, and altered this rhythm and in turn we've altered our hormonal balance. Since we evolved and adapted to this new rhythm, when we are exposed to heat, sugar, and light for twelve months of the year, we naturally experience accelerated biological time; which ultimately is the reason for cancer, high levels of insulin that lead to heart disease and diabetes. "Because once you've lost the rhythm, you're out of step and you lose your balance. Then comes the fall - from Grace.

Wiley explains how cells called cryptochromes in our bloodstream pick up the blue spectrum of the light through our skin and that light energy can even keep pathological gut bacteria thriving. She reports of an experiment where a fiber-optic cable behind the knee of a study subject, which illuminated a patch of skin no bigger than the size of a quarter, affected this subject's melatonin secretion. He was

otherwise in complete darkness, yet this small amount of light affected him. This goes to show that wearing night eye covers would simply not do! And most people even sleep with all-night TV, street lights coming through their windows and electronic devices in their rooms including their alarm clocks.

In short, sleeping in total darkness is essential if we are to enhance naturally our bodies' secretion of melatonin during the night, and the darker, the better. The room where you sleep has to be completely dark to the point of not been able to see anything. If lights seep underneath your door, put a towel along the base. There are actually special cushions you can put in the door's lower gap. Cover your electric clock radio with something or get an old type one. Alarm clocks which light up only with movement are also available. Remember, even the smallest light can decrease melatonin secretion, even if you're not able to see it with your own eyes. There are also blackout shades or drapes you can use for the windows. Get rid or cover any light coming from electronic devices. You'll be surprised how much better you'll sleep after a period of adjustment. Some have reported restlessness or vivid dreams like the ones reported when you first take melatonin supplementation. After a few days of adaptation, the result is a good restorative sleep.

If the above doesn't quite do it, then do the following:

- 1) Lie down to go to sleep only when you are sleepy.
- 2) Do not use your bed for anything except sleep; that is, do not read, watch television, eat, or worry in bed. Sexual activity is the only exception to this rule. On such occasions, the instructions are to be followed afterwards, when you intend to go to sleep.

- 3) If you find yourself unable to fall asleep, get up and go into another room. Stay up as long as you wish and then return to the bedroom to sleep in total darkness. Although we do not want you to watch the clock, we want you to get out of bed if you do not fall asleep immediately. Remember the goal is to associate your bed with falling asleep quickly! If you are in bed more than about 10 minutes without falling asleep and have not gotten up, you are not following this instruction.
- 4) If you still cannot fall asleep, repeat step 3. Do this as often as is necessary throughout the night.
- 5) Set your alarm and get up at the same time every morning irrespective of how much sleep you got during the night. This will help your body acquire a consistent sleep rhythm.
- 6) Do not nap during the day.

These 6 steps to falling asleep fast is extracted from Jeremy Dean's PsyBlog (Dean, 2011) and is based on stimulus control therapy.

Complementary therapies

Kinesio Tape

The medical or kinesio tape is used around and over muscles to reduce inflammation and to relax and support muscles and joints in their movement, 24 hours a day. It is worn for several consecutive days (4 days) and it has several benefits such as correcting muscle function, improved circulation, pain relief, and repositioning of a subluxed joint. Other than relieving pain, it improves lymphatic drainage by a microscopic lifting effect of the skin. This results in decreased pressure and irritation for neural and sensory receptors which have to do

with pain. The kinesio tape has been used in hundreds of medical conditions and it is also ideal for rehabilitation such as follow-up treatment of injuries, corrections of posture, treatment of inflammatory conditions, headaches, PMS. It is also widely used among professional athletes and sports people.

I suffered from "frozen shoulder syndrome" at several points after my surgery and even heavy duty pain killers didn't help, but after taping, the pain reduce about 25% within half an hour, and 50% within a few hours, and 75% in one day, and was gone completely in three days. I retaped a couple times just to make sure, and now haven't had a minute's trouble for well over six months.

In a pinch, you can use stretchy bandaging tape but it is a good idea to try to get some of the tape that is designed for this. Just search on the net for "medical taping" and see if you can find a more or less local source for it. -Laura.

There are several videos available online on how to put the tape depending on each condition. For instance: frozen shoulder, lower back pain, tennis elbow, plantar fasciitis, knee problems, ankle sprains and so forth. Just search for kinesiology taping. It is really a life saver!

Indications for Medical Taping[7]:

- alleviate pain
- reduce inflammation
- decrease lymph edema
- decrease hematoma
- stimulate hypotonic muscles
- inhibit hypertonic muscles
- protect muscles against overexertion

- protect joints
- influence range of motion
- improve proprioception
 - correct posture
 - correct fascia

[1] cbtforinsomnia.com

[2] Irwin MR, Wang M, Ribeiro D. et al. Sleep loss activates cellular inflammatory signaling. *Biol Psychiatry*. 2008 Sep 15;64(6):538-40.

[3] Gooley JJ, Chamberlain K. et al. Exposure to room light before bedtime suppresses melatonin onset and shortens melatonin duration in humans. *J Clin Endocrinol Metab*. 2011 Mar;96(3):E463-72.

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[7] medicaltaping.com

Far Infrared Sauna

Far infrared (FIR) Saunas are the best way to get rid of toxic chemicals such as pesticides, heavy metals and hydrocarbon residues. Normal saunas usually make people feel sick, dizzy and miserable. But FIR saunas are safe and tolerable, using

heat energy to penetrate tissues, mobilizing chemicals stored in fat, directly into sweat.

Far infrared waves speed removal of toxins from the body.

When far infrared waves are applied, large water molecules vibrate and breakdown the ion bond to toxins, releasing them so they can be then cleared out from the cell. Far infrared heat also expands capillaries and skin pores to expel toxins from the body. This means that lower temperatures can be used and chemicals won't float throughout your bloodstream, but go out into the sweat. With periodic use of a FIR sauna, toxins [PC1] get mobilized from the organs to the fat under your skin, where FIR sauna works.

Those who are particularly incapacitated by their disease will benefit the most from FIR saunas, some need a detox solution that will restore their health after a life-long toxicity lifestyle.

People who have had significant toxicity exposure have benefited miraculously from FIR saunas. For instance, clean-up workers after the Gulf Oil spill who started with multiple chemical sensitivities and strange neurological syndromes recovered after FIR sauna treatments at Dr. Rea's

Environmental Health Center.[1]

Typically, people who have congestive heart failure and who cannot tolerate normal saunas (it is actually contraindicated for them) have no choice but to receive mainstream treatment with a dire prognosis of a few years life-expectancy. They can only hope to be candidates for heart transplantation, and then, making it to the top of the heart transplantation waiting list is another story. In the mean time, all kinds of technologies with artificial hearts or support systems are being developed that gives them hope. But what most people don't know is that toxicity plays a crucial role in heart function deterioration as well as cardiovascular disease in general. Moreover, research has proved that FIR saunas have proved life-saving in these

patients when nothing else was left to be done, changing thereby their fatal destinies. Yes, late stage heart failure patients usually tolerate 15 minutes of FIR sauna at 60 degrees Celsius (140 F) five times a week without problems - and with life-saving benefits![2] Not only that, it also improved symptoms in severe peripheral vascular disease (think of someone whose circulation is so bad that often amputation is the only treatment), it also served as a treatment for high blood pressure, diabetes, autonomic nervous system imbalances, and chronic pulmonary lung obstruction where environmental pollution is likely the key.

The energy from far infrared rays is a spectrum of energy from the sun and those most vital to healing are those in the 4-14 microns in the FIR range. According to Dr. Sherry Rogers[3]:

Far infrared wavelengths have other beneficial properties. They lower lactic acid (the acid that accumulates and causes pain in muscles when you have overdone during exercising), stimulate endorphins or happy hormones of the brain, and kill organisms like bacteria and parasites. More important, they penetrate tissues, detoxify cells by vibrating ionic bonds, stop swelling, improve lymphatic flow and blood circulation, and attract calcium to cell membranes where it is needed for healing. [...]

[PC2] It should not surprise you by now that the mysterious joint pain in war veterans exposed to Agent Orange also disappeared, as did a host of other pain syndromes. Schnare of the U.S. EPA (Environmental Protection Agency) also showed that not only did sauna reduce body levels of HCB (hexachlorobenzene) and PCBs (polychlorinated biphenyls) in electrical workers,

for example, but it did this even though the men were continually exposed at work.

This is important because it means that if your livelihood depends on an occupation with continual exposures, you still have a chance of being able to tolerate it more safely, as long as you are reducing chemicals faster than you are taking them in. And let's face it. Most occupations have their specific toxins. Also this could allow tolerance of poorly tolerated implanted items that we would like to keep, like root canals and artificial joints.

Schnare also reviewed different types of workers, drug users, victims of accidental ingestions, and those poisoned by a variety of environmental chemicals; all recovered with sauna detoxification [...] The bottom line is that sweat is the only proven method for getting the most damaging toxins out of the body. There are no drugs, no surgery, no chelation, nor other detoxification methods with before and after measurements proving that unwanted chemicals like PCBs and pesticides were eliminated.

Not only do FIR saunas improve brain function, they actually improve the function of neurons that have been damaged by toxins.[4] It has proved effective in chronic fatigue syndrome[5], rheumatoid arthritis, ankylosing spondylitis[6], chronic pain[7], and depression.[8] I'll say, if you are starting to detox, you might be highly interested in investing in a FIR sauna as it really makes a whole lot of difference in the journey towards health recovery.

We recommend a FIR blanket sauna since it is not only more cost effective and uses less electrical current, but it also ensures that your whole body is exposed. You can watch a movie or listen to an audio while detoxing and healing.

[1] ehcd.com

[2] Miyata M, Tei C. Waon therapy for cardiovascular disease: innovative therapy for the 21st century. *Circ J*. 2010

Apr;74(4):617-21.

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[PC1]This sentence can be clarified.

[PC2]Check this quote to see if typo is in original

Each person is different, and some may not tolerate long stretches of time inside the blanket. But when one is toxic 2 hours everyday is appropriate, you just have to get there progressively. That is, the first time you get into the FIR sauna

blanket; do so for 15 to 30 minutes at 60 degrees Celsius (140 F). Build up progressively each session according to your tolerance level. Never over exert yourself; patience is needed when it comes to detoxification. Make sure to wash thoroughly with soap to remove the toxins from your skin. Keep a towel close to you so you can dry up the sweat. If you don't sweat at the beginning, be patient, you'll eventually do as you detoxify.

Take at least the Basic Detox Cocktail explained in the Supplements Chapter: a teaspoon of vitamin C, N-acetylcysteine as a precursor of glutathione and magnesium before you go in. You can take other supplements you might take later or throughout the day. Make sure you drink enough water and also take your bone broth to help you restore minerals.

Cold Adaptation

Cold showers, iced baths, exposing yourself to temperatures of minus 100 degrees Celsius?! You've got to be kidding!! But no, actually, you'll be surprised how healthy Siberian people keep themselves by diving in iced water in the middle winter in their swimsuits. And you don't necessarily have to be Wim Holf also known as Iceman, who can withstand long periods of extreme cold that would otherwise kill a non cold adapted person. Ice Man has had bacterial endotoxins injected in his blood with no problem at all, any other person would have definitely fallen sick.¹ But there is more background to the story and several options that might make even the most cold-intolerant of you consider cold therapies for better health.

¹ Kox M, Stoffels M, et al. The influence of concentration/meditation on autonomic nervous system activity and the innate immune response: a case study. *Psychosom Med.* 2012 Jun;74(5):489-94.

As it happens, the right room temperature plays a crucial role in a good night sleep, with 16 – 19 degrees Celsius being the ideal (60 to 68 F).² Those who have trouble sleeping, usually have a warmer body temperature than normal sleepers just before going to bed.³ Just imagine yourself cozying up underneath your blankets and sleeping like a baby.

You may have heard of a crazy person or two who swears by cold showers to the point that they will do them every single day in the middle of the cruelest winter. Well, it seems they might not be that crazy after all. Cold showers are linked with better immune system function, less depression, better blood circulation, increased wellbeing, better skin and hair and improved metabolism among others. On the other hand we know that high temperatures disrupt molecules and denatures proteins, think of cooking meat in order to pre-digest it! Life at higher temperatures leads to greater accumulation of irreversible damage that causes death.⁴ And it is a diet rich in protein that raises your temperature the best. Eating lots of protein will also increase your glycation, oxidative damage and IGF-1 as well; so remember to moderate your protein consumption.

What is more, exposure to cold naturally stimulates the production of brown fat also known as Brown Adipose Tissue (BAT). BAT is considered to be a highly specialized tissue

² Onen SH, Onen F. et al. [Prevention and treatment of sleep disorders through regulation] of sleeping habits]. *Presse Med.* 1994 Mar 12;23(10):485-9.

³ Gradisar M, Lack L, et al. Do chronic primary insomniacs have impaired heat loss when attempting sleep? *Am J Physiol Regul Integr Comp Physiol.* 2006 Apr;290(4):R1115-21.

⁴ Piper MD, Mair W, Partridge L. Counting the calories: the role of specific nutrients in extension of life span by food restriction. *J Gerontol A Biol Sci Med Sci.* 2005 May;60(5):549-55.

whose function is to produce heat (ATP) to warm us up. Babies have it to keep them warm and by adulthood none is left. Scientists thought that we didn't have any BAT at all, that is, until small pockets of it were found in the upper back, side of the neck, along the spine and in the dip between the collarbone and shoulder. It seems you can only activate your BAT by cold exposure and it derives from muscle-like cells.

The reason it is called brown is due to the fact that it is loaded with healthy mitochondria which contain iron, giving the fat a reddish brown color. BAT gets activated with cold temperatures so it will burn fat to keep us warm and as a byproduct it produces a whole load of healthy mitochondria. The physiological mechanisms involve our leptin hormone and the hypothalamus in the brain and it is also related to hibernation in mammals, where they fatten up for winter time to keep warm, but lose it quickly without life-long body fat retention⁵ In fact, our master hormone leptin has a fundamental role in the regulation of cold adaptation so we can better cope with environmental temperature changes.⁶ Furthermore, cold temperatures help reset our leptin hormone.

White adipose tissue (WAT) – which is our normal fat – also has its mitochondria. Nowadays most of it is dysfunctional with our best chance to heal it through ketosis and resistance training and cold adaptation. Mitochondria in fat cells have

⁵ Cannon B. and Nedergaard J. Brown Adipose Tissue: Function and Physiological Significance. *Physiol Rev* January 1, 2004 vol. 84 no. 1 277-359.

⁶ Yang J, Bromage T.G. et al. Functional evolution of leptin of *Ochotona curzoniae* in adaptive thermogenesis driven by cold environmental stress. *PLoS One*. 2011;6(6):e19833.

privileged central control points to many metabolic pathways. WAT or individual fat cells containing dysfunctional mitochondrial components have the potential to reprogram multiple metabolic pathways that will eventually impact on how we regulate blood sugar levels at the whole-body level.⁷ This further expands the view of the role of our mitochondria beyond their functions in each individual cell where they are located. Our mitochondria have an impact in our whole body. What alters your mitochondrial function in your fat, can ultimately affect your insulin sensitivity. Healing your mitochondria in your body has a profound impact upon your whole metabolism.

Moreover, who knows what your fat cells can do with healthy mitochondria.

Quote *Deep Nutrition: Why Your Genes Need Traditional Food* by Catherine Shanahan, MD and Luke Shanahan⁸

Aside from acting as simple mechanical insulation and cushioning, body fat generates chemicals required for sexual development and reproduction, immune defense, blood clotting, circadian rhythm, and even mood and concentration. [...]

Distorted Fats Damage Enzymes and Lead to Cellular Death

[...] The more distorted fat you eat, the more inflammation you're fighting against. Trans fat reduces your ability to

⁷ Kusminski CM, Scherer PE. Mitochondrial dysfunction in white adipose tissue. *Trends Endocrinol Metab.* 2012 Sep;23(9):435-43.

⁸ Catherine and Luke Shanahan. *Deep Nutrition: Why Your Genes Need Traditional Food*. Big Box Books; First Edition edition (November 14, 2008)

metabolize the saturated and essential fatty acids that you need to be healthy, so eating trans fat can initiate a vicious cycle. The Nurses' Health Study showed that a mere two percent increase in trans fat consumption correlated with a 40 percent increase in insulin resistance and diabetes. Once you develop diabetes, your metabolism is deeply committed to converting as many calories as it can into fat. Given the power of unnatural fat to disturb metabolism, it's no wonder the advice to avoid healthy, natural fat sets us up to fail.

To successfully avoid eating oxidized fats, you must avoid all foods containing vegetable oils. [...]

High fructose corn syrup can make it practically impossible for you to normalize your weight. We've all heard that when bears need to fatten up for winter, they eat berries. It turns out that fructose sugar (in fruit, fruit juice, soda, and more) sends especially powerful fat-building signals by switching on liver enzymes for converting sugars to fat. Since most of the food you eat gets sent to the liver first, eating fructose effectively traps dietary carbohydrates in your liver and converts them to fat, preventing them from ever making it to muscle tissue where they could be burned during exercise.

So fructose-containing foods can make you pack on the pounds, but there's really no sugar that's good for you[...]

Because carbohydrates in your food are converted into sugars, a diet high in pastas, breads, and so on, is inherently pro-inflammatory as well. Worse, these starchy foods are so bereft of vitamins and other antioxidants that building a diet around them can make it hard for your body to control oxidation reactions once they start. This puts you deeper into a pro-

inflammatory state.[...]

Fat Grows from Stem Cells

You've probably heard of stem cells, immature cells derived from embryos with the potential to grow replacement parts for any organ. These are the cells you've seen researchers use to grow ears on the back of mice. Many believe stem cells hold the cure for Alzheimer's, Parkinson's, and a host of other currently incurable diseases, and someday they may. But if you want to reshape your body, harnessing stem cell versatility can help you achieve that goal today.

One of the most frustrating things about fat is its ability to seemingly appear from nowhere. It's really coming from stem cells. When you eat sugar, starch, and trans fat without exercising your body will churn out new fat cells like a termite queen producing eggs. When stem cells turn into fat cells and grow plumper, you grow plumper too.

One reason diets fail is that cutting back on calories without changing any other habits sends precisely the wrong message. The body presumes that the relative scarcity of food, in combination with little activity, must mean food has become so scarce you've given up looking for more. If it has the slightest chance to store surplus energy as fat, the panicked body reasons it had better do so. Under these circumstances, stem cells stand at the ready to convert themselves into more energy-storing fat cells. Frightening our stem cells into turning into fat cells is exactly the wrong thing to do. Instead, we should capitalize on the stem cell's protean nature and convince it to turn into a kind of cell we want.

Like what, you say? Like muscle, blood vessel, nerve and bone. What's even more remarkable than stem cell versatility is the fact that grown-up fat cells seem capable of changing their identity almost as readily as stem cells can. That means you don't need to starve to get rid of all that flab; it can be transformed into the healthy tissues of a brand new beautiful you.

Fat Can Transform Back into Stem Cells, and Other Types of Cells

You might find this hard to believe, but fat cells require constant attention to maintain their girth. Many people who have tried to improve their looks by having fat injected into their lips and cheeks have seen their enhancement melt away when the transplanted fat cells refused to flourish in their new locations. When researchers investigated this phenomenon, they found that not only had the once-plump cells slimmed down to fusiform slivers, some had changed into an entirely different type of cell, called a fibrocyte, the type of cell most prevalent in the tissues into which the fat cells had been injected. Apparently, fibrocytes surrounding the transplanted fat cells refused to make the introduced cells feel at home (by producing the necessary fat-sustaining hormones). Without these hormones, the receptors and enzymes that enable fat cells to do their thing – ingest sugar and fat and grow pudgy – began to shut down. Shrinking under the peer pressure of a hormonally cold shoulder, the unwelcome guests simply conformed to the rules of the neighborhood and reinvented themselves as fibrocytes.

You may be able to coerce fat cells into becoming just about anything you want. Fat tissue belongs to a class of body

material called connective tissue, which collectively includes collagen, bone, muscle, blood, and associated cells. Some cell biologists now believe that one type of connective tissue cell permanently retains its ability to transform into another cell type whenever chemical signals instruct it to do so. So muscle cells can become fat cells: fat can become bone; and then a bone cell can change back to a fat cell again. This process is termed transdifferentiation. [...]

All this suggests that a fat cell on your thigh today might once have been a muscle, bone, or skin cell, living someplace else in your body. But why, you may wonder, would any cell decide to pack its bags and head to an entirely new location? It would if it received a chemical memo saying that its service in its current tissue is no longer required, and that it should head to its new assignment in the fat department.

[...] Exercise is important because it generates signals to transdifferentiate your fat.

Exercise works at least three ways: 1) It increases insulin sensitivity, so you need less insulin to get sugar out of the bloodstream. This allows your insulin levels to drop, which tells your fat cells to slow down the conversion of sugar into more fat. 2) It reduces the stress hormone cortisol. Cortisol packs fat around organs (as opposed to under the skin) where it produces lots of pro-inflammatory chemicals, which in turn tell the body to produce still more fat. And 3) Exercise makes blood sugar levels drop, and with it the potential for AGEs and the sugar-induced inflammation that blocks healthy body-building signals.

[...] This discovery that so many cellular transformations are

occurring has unsettled the medical community, which must now abandon the old notion of a cell as something created to be a lifelong member of one particular cellular species. This model grossly underestimates the cell's protean nature. Just as genes change in reaction to what we eat, think, and do, cells change their internal construction too, dedifferentiating from a mature phase back into the immature, pluripotent stage of cell life. And then, from the pluripotent stage, they can be instructed to redifferentiate back into the original, or even be recruited into another type of tissue altogether.

When you first start cold adapting, the best thing is to submerge your face in cold water and then in iced-cold water. This has a profound relaxing effect because it activates your scuba diving reflex, which is an enhanced response from our dear vagus nerve.

Then you might want to lower the temperatures of your showers slowly but surely. If you just lower the temperature right away, you'll experience shaking, increased heart rate and rapid breathing. Eventually your body gets used and stops shaking the more you do it. Over time, you get so used to it that cold ice packs are tried in the neck, torso, abdomen. Eventually you can try a few minutes in an iced-bath twice per week and on it goes staying longer according to your tolerance.

Every day for a week so far, I've been waking up around 8:00 for a big breakfast, two tall glasses of ice water, and cold immersion. I've been zero carbs most days, and never exceeding 10 grams. No snacking at all. No sugar at all. Two

meals only. Dinner as close to 8:00p.m. as possible and at least 4 hours to digest before sleep.

Day 1: face dip 3 times for the length of a held breath in cold ice water. Cold shower (3/4ths of the way to full cold) at night after my "pauper's dinner."

Day 2: Face dip same as before + cold shower in the morning and at night.

Day 3: Face dip, morning cold shower (nearly to full cold) for 10-12 minutes or so. Same at night at full cold.

Day 4: Longer morning shower (15 min), cold full body tub soak at night (3/4ths to coldest)

Day 5: same as 4, with a longer and colder soak at night.

Day 6: Morning and night showers at full cold.

Next I will increase cold soaks to 45 minutes and begin adding ice. This gets increasingly energizing as I go along. I find myself craving the nighttime soaks, especially after about day 4 when I started to feel warm a lot of the time in my normal environment. I have always slept with heavy blanket cover, and the blanket has come off at night. My sleep is definitely improving. I have been running nonstop this week, and I have been able to keep a calm about me that I don't often muster in such circumstances. Also in my daily interactions I have noticed a subtle clarity increase in which it is a bit easier to turn off my neurotic mind and just be in the moment, not something I am certain is connect to the cold treatment. Going outside in chill with less clothing has been easier and easier (never liked that one) -

SethianSeth

Conclusion

You ought not to forget that you can stay in ketosis having a certain amount of carbs per day as in veggies. Different people have different levels that are tolerated while staying in ketosis. Get a good carb/protein counter and try to adjust your intake scientifically and do not hesitate to invest on a blood ketometer to determine how much carbs you tolerate.

Remember, the ketogenic diet is not a fad diet. It is the single most healing diet that has saved many around the world and possibly the best solution to our world's health catastrophe ranging from unprecedented cases of cancer, metabolic disease (including Alzheimer's, fatty liver, obesity, diabetes, etc.), to reproductive problems, psychological problems and so forth. Any alternative therapy out there - including the ones that address unprocessed emotions - will only represent part of the solution if the diet is not addressed. Psychotherapy works better in those who address their brain chemistry through diet. It is not ALL in our heads!

There is nothing like living a life well lived and this diet allows you to be satisfied. Everyone really needs to understand the science of how the body works in order to know how what you put in your mouth is actually affecting you.

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Slow transition into ketogenic diet version

I decided to include this version since some folks in the forum have preferred it for various reasons. In my experience it can be much more difficult and painful as people continue to eat inflammatory foods and avoid healing ketosis. But some folks still prefer to transition into the diet throughout months and slowly.

It is divided in three parts: Beginners, the Paleo elimination diet (a paleo version for finding food sensitivities) and the Ketogenic diet. A fatty meal is introduced every two weeks to allow for digestive adjusting after a lifetime of carb metabolism and its stressful consequences. Adding limits to the grams of carbs will help people transition into ketosis more smoothly by the time they do the ketogenic diet. Bear in mind it is just a general guideline.

BEGINNERS

First and Second Week

No more than 150 net grams of carbs per day.

Only homemade wholefoods allowed.

Cooking fats: lard, tallow, butter or ghee butter, duck fat, coconut oil.

Breakfast: bacon, butter and eggs.

Meals:

- Rice (preferably wild rice) – no more than 1 cup per day.
- Organs and meats of any kind including fish.
- Vegetables of any kind.
- Legumes
- Butter, olive oil, vinegar
- Salt, pepper, natural or herbal spices.

Drinks: tea, coffee with xylitol or stevia.

If hungry: bone broth or nuts (no peanuts)

Dessert: fruits with cream (no more than 1 cup)

To be eliminated:

Remove all gluten except for rice.

-no beer, nor grain derived OH beverage.

-no pasta, breads, flours, cookies, cereals, nor any grain-based product.

-no processed foods: if it comes in a package is suspect. No commercial food, nor dressings nor flavorings or flavored stuff, nor mayo or tomato sauce.

No artificial sweeteners nor sugar, nor high fructose corn syrup.

No soy or its products.

No MSG.

No trans fats – avoid all processed food!

Not even so called “gluten free” foods.

No fruit juices nor sodas, except for homemade lemonade.

Read labels carefully!

Third and Fourth Week

No more than 100 net grams of net per day.

Cooking fats: lard, tallow, butter, duck fat.

Breakfast: bacon, butter and eggs.

Lunch time: Meat with a chunk of fat, eat the fat (use apple cider vinegar if indigestion)

Meals:

-Organs and meats of any kind including fish.

-Vegetables.

-Butter, olive oil, vinegar

-Salt, pepper, natural or herbal spic-es.

Drinks: tea, coffee with xylitol or stevia

If hungry: bone broth or nuts (no peanuts)

Dessert: fruits with cream (no more than 1 cup)

To be eliminated:

No grains allowed:

-Remove rice, all beans or legumes (except for green beans).

-Read labels carefully! Meat products might contain gluten.

No tomatoes, potatoes, eggplants.

Remember, no “gluten-free” products.

Fifth and Sixth Week

No more than 100 net grams of carbs per day.

Cooking fats: lard, tallow, butter, duck fat.

Breakfast: bacon, butter and eggs.

Lunch time: Meat with a chunk of fat, eat the fat (use apple

cider vinegar if indigestion)

Dinner time: Meat with a chunk of fat, eat the fat (use apple cider vinegar if indigestion)

Meals:

-Organs and meats of any kind including fish.

-Vegetables.

-Butter, olive oil, vinegar

-Salt, pepper, natural or herbal spices.

Drinks: tea, coffee with xylitol or stevia

If hungry: nuts (no peanuts)

Drink at least 1 cup of bone broth

To be eliminated:

No fruit nor sugar of any kind (except for vegetables)

-Read labels carefully, meat products might have added sugar.

No more wine or other alcohol (it counts as sugar!)

Seventh and Eight Week

No more than 70 net grams of carbs per day.

Cooking fats: lard, tallow, butter, duck fat.

Breakfast: bacon, butter and eggs.

Lunch time: Meat with a chunk of fat, eat the fat (use apple cider vinegar if indigestion)

Dinner time: Meat with a chunk of fat, eat the fat (use apple

cider vinegar if indigestion)

Meals:

-Organs and meats of any kind including fish.

-Cooked vegetables.

-Butter, olive oil, vinegar

-Salt, pepper, natural or herbal spices.

Drinks: tea, coffee (**start decreasing coffee consumption**) with xylitol or stevia and **without milk or cream.**

Drink at least 1 cup of bone broth

If hungry: a ham with butter and salt.

To be eliminated:

No dairy at all (except for butter)

-Read labels carefully, meat products might contain lactose.

No nuts.

Ninth Week

Between 50 and 70 net grams of carbs per day

Cooking fats: lard, tallow, butter, duck fat.

Breakfast: bacon, butter and eggs.

Lunch time: Meat with a big chunk of fat, eat the fat (use apple cider vinegar if indigestion)

Dinner time: Meat with a big chunk of fat, eat the fat (use apple cider vinegar if indigestion)

Meals:

-Organs and meats of any kind including fish.

-Less cooked vegetables than meat

-Butter, olive oil, vinegar

Drinks: tea or herbal teas with xylitol or stevia and without milk or cream.

Drink at least 1 cup of bone broth with butter on it.

If hungry: a ham with butter and salt.

To be eliminated:

No more coffee.

Modified Laura's friend version:

Step one, Day 1: remove all gluten from your diet. All grains contain some amounts of gluten. The worst is wheat and the least bad is rice. Wild rice has no gluten on it. So you can keep rice, preferably wild rice, for a period of transition. After 2 weeks, ALL grains should be eliminated totally. Not even so-called "gluten free" breads are safe. No beer of course, nor any other grain-derived alcoholic beverage. This is hard, of course, but you can fill the gap by eating more vegetables and meats (includes fish) or organs like liver. Eat your vegetables with plenty of real butter on them (no additives). Start your day with bacon and eggs or ham and eggs and eat all you want. For two weeks, you are going to have a high fat meat breakfast. This is important, as decades of a high carb diet rich in processed food will make it difficult to digest the fats that your digestive system were made to digest. Switching to a higher fat meat diet will take one meal at a time for two

weeks. If you are hungry, have a bowl of bone broth, you'll find the recipe in Appendix B. You can have as much as you want. Only use natural sweeteners like xylitol and stevia (Caution: Sweet tastes can foster sweet cravings). Table sugar nor cane sugar qualify on this diet. Make sure you don't eat more than 150 grams of net carbs per day.

Do this for 2 weeks and then move to step two.

Step two, day 16: After 2 weeks, cut out rice and all beans or legumes (except haricot vert – green beans), and the night shade family (tomatoes, potatoes, eggplants) completely. You should now be having no grains at all, in any form, in your diet. Read labels on everything. If there is a single word pertaining to a grain product, do NOT eat it. Continue to eat plenty of vegetables and meats. Do not use cooking sprays, cook with lard, tallow, duck fat, or butter. Other than your breakfast, take a second meal and eat meats with fat on them and eat the fat. If you have trouble digesting the fats, add apple cider vinegar to your meat, or get digestive enzymes or HCl. If you are hungry, have a bowl of bone broth, as much as you want.

If you are eating lots of fruits, tubers or starchy vegetables, or nuts, make sure you don't eat more than 100 grams of net carbs per day.

Do this additional step for the next 2 weeks. Then move to step three.

Step three, day 31: Remove all sugars from the diet. This includes all fruits. Do not replace this with any foods containing artificial sweeteners because they are excitotoxins and cause great harm. The only sweeteners allowed are xylitol (or another sugar alcohol) and, stevia. Caution: sweet tastes can foster sweet cravings. No honey, no corn syrup, NO forms of sugar at all. You can drink tea or coffee with xylitol and that will help with cravings. Take your third meal and eat meats with fat on them and eat the fat. The fat on beef, pork, duck, is good. You can continue to eat most vegetables. (Make sure that you use only olive oil and vinegar on salads; no commercial dressings). If you have trouble digesting the fats, add apple cider vinegar to your meat, or get digestive enzymes. You don't necessarily have to make 3 meals if you 2 make you feel full. But don't forget the bone broth if you get hungry with 3 meals.

By removing all fruits and sugars, you should easily stay below 100 net grams of carbs (net grams is total amount of carbs minus the grams of fiber) per day even if you eat lots of starchy vegetables and nuts. Remove all alcohol.

From now on, you are supposed to have at least one bowl of bone broth per day. If you are not hungry, it is better to sacrifice one meal (never breakfast) than to sacrifice your bone broth. It will help you transition from a lifetime of a crappy diet into a physiological one which will help you recover your health. It is nutrient packed in minerals and other elements

that are needed to heal. It will save you lots of money in supplements as well!

Do this additional step for two weeks. If you have trouble digesting the fat despite the aid of supplements or apple cider vinegar, go back to the last step and stay there for another couple of weeks.

Step four, day 46: Remove all dairy products except butter from the diet. All nuts, too. At this point, you will be eating only meat or organs, and vegetables. You should eat more cooked vegetables than raw (salad), and eat them with plenty of butter. Add the butter to the bone broth as well.

Don't consume more than 70 net grams in carbs. I would be surprised if you do, since by now you are only eating veggies as your sole carb source.

During these two weeks while you are on step 4, gradually decrease your coffee consumption. Substitute with black tea or herbal teas.

Step five, day 60: Stop coffee; you can have green or black or mint teas. Gradually reduce the quantity of vegetables that you eat and fill the gap with meat and meat fats. This means that if you eat a piece of meat, it should have almost as much fat on it as lean. You can eat as much meat as you want, but be sparing with vegetables, giving preference to cooked ones over raw. Vegetables will be the complement of meat, which

should be the main meal. Don't forget you can have as much bone broth with butter as you want.

PALEO ELIMINATION DIET

Keep your carb intake below 70 grams while you do the paleo elimination diet. You might find it hard reaching 70 grams of carbs since your sole carb source will be vegetables.

Step 1. Eat fatty meats or organs, your bone broth and vegetables for 4 days. No eggs or butter! You can choose ghee butter instead to add to your bone broth or vegetables. Always start with a big breakfast (even if it looks like dinner to you).

No cabbage, cauliflower, broccoli, Brussels sprouts, onions or garlic for a period - later, you introduce the sulfur containing veggies - the reason being some people are sensitive to sulfite containing foods. No other condiments than rosemary, cilantro, ginger, turmeric, black pepper and sea salt and olive oil.

Step 2. After 4 days, reintroduce eggs and see what happens in the next 3 days. If there was a reaction, eliminate eggs for at least 6 months when you can test it again.

Step 3. Proceed to test butter and wait for a possible reaction

for the next 3 days. Same concept, if there was a reaction, eliminate for 6 months. You can substitute with ghee butter if you find you can't tolerate real butter.

Step 4 and so forth. Test for the sulfur containing veggies, and other food culprits you might suspect. For some of us the natural sweetener stevia is inflammatory. For most of us coconut oil –despite its great fat - is inflammatory as well, which makes sense, it is a tropical fruit which was not around on the Northern hemisphere or else. Others can't tolerate some spices. Most people can't tolerate nuts except for cashews and walnuts. Nuts are often as high or even higher in phytic acid than grains! Dark chocolate (85% at the very minimum) can be tested as well. You can test all these foods with the paleo elimination diet.

KETOGENIC DIET

When you get up in the morning, have a nice protein breakfast rich in fat such as bacon, sausage maybe eggs if you tolerate them. Add a cup of broth if you like. This should be every single day.

Then, on normal days, have a bit of meat AND broth for lunch, a bit of meat and a bit of lettuce if you like, for dinner. Or just broth, a fat shake, or just meat. This meat should be the amount that is right for your weight. If you like, you can go a few grams over, but not more than that. Try to make sure you get the ratio of fat with this meat that is correct.

The amount of meat is calculated in the following way: Find out your weight in Kg (1 Kg = 2.2 pounds). Then calculate the amount of meat per day: from 0.8 to 1 grams of protein per Kg of ideal weight per day. The ratio of fat and protein should be around 4 to 1. Keep in mind that fat is more energetic rich than protein, so a pork chop with a thick chunk of fat on it will do, also bacon. Typically, up to 85% of your energy will come as fat. You eat your allocated protein and then control satiety with fat. Works very well! People may have a bowl of fat rich broth and then they're good for half a day.

Choose a convenient day when you can do intermittent fasting, i.e. on the weekends. On that day have your usual breakfast and then just bone broth for lunch and dinner and a snack if needed. You can add butter or ghee butter to your bone broth, and lard if necessary.

Baby food

I used to feed my babies an egg yolk custard every day for breakfast. You could probably make something like the fat bomb, plain, small amount, for some excellent nutrition. I also read somewhere the other day about using bone broth and blended bits of meat as baby food. Both of these would be a lot better than "gluten free cereals". My youngest, who had some similar issues was also put on raw goat's milk after I stopped nursing her - for awhile. Now she doesn't tolerate ANY dairy but really likes coconut milk. - Laura

Plain custard for baby

by Laura

In a small, heat proof dish, put maybe 1/4 cup of coconut milk, 1 tsp butter and an egg yolk. Mix thoroughly. Put dish in saucepan of water about half-way up the side of the dish and begin heating while stirring off and on until it gets very warm, and then stir constantly until it thickens; don't let the contents of the dish boil, though the water might simmer. Take it off the heat, and cool it in a dish of cold water. You can add a tiny pinch of salt. You can do this with goat's milk too.

Just keep your eyes open for any reactions to coconut milk. You can use goat's milk for the custard too. If the infant is VERY sensitive, you can even use just water, butter, egg yolks for the custard.

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