How to be a healthy omnivore.

For the full list of linked references for this article please visit
https://uk.pinterest.com/primalweb/healthy-omnivore/

Molecular techniques which reveal similarities in DNA show we are between 95 and 98.5 percent genetically identical to chimps!

This divergence from our cute cousins happened about 6 million years ago, so chimps and humans have both had quite some time to evolve in different directions. In this time Homo sapiens brains have increased 300%.

Modern human brains take up approximately 2 percent of our body weight, but use about 20 percent of our energy; so what happened to our bodies that they can dedicate so much energy to powering our big old brains? Here are some of the theories that explain why we have evolved to become such dominant and supposedly intelligent species.

One theory that could explain it, is the metabolically hungry liver and gastrointestinal tract shrunk as the brain size increased. It can take some primates 80% of their daytime activity sourcing, eating and digesting their low-calorie plant food. Having a smaller gut requires that the main food source comes from high nutrient density, high calorie but easily digested foods.

Aiello and Wheeler in their 'expensive tissue hypothesis' suggest that it was the nutrient dense meat and offal of animals that was the key food in the evolution of our large brains.

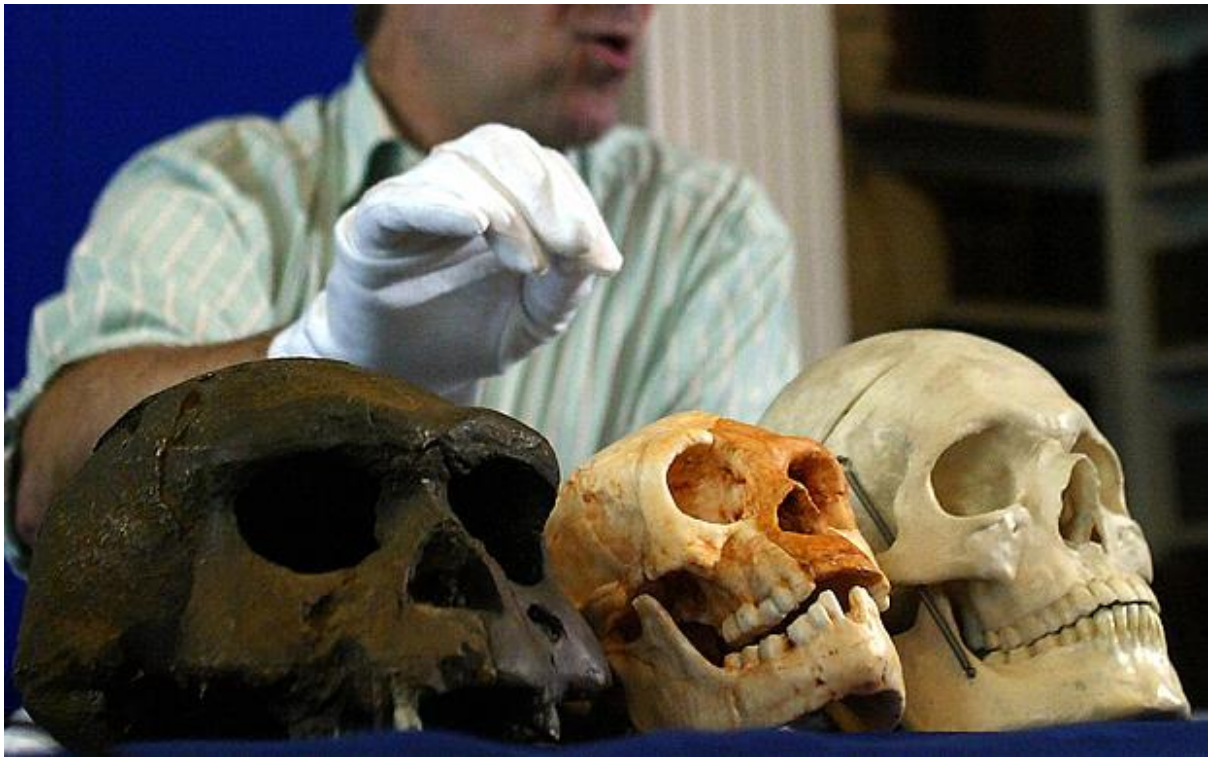
It could be that our very earliest ancestors actually didn't do the killing themselves, rather our tool making and collaborative social skills gave us access to the very best animal sourced nutrients. Some of the earliest found human-made tools date back 3.3 million years and don't appear to be suitable for hunting.

The tools identified were most likely used for slicing through tendons and ligaments to remove flesh from bone and percussion tools for opening long leg bones, jaws, and skulls. It's perfectly possible and probable that organised groups of human scavengers evolved techniques for keeping hyenas away from carcasses left by big cats, intercepted carcasses hung by leopards in trees, and took advantage of the natural deaths that occurred by accident in the vast herds of wild ruminants that would have been walking the earth at that time. In a fascinating article in the New Scientist, a live experiment of simulating passive scavenging for 7 months in a Kenyan nature reserve is detailed. By observing how much meat and marrow was left on carcasses after the predators had their fill it was observed that as much as 15kg of meat scraps were still available on a zebra; this equates to 60,000 calories! If only we were so good at reducing waste these days.

Of course, the type of food that was left is likely to be very high in nutrients and would include brain and bone marrow.

It seems our early knife skills could be one of the reasons we thrived as a species and don't have large floppy muzzles or talk in chimp! Being able to cut meat into smaller more easily chewed pieces enabled more calories and nutrients to be digested in a shorter period of time allowing greater gaps between meals for hunting, rest and – err – breeding!

Both tools for slicing and pounding the meat allowed us to reduce the 'chew time' by around 17% - the equivalent to about 2.5 million chews per year. According to evolutionary anthropologist Daniel Lieberman at Harvard, a reduction of this significance could easily be enough to allow early members of our genus Homo to evolve smaller teeth and jaws. Our closest relative the chimpanzees, for example, spend 6 hours a day eating fruit, fibrous plants and occasional protein and gorillas can spend up to ten hours a day. As our lives became less dependent on endlessly chewing tough plants and sinewy wild game meat, big teeth and long jaws stopped being necessary to our survival— natural selection could start favouring other traits instead, perhaps ones conducive to the development of speech?



Another significant factor in our increasingly bulky brains and trim tums is that our diets included fish. Brian Richmond, an anthropologist at George Washington University in Washington, D.C. says ‘the fatty acids found in the fish could have provided the nutrients the hominins needed to evolve larger brains.’ The evidence shows that we started eating fish which was rich in the important brain growth nutrient DHA (docosahexaenoic acid) and other meat before we evolved a much larger brain around 2 million years ago.

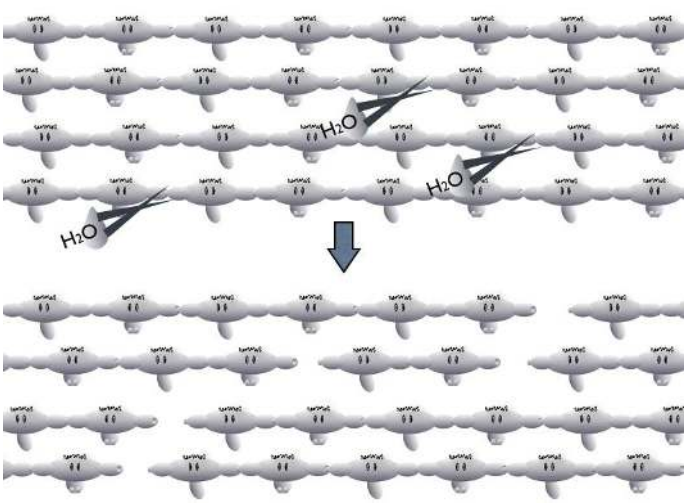
Cooking, it seems, was an enormous contributing factor in pre-humans getting more nutrients in less time and growing the big brains we have today.

Heating certain foods unlock nutrition; up to a 100 percent of a cooked meal is metabolized by the body, whereas raw foods yield just 30 or 40 percent of their nutrients.

But when it comes to meat it is about HOW you cook it.

Quick cooked and overcooked muscle meat results in a kind of tissue polymer that requires more work with a knife and more chewing as well as more time to digest, many of the nutrients will be lost or will not be absorbed by the body.

When we fry or grill muscle meat it tends to char and burn – we like the 'browned' effect; it's tasty. This process causes amino acids like creatine to react and form harmful compounds called heterocyclic amines (HAs). If the juices are allowed to drip and cause the flames to flare around the meat this creates another harmful compound polycyclic aromatic hydrocarbons (PAHs). PAHs can result in DNA mutations after being metabolised by specific enzymes; when fed to animals these compounds caused a range of cancers.



When meat is cooked gently for a long time, instead of a tangled mess of hard-to-digest amino acids, the long protein chains stay in orderly lines. The moisture in the meat allows the peptide bonds to be neatly 'clipped' into small peptide segments; this process is called hydrolytic cleavage. In a fantastic quirk of nature; these peptide segments fit neatly into our taste buds receptors, which are also tiny, and the food is perceived as 'tastier'.

In fatty cuts of meat with connective tissue and skin, the water – maintained within slow cooking methods – gently teases out the family of molecules called glycosaminoglycan's (GAGs). GAGs are long molecules but the slow cooking process reduces them into delicious 'taste bud-sized' sugars that taste great. The GAGs you may be familiar with are glucosamine, chondroitin sulfate, and hyaluronic acid. These GAGs have become well established in helping with arthritic pain and improving joint health.

Western Price observed that all healthy traditional cultures included the use of bones in their diet, usually in the form of bone broths.

Currently, we're at an incredibly fortunate point in time; we have real life hunters and gatherers still walking our earth, along with some pretty cool scientific records of 'natural' humans in action before they were polluted by the pervasive influence of the West. What's clear is that the idea of a single diet adopted by all hunters and gatherers is a total myth.

Both throughout evolution and still today, different parts of the world offer different natural foods and people have adapted well to eating them. What seems to be the driving factor behind the onset of 'diseases of Westernisation' is the introduction of modern refined and processed foods and sugar, alongside a combination of unhealthy lifestyle factors.

What is also clear is that although traditional diets varied hugely, the inclusion of at least some animal foods was essential to maintaining robust health.

Certain nutrients are critical for our bodies to function normally and vegan diets are virtually devoid of B12, calcium, iron, zinc, the long-chain fatty acids EPA & DHA, and fat-soluble vitamins like A & D.

Adequate B12 intake is thought by some vegans to be possible from certain plant sources such as seaweed, brewers yeast, spirulina and fermented soy. As it turns out, plant sources of B12 are actually B12 analogs or cobamides which in fact block the intake of and increase the requirement for true B12.

Vegans are often deficient in calcium and the reason is likely to be that not only do they avoid the animal foods naturally rich in calcium but the plant foods they are eating contain oxalates and phytates which block absorption of some of the calcium contained within them.

Similarly, Iron deficiency is more common in vegans even though their intake of iron is similar. This once again is due to the form in which the iron is eaten. The bioavailability of iron in vegetarian diets is poor because of their higher content of absorption inhibitors such as phytate and polyphenols. As a result, vegans often have lower serum ferritin concentrations than omnivores, which is indicative of reduced iron stores, and a precursor of iron deficiency.

Zinc is the same story, although there is not too much concern about the intake levels of zinc in a vegan diet the high levels of phytate in the plant foods being consumed increase the volume of those foods required to absorb sufficient zinc.

EPA and DHA are two (omega-3) essential fatty acids found nearly exclusively in fish and animal foods. These long chain fatty acids are thought to protect against diseases such as cancer, asthma, depression, cardiovascular disease, ADHD, and autoimmune diseases.

Some plant foods contain both linoleic acid (omega-6) and alpha-linolenic acid (omega-3) which are essential fatty acids. Some plant based omega-3 (ALA) can be converted into DHA and EPA, however, the conversion rates are very low at about 5- 10%. Also, the successful conversion of these ALA's is dependent on synergistic nutrients such as zinc and Iron.

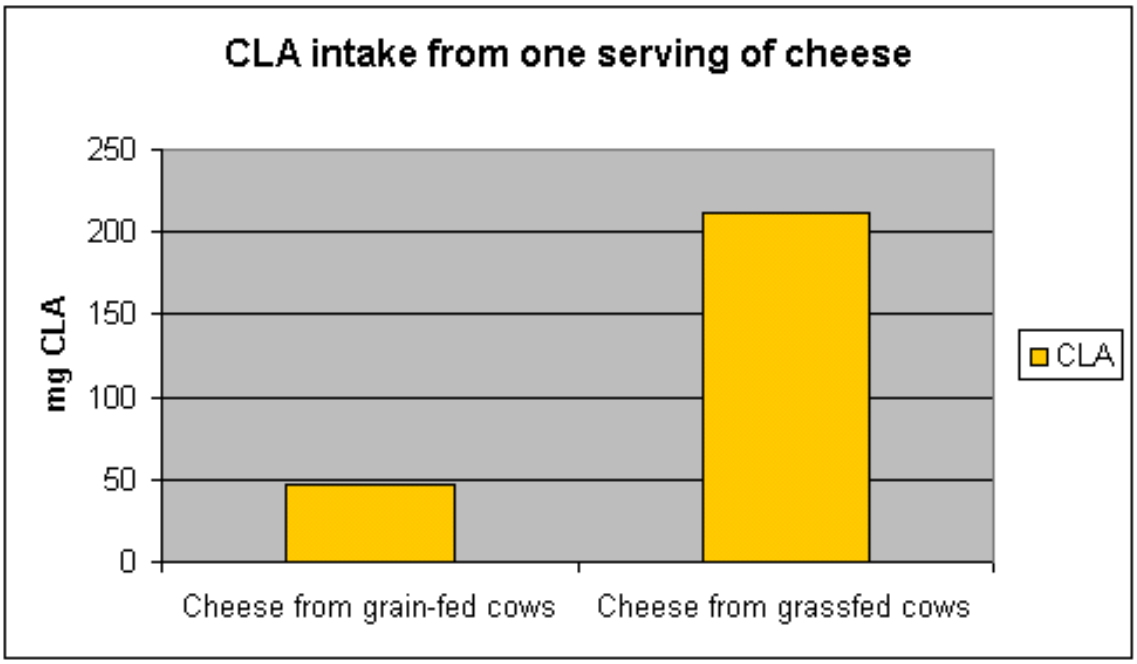
If we eat too many omega-6 fatty acids this will interfere with the successful conversion of ALA into DHA and EPA. This is why grass fed meats with a higher ratio of 3:6 are important and why vegans who are eating diets high in omega-6 are less likely to successfully convert ALA into EPA or DHA. It has been shown that traditional cultures all have a near equal balance of omega-3 and omega-6 in their diets.

As Nora explains in her wonderful article http://www.primalbody-primalmind.com/who-red-meatbrouhaha/ there's a very special fat out there that is found only in the fat of grass-fed and finished animals. CLA or 'conjugated linoleic acid' could be one of the most healthful and potent cancerfighting substances in our diet. It has been proven to – even in small amounts - can block all three stages of Cancer unlike most "anticancer nutrients" which only help on one stage. Research has demonstrated beneficial effects of natural CLA from animal fat have been found in cancers of the breast, prostate, colon, and skin.

Although correlation is not causation several studies strongly suggest CLA could be particularly helpful in the fight against cancer. In a Finnish study, women who ate the most CLA had a 60 percent lower risk of breast cancer than those who ate the least. Some French researchers sampled the breast tissue of 360 women and found that the women with the most CLA had a staggering 74% lower risk of breast cancer than the women with the least CLA.

In a study that perfectly highlights the need for whole food solution not isolated nutrient supplements, human breast cancer cells were incubated in milk fat high in CLA or in an isolated form of CLA without any milk fat. The high CLA milk fat decreased cancer growth by 90 percent but the isolated CLA decreased it by only 60 percent. What was particularly startling was, when the cells were incubated in the omega-6 fat, linoleic acid, found most abundantly in grain and grain-fed animals, cancer cell growth increased by 25 percent!

There are more and more studies being done on the preventative properties of CLA against breast and Colon cancer.



CLA seems to be powerfully anti-inflammatory and the fat even seems stable throughout cooking. The positive anti-cancer results seen in studies are also expressed at levels achievable in a healthy human omnivore diet if the animal foods eaten are grass fed or wild.

Even though synthetic CLA is sold in capsules in health food stores, it lacks the beneficial form found exclusively in grass-fed meats and may even have potentially adverse effects.

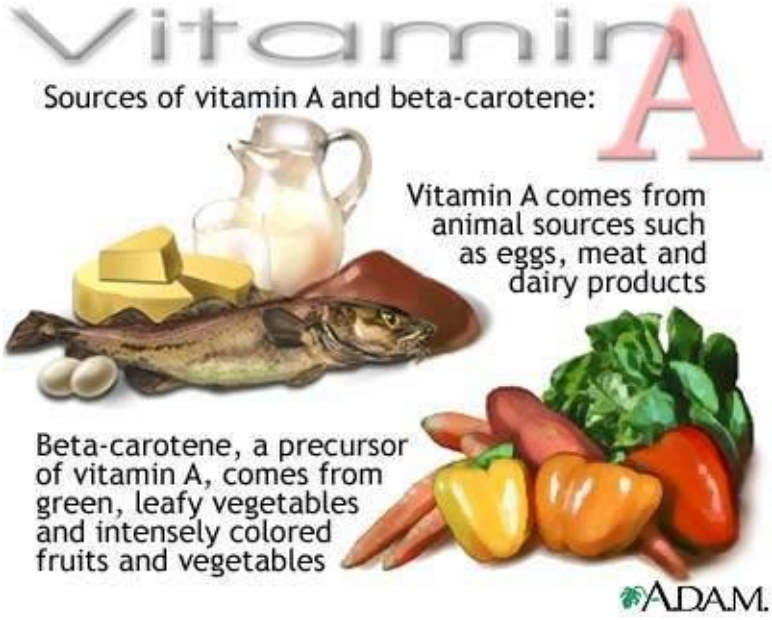
As Jo Robinson days on 'Eat Wild' 'Many people take a synthetic version that is widely promoted as a diet aid and muscle builder. New research shows that the type of CLA in the pills may have some potentially serious side effects, including promoting insulin resistance, raising glucose levels, and reducing HDL (good) cholesterol.' http://www.eatwild.com/cla.html#1

As if that were not enough nutritional reason. Vegan diets are nearly entirely absent in fat-soluble vitamins A and D. Fat-soluble vitamins are critical activators to human health and are found mainly in animal foods particularly seafood, organ meats, eggs, and dairy.

Vitamin A has a critical role in maintaining healthy vision, neurological function, and healthy skin.

Vitamin D deficiency is common and linked to increased risks of developing common cancers, autoimmune diseases, hypertension, and some infectious disease.

Apart from certain hard to find mushrooms which contain vitamin D most plant foods don't contain vitamin A or D. Plants contain beta-carotene which is the precursor to vitamin A but once again conversion rates are poor. Vitamin D levels have been shown to be 74% lower in Vegans than in Omnivores.

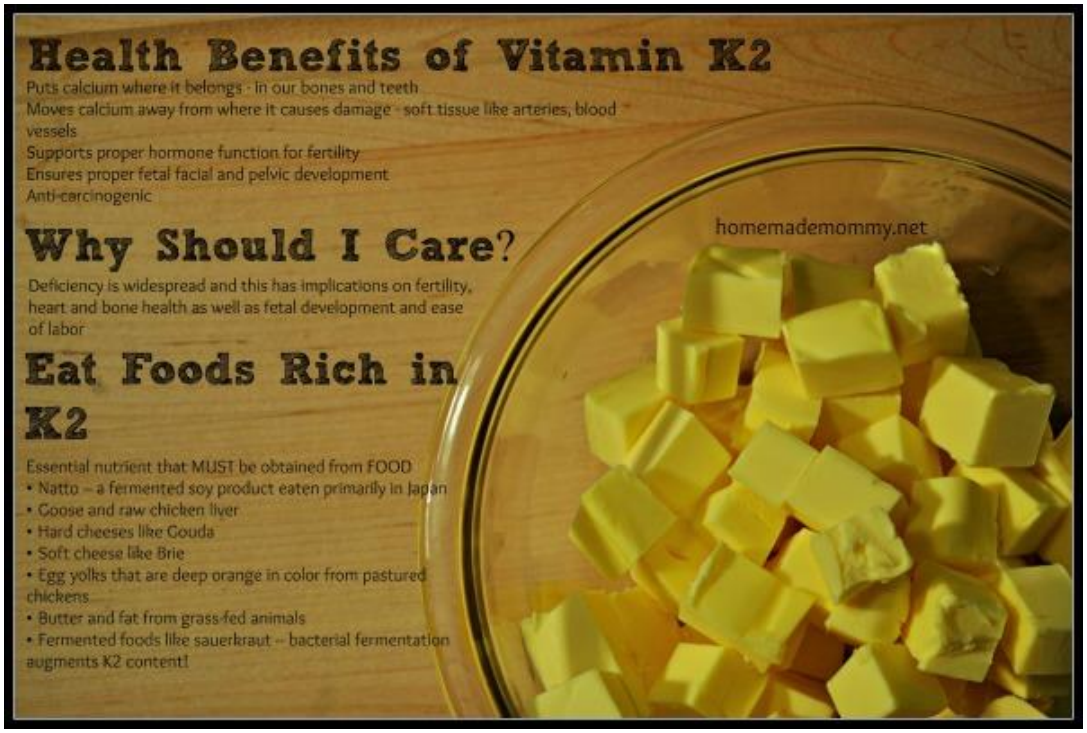


To get the same vitamin A hot as a portion of beef liver you would have to eat 14 cups of carrots. We know that in healthy traditional cultures people at up to ten times the amount of Vitamin A than our current RDA. To attain these levels of vitamin A today from plant sources would be virtually impossible.

In 1945 Weston A Price discovered through the chemical testing of the organ meats, eggs, and butter eaten by healthy traditional cultures an unknown fat soluble nutrient he called 'Activator X.' He discovered that the nutrient was present in higher quantities in the meat, milk, butter, and eggs of animals that are eating quickly growing green plants in pasture.

The nutrient played an influential role in the absorption of minerals, protection from tooth decay, growth and development, protection from disease and the healthy functioning of the brain.

A growing body of scientific work now confirms that the mysterious activator was Vitamin K2 which work synergistically with the other fat soluble activators vitamins A and D and is mostly conveniently packaged with them in traditional fatty grass fed animal foods.



Vitamins A and D tell the cells to produce certain proteins and vitamin K then activates these proteins. The K vitamins are also essential for effective blood clotting.

As illustrated in Kate Rheaume-Bleues' ,'The Calcium paradox', vitamin K2 is the transport mechanism that gets calcium to your bones and eating calcium without sufficient K2 will be essentially wasted. Supplementing calcium could even be harmful in the absence of animal foods as it could increase the formation of plaque in the arteries if it is not utilised in the bones.

Apart from fermented soya 'natto' and some other fermented vegetables, plants don't provide vitamin K2. The K2 found in fermented foods is actually produced by the bacteria (animals) in the fermenting process. The K1 found in green leafy vegetables has a low conversion rate when ingested directly by humans – approximately 10%.

Vitamin K2 is thought to be one of the main nutrients responsible for the wide facial structures, lack of tooth decay and fine stature of the non-civilised people Weston Price studied in his research.

http://www.westonaprice.org/health-topics/abcs-of-nutrition/on-the-trail-of-the-elusive-x-factor-asixty-two-year-old-mystery-finally-solved/

Weston Price found that 'the diets of healthy, non-industrialised peoples contain at least four times the minerals and water-soluble vitamins, and ten times the fat-soluble vitamins found in animal fats (vitamin A, vitamin D and Activator X, now thought to be vitamin K2) as the average American diet.' http://www.westonaprice.org/health-topics/abcs-of-nutrition/principles-of-healthy-diets-2/

Western diets are now based on processed foods, refined grains, sugars and vegetable oils. But even the animal foods we are eating contain only a shadow of the nutrients our ancestor's wild meats would have offered up.

In one study Cows grazing pasture and receiving no supplemental feed had 500% more conjugated linoleic acid in milk fat than cows fed typical dairy diets.

https://www.ncbi.nlm.nih.gov/pubmed/10531600

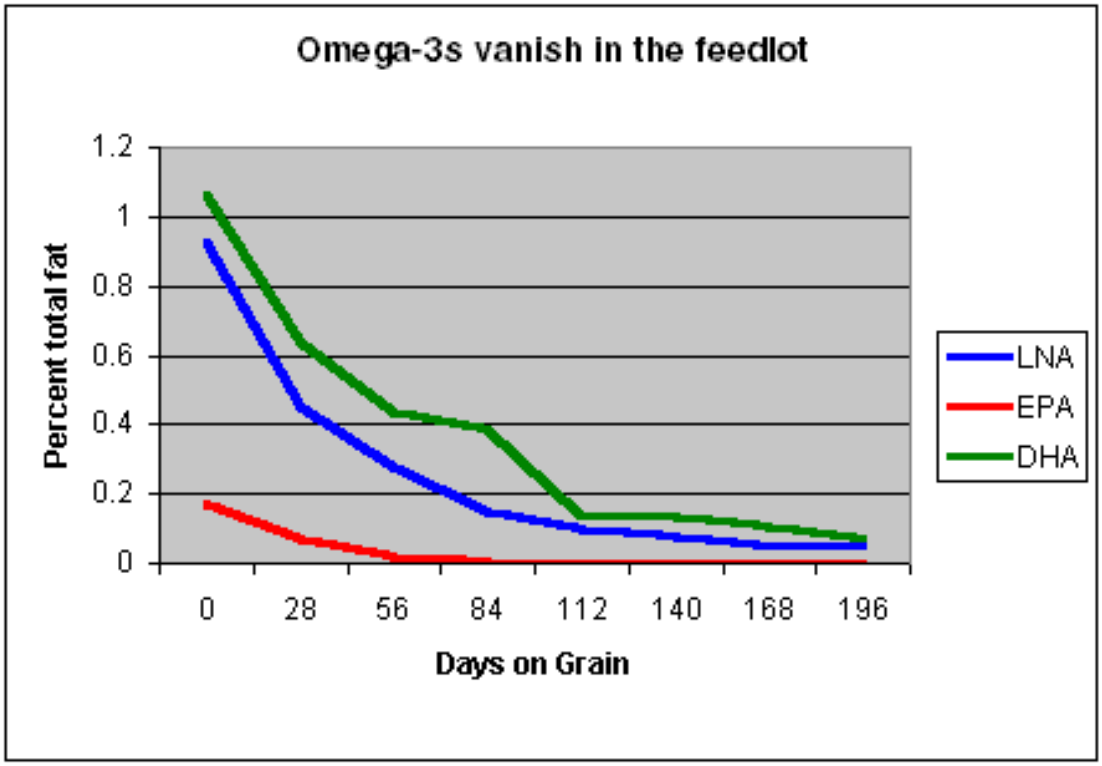
In another study, fatty acid profiles were significantly modified by different diets in milk cows. CLA, vaccenic acid (VA), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) significantly ($P < 0.05$) increased in plasma as a function of the proportion of pasture added to the diet.

http://link.springer.com/article/10.1051%2Fdst%2F2010100

In a study on lamb by Bristol University, the favorable fatty acid profiles of lamb improved when lambs where grazed on habitats with a greater diversity of species against a control of lowland pasture. (Paper)

It is clear from numerous studies that animals eating a natural diet with produce meat, milk, and eggs that are higher in many of the nutrients helpful to human health. It is also clear that the health of the land, diversity of the habitat and breed or species of the animal influences the potential health and therefore the produce it supplies. Choosing produce from animals that have been reared

in ways that mimic nature will outperform those which have been reared on un-natural foods in confinement every time.



It's perfectly possible that with some care we can be healthy as a vegetarian if we include milk, butter, and eggs in our diet, but there is no evidence that being a vegetarian is any healthier than being a health-conscious omnivore.

https://chriskresser.com/why-you-should-think-twice-about-vegetarian-and-vegan-diets/

Being a healthy vegan, on the other hand, is a far harder task. You'll have to supplement heavily and there is no room for 'empty' calories, every mouthful should contribute towards a carefully planned nutritional plan that fills all the gaps. Be aware that we have no historic evidence of any vegan cultures, nor do we have any long-term evidence of vegans that have maintained robust health for more than one generation. Be aware if you choose to follow this diet you're part of a rather uncertain human experiment!

https://chriskresser.com/why-vegetarians-and-vegans-should-supplement-with-dha/

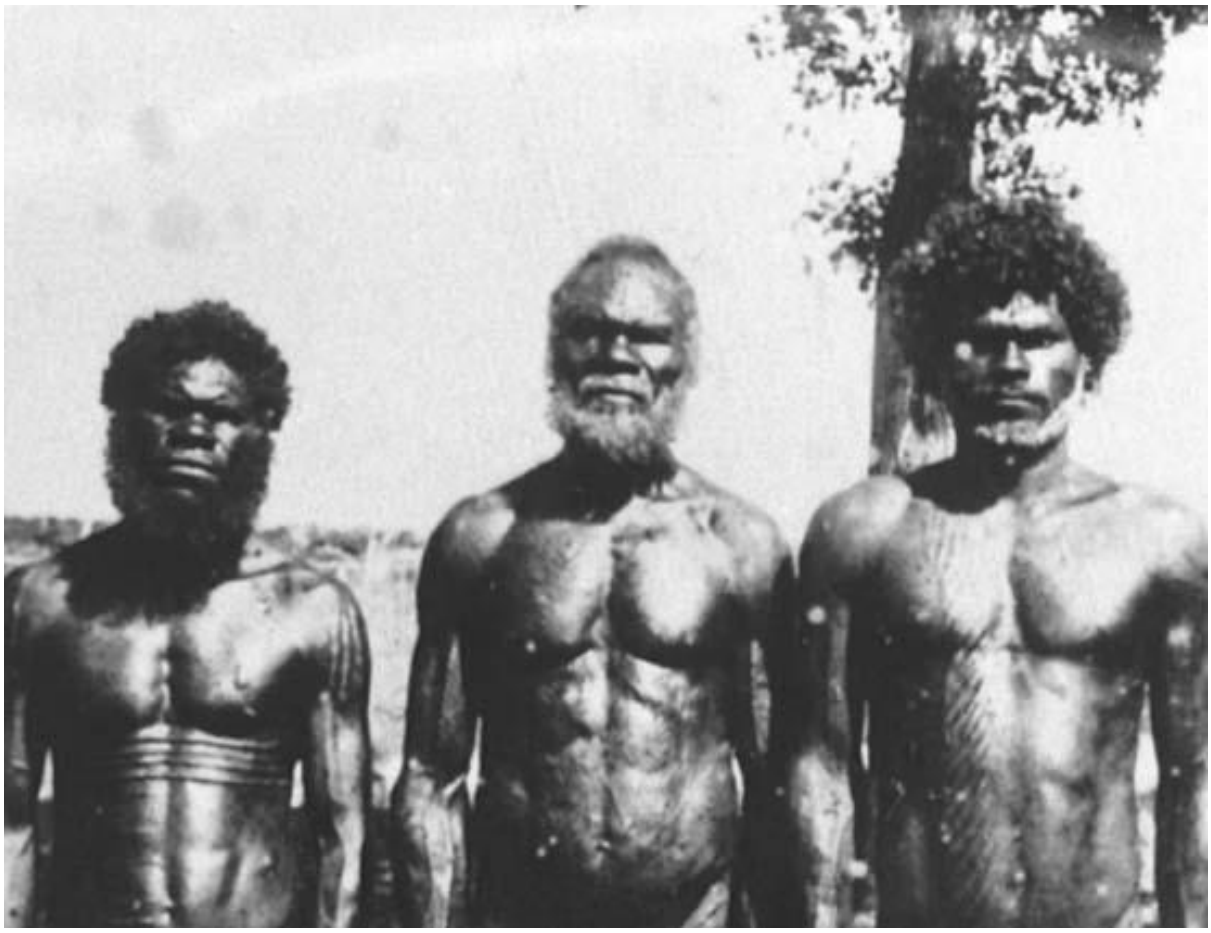
Fat is the number one source for stored energy in the body and contains three or four times the potential energy output of glucose. When glucose is not available fat is converted into energy instead.

The human brain is composed of nearly 60% fat, with fatty acids that are critical in facilitating brain performance.

Fat helps form every cell membrane in the body and is essential for a huge range of functions including maintaining our immune system, nervous system and for activating hormones.

In Weston Prices study of the indigenous Aborigine, he observed that a great challenge for these people was to obtain enough dietary fat. The Aborigine were totally in tune with the natural world

around them and knew just when certain animals were at their fattest. It was documented that unless the Aborigine were starving they would only eat kangaroo when they were fat. During periods of abundance, “animals were slaughtered ruthlessly, and only the best and fattest parts of the killed game were eaten. “Favorite foods were fat from the intestines of marsupials and from emus, the highly saturated kidney fat from the possum, bird or reptile and many different types of insects.



The Inuit described by Weston A Price "In his primitive state he has provided an example of physical excellence and dental perfection such as has seldom been excelled by any race in the past or present.’’

Most Inuit groups ate very little plant food – small amounts of kale and berries - their calories came primarily from fat; up to 75%, with hardly any calories coming from carbohydrate. http://wholehealthsource.blogspot.co.uk/2008/07/inuit-lessons-from-arctic.html

Weston Price consistently found that healthy primitive peoples consumed a diet containing at least ten times the fat-soluble activators – vitamins found only in animal fat – compared to the typical American diet of his day. http://www.westonaprice.org/health-topics/australian-aborigines-livingoff-the-fat-of-the-land/

So why can gorillas and cows manage without fat? Herbivores have developed big guts which are required to house their enormous digestive tracts.

The important difference between humans and these animals is that the large gut houses vast armies of bacteria who can digest the cellulose and plant fibers found in the entirely foraged plant based diet. The by-product of this clever digestive system and enormous daily quantities of fibrous plants includes short chain fatty acids – FAT!

So why are the health authorities telling us fat is bad? Because of a study called the 'diet –heart hypothesis'. The study emerged in 1958 and was based on questionable science, led by a man who was arguably not qualified to conduct such an influential study; 'Ancel Keys Ph.D.'.

Unfortunately, following years of failed attempts to get the study taken seriously by credible scientists, the American Heart Association – who was partly funded by the vegetable oil industry – decided to run with the advice. In one of the world largest and most effective marketing campaigns, the idea that saturated fat caused heart disease was now mainstream 'knowledge', as was the notion that vegetable oils – including margarine – were a 'healthy' alternative.

This has probably been one of the most damaging pieces of 'health' advice we have ever accepted.

Cholesterol is, in reality, even more, important than an 'essential' nutrient. Cholesterol's important role in our body can't be overstated; it is critical for digestion, proper brain function, hormone function, Vitamin D synthesis, bone health, and is an essential part of every cell in the body. As Zoe Harcombe says "… human beings quite simply die without cholesterol." Cholesterol is so crucial that we have evolved to produce it in our own liver when our food can't supply it – it's that necessary. Trying to eat less cholesterol in a misguided bid to 'lower your numbers' is simply futile!

http://www.zoeharcombe.com/the-knowledge/saturated-fat-does-not-cause-heart-disease/

Now – after many years of good scientific evidence, fighting the more powerful marketing machines of the 'low fat' and 'high carbohydrate' camp; it seems the penny may have finally dropped. In his book 'The diet-heart myth' Chris Kresser elaborates on these four findings:

- High cholesterol is not the primary cause of heart disease.
- Diets high in saturated fat and cholesterol don't cause heart disease. (Unless you are also a carb junkie!)
- Consumption of so-called "heart healthy" vegetable oils is linked to heart disease.
  Statin drugs don't reduce the risk of death for most people.

Dr. Sinatra, the highly respected cardiologist, suggests a more meaningful primary statistic for heart health would be the ratio between triglycerides and High-Density Lipoprotein (HDL) cholesterol. Dr. Sinatra says "Ideally, you want no more than a 2:1 ratio of triglyceride's to HDL cholesterol. So, if your triglycerides are 100 mg/dl, your HDL cholesterol should be 50 mg/dl. Anything under 3:5 is considered a good ratio, but I don't like to see a blood lipids ratio that's over 5:1.2.". We need to get our HDL up and our triglyceride down.

The most effective way to lower your triglycerides is to reduce your carbohydrate and sugar intake and keep your weight down.

There are several other factors that influence heart health, including, blood pressure, homocysteine, vitamin D synthesis, high levels of small dense LDL and low HDL cholesterol among many others. Saturated fats have been shown extensively in credible studies to – in the context of a low carbohydrate diet – reduce triglycerides, raise the helpful HDL cholesterol and help maintain a healthy blood sugar level; all important factors in maintaining a healthy heart.

The worst alternative to lard and butter are 'trans' and 'partially hydrogenated fats'. These evil substances are chemically altered to make them solid at room temperature; our enzymes pick up these altered molecules and ask them to perform functions in our cells.

Butter, lard and coconut oil. Contain high amounts of saturated fats. Saturated fat comprises about half of our cell membranes and encourages healthy metabolic and hormonal processes in the body.

Another benefit of chemically stable saturated fats is that they are more resistant to oxidisation. Because of this stability, saturated fats are the 'chosen ones' that make up half of the fat in our 70 trillion cell membranes.

Unsaturated fats are less stable and are therefore more prone to oxidisation from heat, light, and oxygen. (Mono-unsaturated fats have one double bond and are relatively unstable; polyunsaturated fats have two or more double bonds and are very unstable).

Cooking with 'runny' polyunsaturated fats causes the release harmful free radicals which are chemically reactive compounds which damage cells in your body.

Monosaturated fats are healthy when fresh and eaten – ideally – unheated, such as when used as a dressing. Great monounsaturated fats are avocado oil and extra virgin olive oil.

Polyunsaturated fats such as seed oils are not only damaging to us when heated but are predominantly made up of omega 6 fatty acids. In our average Western diets, we eat far too much omega-6 fatty acid in ratio to omega-3 fatty acid and this has a pro-inflammatory effect on our bodies.

Eating too many polyunsaturated oils has been shown to contribute to a large number of diseases including; impaired immune system, increased the risk of cancer and heart disease, liver damage, damage to the reproductive organs and lungs, digestive issues, reduced cognition and impaired hormone function as well as increasing your risk of obesity.

The worst alternative to lard and butter are ‘trans’ and ‘partially hydrogenated fats’. These evil substances are chemically altered to make them solid at room temperature; our enzymes pick up these altered molecules and ask them to perform functions in our cells. The cellular function can be so badly affected that the cell will die! These fats have NO place in a human diet and are likely to be responsible for a large number of deaths a year.

So the next time someone suggests you shun a natural delicious food like butter or lard that has been used by humans for thousands of years without consequence, and tells you to replace it with tractor grease; I suggest you politely decline!

But before you start loading up your refined white bread with butter. A word of caution; traditional cultures did not eat fat in the presence of a high refined carb diet. Just because saturated fat and butter have been shown not to be bad for us at normal levels does not mean it is good for us at high

levels. Foods behave differently in the presence of insulin; if you're washing a high carb diet down with bulletproof coffee and dunking it with pork scratchings be warned!

We also do not fully understand how much protection the fat-soluble vitamins A and D along with CLA and K2 offered are ancestors when they were eating plentiful saturated fat without displaying any heart disease. The picture is complex and we should be careful not to jump to unfounded conclusions. Eating animal foods from grazed animals is likely to be the safest way to ensure you are eating fatty foods similar to our ancestors.

Our genetics have been moulded by our behaviours, and for hundreds of thousands of years we would have eaten the whole animal not just the muscle meat; our health depends on us continuing to honour our 'hard wiring.'

In a diet that has a lot of 'clean', lean meat, a person will be ingesting large amounts of the amino acid methionine. It has been shown in studies that a diet high in methionine could cause a rise in plasma homocysteine. Homocysteine is used as an index of our susceptibility to disease. The great news is that if we eat enough of the amino acids found in offal, skin, and connective tissue – such as glycine - and ensure adequate intake of homocysteine-neutralising nutrients (vitamins B6, B12, folate, betaine, and choline) the risk should negate. This happens naturally when eating all parts of the animal.

http://chrismasterjohnphd.com/2011/03/16/anyone-doing-paleo-without-liver-bones/

Have you ever wondered why when a fox breaks into a hen coup they take off the heads and leave the bodies?

I'm sorry to burst the 'foxes are evil' bubble, but there's more to this wasteful action than reckless murder. When you compare the nutrient density of the different parts of any animal, which bits do you think are more nutrient dense? Yup, the offal such as brains, liver, heart and kidney.

http://nutritiondata.self.com/facts/beef-products/3463/2 http://nourishedkitchen.com/best-sources-vitamins-minerals/

A 100 gram portion of beef liver contains:

1176% of the RDA for Vitamin B12.

Over 50% of the RDA for Vitamins B6, B5, Niacin and Folate.

201% of the RDA for Vitamin B2.

634% of the RDA for Vitamin A.

714% of the RDA for Copper.

Over 30% of the RDA for Iron, Phosphorus, Zinc, and Selenium.

29 grams of high-quality animal protein.

Compared to regular cuts of muscle meat, organ meats are more densely packed with just about every nutrient, including heavy doses of B vitamins such as B1, B2, B6, folic acid and vitamin B12.

Organ meats are also loaded with minerals like phosphorus, iron, copper, magnesium and iodine, and provide the important fat-soluble vitamins A, D, E and K.
http://www.marksdailyapple.com/organ-meats/#axzz3wC0a2e58

Organ meat can be a rich source of vitamin C in the absence of plant foods. The Inuit discovered this intuitively and used to prize the adrenal gland of moose – studies now show that these glands are exceptionally high in vitamin C. The vitamin C content of liver is three times higher when eaten raw and western price observed that all traditional cultures included at least some raw offal in their diet.

http://pubs.aina.ucalgary.ca/arctic/Arctic32-2-135.pdf

When animals have been healthy and raised on pasture growing on nourished mineral rich soils, then the benefit is compounded.

It's important when eating any meat - and especially the organ meats and fats of an animal - to choose organic meat that has had less exposure to pollutants such as pesticides which can bioconcentrate in an animal. http://www.marksdailyapple.com/does-the-liver-storetoxins/#axzz3wC0a2e58

Other cultures have not forgotten to celebrate the nutrition and flavours found in offal meats. My colleague in Pakistan explained excitedly when asked, that during the celebration of ‘eid al fitr’ the family would fight over the brains and offal of the recently slaughtered animals before anyone considered moving onto the muscle and lean meats; about a third of their animal was given to the poor; so of course the less preferred muscle meat was selected for this donation.

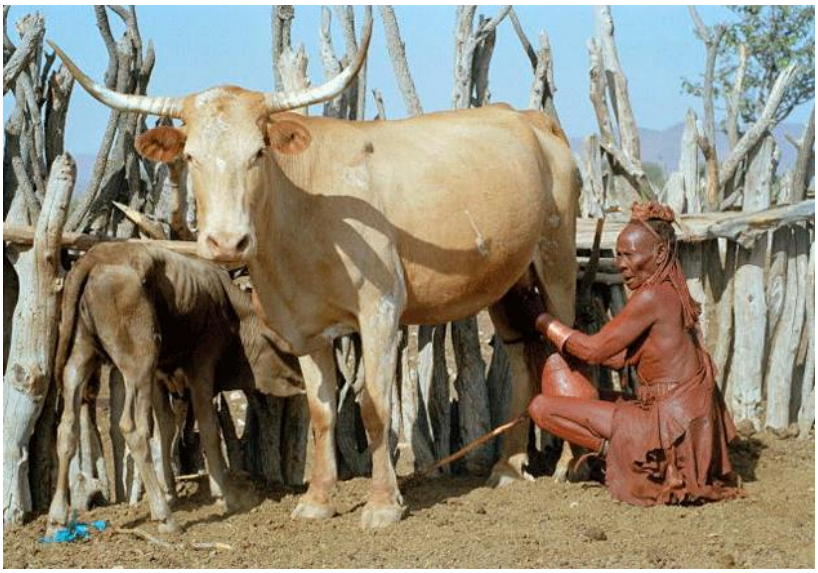
I feel it’s important to honor every part of an animal killed for food and from a sustainability and food security standpoint it’s definitively a critical part of the long-term puzzle.

If – like me - you’re not keen on eating offal ‘straight’, then consider delicious traditional dishes such as haggis, black pudding, liver pate, steak and kidney casserole, faggots and brawn.

So we are starting to build a picture of what a healthy diet may look like, but there's another piece to this puzzle; it's called 'Gene-culture co-evolution.' We may all share the same basic human genetic hardwiring, but there is considerable room for adaptation in different cultures through the process of natural selection.

Our planet's habitats and landscapes are diverse, and before globalisation we mostly ate from within a small geographical range. In a group of people forced to adopt a particular lifestyle or dietary habit, those who don't tolerate it well will often become sick or die and are certainly the least likely to have children – the strongest are the ones who pass on the influential genes. Continued over generations, it's not hard to imagine how these selection pressures can accelerate in hard times such as famine or necessary migration.

A great example of gene-culture co-evolution is how well some people digest milk. Our genetic hardwiring tells our bodies we no longer need to digest milk after we are weaned from Human milk. Most people across the world lose the ability to digest milk successfully as they reach adulthood. Milk contains the sugar lactose, and this molecule requires our bodies to produce lactase to break it down. Studies show that it's common among people in Europe and a few other areas of the world to continue producing lactase as adults – how can that be?

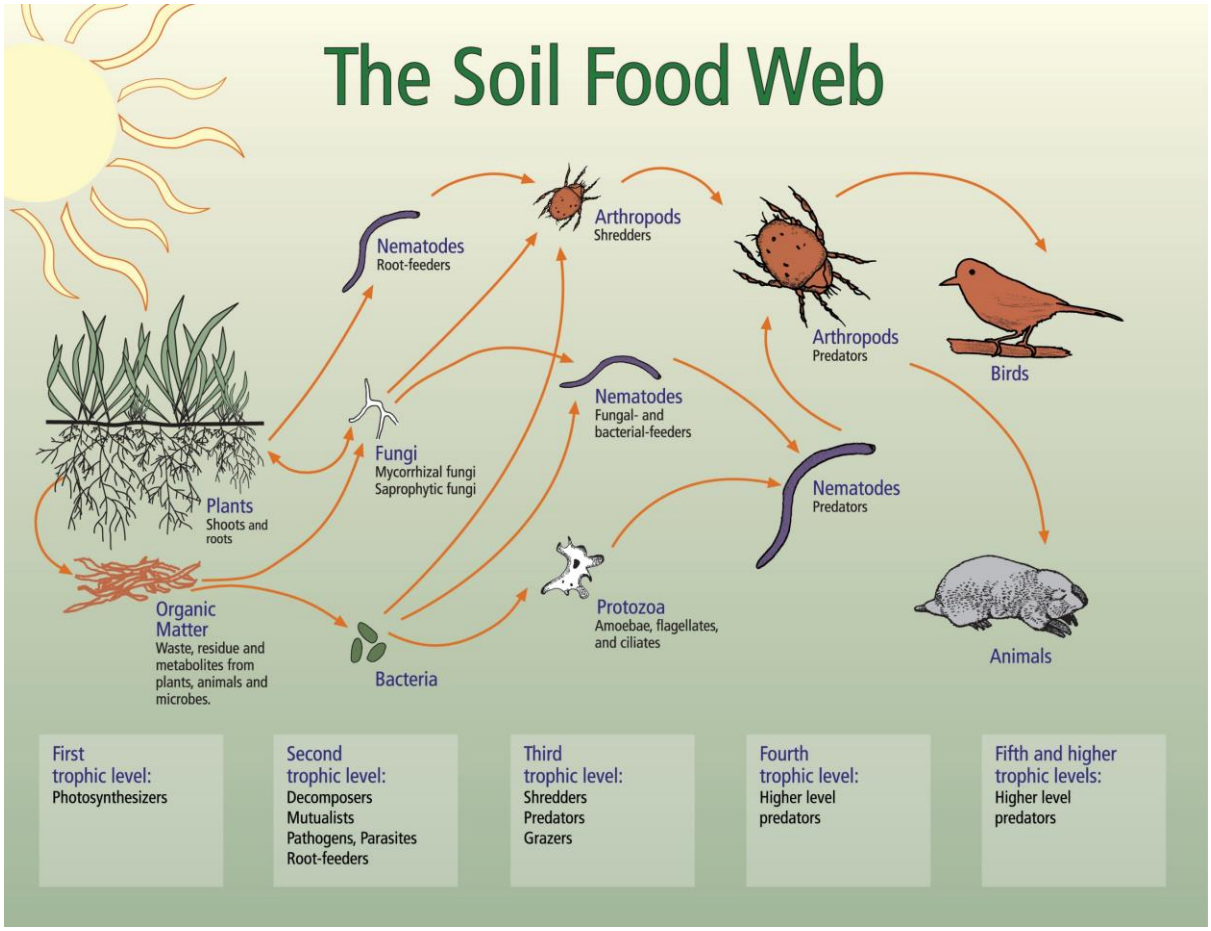


Approximately 9000 years ago certain pastoralist cultures domesticated large animals and harvested their nutrient-rich milk. Certain rare genetic variations or mutations allowed lucky individuals to thrive on this delicious product. Natural selection – over many generations – favoured lactose tolerant people, creating societies of people more able to drink milk. If you took people, who had lived for generations on a diet of wild plants, fermented milk, and starchy tubers and moved them to Alaska to adopt a local traditional diet high in fish and animal fat, you could encounter some serious digestive distress! These people have the same genetic blueprint, and both cultures can be very healthy while eating their own native diet, but selection pressure has taken their digestive capabilities in very different directions.

Just as we are beginning to understand the complex and astonishing world of microorganisms in healthy soils we are realising how important having a healthy bacterial community in our gut is to our health.

Professor Elaine Ingham says; ‘A teaspoon of the productive soil generally contains between 100 million and 1 billion bacteria. That is as much mass as two cows per acre.

The soil biota and plants have an incredible complex relationship which is mutually beneficial when the soil is healthy. In a healthy soil, the plants will thrive because the soil has been perfectly prepared to allow maximise absorption of nutrients and the plants can access nutrients through clever mutually beneficial systems of trade with some microflora. The plant's robust health coupled with the protective army of helpful critters surrounding its roots will see off disease and potentially pathogenic threats.



In our guts a similar exchange is happening – we feed the bacteria and the bacteria gives us or helps us access the nutrients we need to be healthy and protects us from pathogenic bacteria that could make us sick. Our guts contain 100 trillion bacteria and maintaining the number and diversity of our gut microbiota is critical to overall health.

http://articles.mercola.com/sites/articles/archive/2003/10/18/bacteria-gut.aspxand

Our food choices and environment can greatly influence how healthy our guts are and as Hippocrates said over 2000 years ago; "all disease begins in the Gut."

When we dress soils with pesticides, herbicides, fungicides and shake on a little – actually a lot –of chemical fertiliser to finish we kill the microorganisms in the soils. The food that is then produced from these soils is devoid of minerals and vitamins and the food is coming into our homes laced with the toxic bacteria exterminating residues.

Glyphosate is the world number one herbicide.

Aside from the potential risk of cancer and unknown effects of GMO on our bodies, ingesting glyphosate is hugely disruptive to lifecycle and function of your gut bacteria even at minuscule doses; compromising your ability to extract nutrients from your food and harming your main defense against pathogens. The bacteria in your body outnumber your cells by 10 so it's no wonder that the ingestion of glyphosate is known to have a detrimental effect on nearly every function of the human body leading to disease.

http://articles.mercola.com/sites/articles/archive/2014/04/15/glyphosate-healtheffects.aspx#_edn2

Research by Friends of the Earth has detected glyphosate residues in the urine of 44 percent of people tested, from 18 different European countries.
GM crops may receive two or three applications of glyphosate in a season while glyphosate containing herbicides may be sprayed just before harvest onto non-GM cereals, pulses, sunflowers and oilseed crops. This is done to remove weeds and dry out the grains, a process called 'desiccation.'

Once applied, glyphosate and its breakdown products are transported throughout the plant into the leaves, grains or fruit. They cannot be removed by washing, and they are not broken down by cooking. Glyphosate residues can remain stable in foods for a year or more, even if the foods are frozen, dried or processed. Some processing may even concentrate the residues; for example, during production of wheat bran the glyphosate residues may be concentrated by a factor of four.

Industry studies show that when livestock are fed glyphosate at levels allowed in feed, glyphosate residues may be present at low levels in milk and eggs from the animals, as well as in the liver and kidneys.

https://www.foeeurope.org/sites/default/files/press_releases/foee_4_human_contamination_glyphosate.pdf

Although I have no hard evidence, I know my customer's pretty well and one of the leading health conditions they have – and why they look for a meat company like ours – is that they have a condition known as 'leaky gut.'

When we gradually moved away from traditional foods and increased our consumption of processed foods, sugars, refined carbohydrates and started being exposed to an enormous range of toxins from herbicides to pain killers we see a profound drop in human health.

Weston Price reported from Government health records that in the period where the Islanders in Lewis shifted from a diet of homegrown oats, fish and offal to that of modern foods the average height in Scotland had reduced four inches!

With this shrinking of height came the 'diseases of civilisation' not found in primitive and traditional cultures such as:

Heart disease, stroke, obesity and type II diabetes, Alzheimer's disease, arthritis, atherosclerosis, asthma, cancer, chronic liver disease or cirrhosis, chronic obstructive pulmonary disease, type 2 diabetes, heart disease, metabolic syndrome, chronic renal failure, osteoporosis, stroke, depression, and obesity.

All of these conditions - which plague our family and friends - correlate with increased 'civilisation and Westernisation' all over the world.

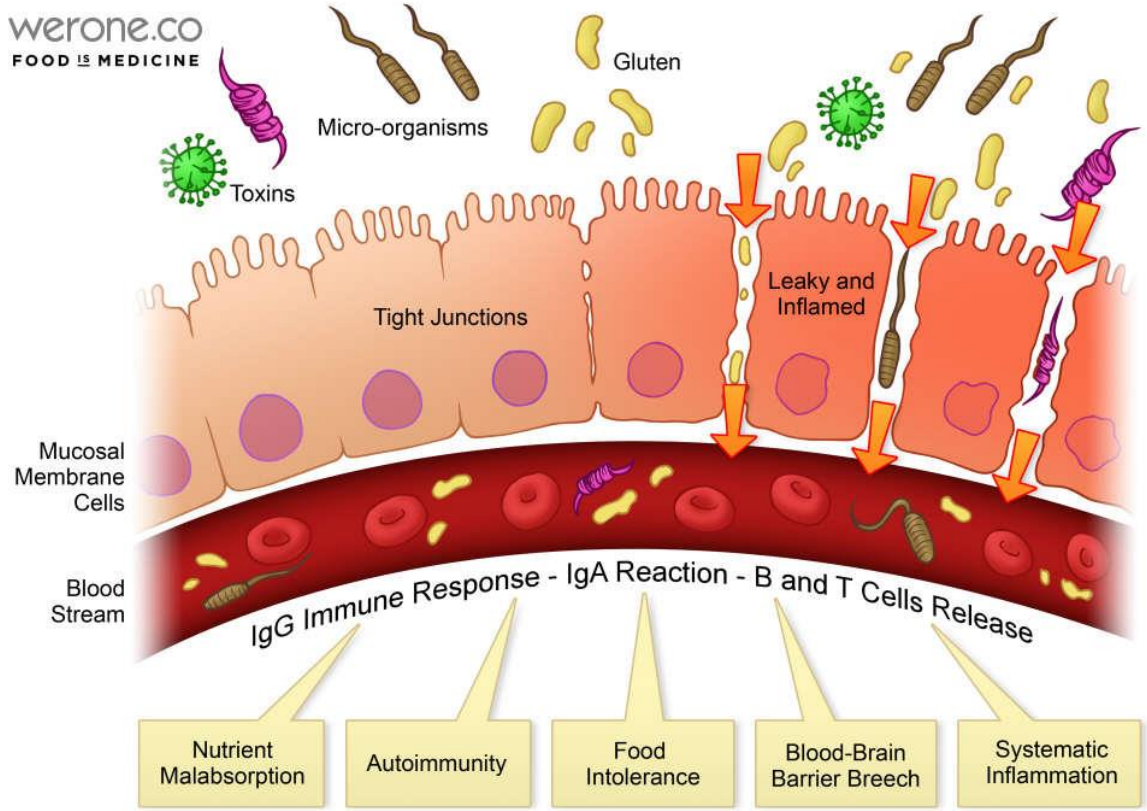
It isn't just the animals in confinement - fed grains, antibiotics and goodness knows what else - large companies have taken control of every element of what we now eat and their priority is managing their business successfully not maintaining YOUR health.

Once upon a time grains, pulses and beans - which although perhaps not an ideal human food – were tolerated by many healthy cultures were soaked, fermented and sprouted, ground entire and sometimes made into bread or cakes using naturally found yeasts and cultures. It was understood from generations of experience that these preparations would enable us to digest these foods without trouble and make good use of the potential nutrients within them. The modern grain foods of today could not be more different. Taken straight from a pesticide soaked field they are mechanically and efficiently – with the help of many chemical additives - turned into a food that offers more digestive disruption than it does nourishment.

Science now shows us that these traditional methods were critical for proper digestion. All grains and legumes contain phytic acid that blocks mineral absorption in the intestinal tract. Phytic acid along with the lectins, gluten and other anti-nutrients which are aggravating to the lining of the gut can be removed or reduced in as little as seven hours by soaking them with a dash of lemon juice. Even porridge oats used to have the recommendation to soak overnight on the packet.

By refining carbohydrate foods we also make them easier to convert to sugar in the bloodstream. When we shifted from eating meat and vegetables to pasta, refined bread and drastically increased our sugar consumption we upset the delicate balance of blood sugar management in our body. Poor blood sugar control leads to diabetes and excess insulin is toxic to our bodies causing inflammation – a leading factor in many Western diseases. Excess insulin also locks our bodies into fat storage mode; if we are snacking regularly on carbohydrate containing food, the insulin that is produced will not allow our bodies to tap into our fat stores for energy. Do this enough, and your body forgets how to burn fat; you'll find you can't go for more than four hours without feeling hungry, dizzy and weak – this is an indicator thing have gone badly wrong. Humans were designed to comfortably manage for many hours and even days without food – I doubt we would have evolved to take over the world if we had bodies that relied on regular snacks.

The result from eating all these modern foods is that the delicate lining of our small intestine is damaged – it has become 'leaky'. When your gut becomes 'leaky', the epithelium on the villi of the small intestine become irritated. This allows metabolic and microbial toxins of the small intestines to pass into the blood stream. Under these circumstances, our liver, endocrine system, lymphatic system, and immune response become compromised. This can lead to the mechanisms that cause some of our most serious incurable diseases – autoimmune diseases. When the integrity of the gut wall is damaged, nutrients can be absorbed before they are fully digested. Our bodies – quite rightly – mount an immune response and 'tag' these foods through specific antigen-antibody markers, as foreign irritants. Now every time you eat this particular food your body will have an inflammatory response – a food allergy or intolerance. Some of the most likely candidates for a reaction are dairy, eggs, gluten, grains (wheat, oats, rye), corn, beans (especially soy), and nuts.



Milk – once a nourishing and delicious source of incredibly important vitamins, enzymes and bacteria is now nothing more than white toxin-filled water.

We have gone from a dual purpose cow who turned grass into beef and liquid nourishment, to a sick Frankenstein monster of a milk cow who can barely carry her own udders, is worn out and useless just at the age a healthy beef cow would be coming to her prime. The white 'stuff' she is producing is a reflection of her diet – devoid of real and natural nutrients and the genetic modification her efficient breed has been subjected to is passed onto us in excessive hormones which harm our health.

What we then do to this 'food' is a crime; by boiling out the enzymes we need to digest it and the bacteria that helps our gut keep us healthy we have destroyed this delicious nutritious food – why anyone still drinks pasteurised and homogenised milk is a mystery.

I could go into the food processing methods of any modern food you care to mention and the story will be similar. So why – I often wonder – does anyone question the increase incidence of food intolerances and allergies over the last few decades; we are eating food like substances that our bodies do not recognise as food!

The collagen in animal joints is number one number one tool for healing gut permeability. The gelatin in bone broth heals the mucosal lining of the digestive tract. When your gut and digestive system are healed, and working well, you absorb and digest nutrients properly and you stand a good chance of returning to health.

The more I learn about nutrition the more I am in awe of how nature has packaged our food in perfect parcels full of complimentary nutrients and activators that we can simply not even begin to understand. I am ever more respectful of the knowledge of our ancestors that were to be passed

down to us in the nourishing traditions we could have learned from our forefathers has we not assumed we know better.

Everybody is different so we need to all take our own journey to find perfect health. Health must be holistic; all the nourishing food in the world won't cure you if you live in a toxic building, get no exercise, are stressed and never immerse yourself in nature.

Below is a template for the types of foods traditional healthy cultures successfully ate for thousands of years. It's clear that one of the most important factors in getting the right nutrition is sourcing food from regenerative farms that manage for soil health, animal health and produce foods that are rich in nutrients in forms that our bodies can assimilate well.

We have the power to fix our broken food system and claim back our health but it starts with increasing customer demand for this type of food. Let's all get behind this #consumerrevolution and by healing our bodies through eating regenerative foods we can heal the planet too.

Caroline x

www.primalmeats.co.uk

www.primalweb.space

BASED ON WHAT WE HAVE LEARNED FROM EVOLUTION AND TRADITIONAL CULTURES WE CAN CREATE A TEMPLATE TO WORK WITH FOR BUILDING OUR IDEAL HEALTHY DIET.

EAT THE WHOLE FOOD IN ITS MOST NATURAL FORM, AVOID PROCESSED FOODS.

EAT MEATS, MILK AND EGGS FROM PASTURED OR WILD ANIMAL'S NOT INTENSIVE SYSTEMS.

EAT WILD FISH IS POSSIBLE AND SHELLFISH FROM UNPOLLUTED WATERS.

EAT FULL-FAT MILK PRODUCTS FROM PASTURE-FED COWS, IDEALLY UNPASTEURISED AND UNHOMOGENISED. EAT FERMENTED WHOLE DAIRY SUCH AS; YOGURT, KEFIR, CULTURED BUTTER, FULL-FAT RAW CHEESES AND FRESH AND SOUR CREAM. EAT YOLKS, CREAM AND BUTTER.

EAT AND USE ANIMAL FATS, SUCH AS LARD, TALLOW, AND BUTTER, COCONUT OR PALM OIL FOR COOKING RATHER THAN VEGETABLE OR SEED OILS.

USE ONLY TRADITIONAL COLD PRESSED VEGETABLE OILS—EXTRA VIRGIN OLIVE OIL, AVOCADO OIL AND SESAME OIL AS A SALAD DRESSING OR FOR DRIZZLING ON FOOD RATHER THAN COOKING.

CONSIDER SUPPLEMENTING DHA AND VITAMIN D.

EAT LOADS OF VEGETABLES AND SMALL AMOUNTS OF FRUIT, IDEALLY ORGANIC.

IF YOU EAT GRAINS, LEGUMES AND NUTS ENSURE THEY ARE PROPERLY PREPARED BY SOAKING, SPROUTING OR SOUR LEAVENING TO NEUTRALIZE ANTI-NUTRIENTS.

EAT CARBOHYDRATES WITH FATS AND PROTEINS TO SLOW THE INSULN RESPONSE.

INCLUDE FERMENTED FOODS IN YOUR DIET.

PREPARE HOMEMADE BONE BROTHS FROM ORGANIC GRASS FED ANIMAL BONES AND USE AS THE BASE FOR SOUPS, STEWS, GRAVIES AND SAUCES OR JUST AS A WARMING DRINK.

USE SPRING WATER OR A WATER FILTER.

USE SEA SALT OR HIMALAYAN ROCK SALT AND INCLUDE LOTS OF HERBS AND SPICES.

USE COLD PRESSED EXTRA VIRGIN OLIVE OIL AND OR AVACADO OIL TO DIP AND DRESS SALADS.