

# Understanding food

## The black death of the twenty first century



We are in the midst of what has been called the black death of the twenty first century - epitomised by the obesity and diabetes epidemic.

This is a new phenomena which started just fifty years ago and it ever increasing. The root cause is how our food has changed and how this has affected our health.

Here I explain in some detail about how our food has changed and how we need to rectify our current food - which is a technical issue I discuss in the first part and how we need to change our food system which is a social challenge I discuss in the second part.

## Connect with your grower



The human body has a control system which is truly remarkable - it has enabled humans to be the dominant species from the poles to the tropics eating a daunting array of widely different foods. Our gut brain is a key part of this incredible intelligent system and has kept humans healthy for many thousands of years.

But to work it needs to be fed the type of food it needs to thrive. This comes from plants grown in nutrient rich biologically active soils which occur in a natural environment. When we had that as part of our diet there was none of the current chronic disease like obesity and diabetes where every ten seconds someone has a limb amputated.



But where to buy that healthy food?



The answer is not in highly promoted magic pills and potions but from farmers who practise regenerative farming. Access to healthy food is not going to come from big business or Governments - it is going to come from a social movement with people taking the initiative to access healthy food. We need an alternative food system.

The aim of this web site is simple - to connect people who want to eat a healthy diet with regenerative farmers. In essence it is an e-farmers market for regenerative farmers.

To understand how food affects our health we really need to learn the history of how soil developed and how forward thinking farmers are regenerating their soils.

## The diet debate

Anyone with an interest in food and has tried to fathom out the literature would have been astounded by the intensity of the debate on diet among highly qualified health professionals.

The problems stem from the way food is classified as carbohydrates, protein and fats which are based on the chemical structure of the food.



I want to take a different approach and classify food by what it actually does e.g. **energy** - (to provide the power for our body and so we can move),

replacement (throughout our lives we are continuously replacing our body parts) and food to feed our **gut biome** (a critical part of our intelligent control system).

## Food for energy

Our bodies can burn pretty well anything we put in our mouths for energy. If they contain carbon and hydrogen it will use the oxygen in the air we breathe to form carbon dioxide and water and release energy - just like in any other thermodynamic machine.



If you think about a steam engine - it burns fuel in a boiler to produce steam and it really makes no real difference what the fuel is as long as it burns, it could be coal, wood, oil, gas or just plain rubbish - as long as it burns.

It's pretty much the same with our bodies - we can burn carbohydrates, sugars, fats or just about anything we eat as fuel for energy.

There are some subtle differences - if we burn carbohydrates our intelligent control system tells the pancreas to produce insulin - which can be a problem if we eat too much carbohydrates and we become insulin resistant (which nowadays we tend to do - keep on reading).

But if a normal healthy person just happens to eat a bit too much carbohydrates our bodies simply turn it into fat which we will store until we need a bit of extra energy - no big deal.

Fats may appear to be a better energy source as they do not lead to high blood sugar levels and trigger the production of insulin. Or maybe not - just keep on reading and I will explain more.

The key point to remember is that fuel is chemically pretty simple - any old combination which contains carbon and hydrogen makes a useful fuel.

## Food for replacement

As soon as we are borne and start feeding, hopefully from mum's breasts - the best food for babies, we are busy turning that food into body parts - it's called growing and babies do it very well.



But our bits keep on wearing out so throughout our life we are continuously replacing these bits, some bits like nails, hair and skin are very obvious but there are very few bits of us that are not being continuously replaced. I am definitely not the man I used to be - I have been rebuilt many times.

Now the key point to take away here is that unlike the very simple fuel we burn for energy our body parts are made of pretty complex chemicals.

Going back to our steam engine, someone will be responsible for maintaining the engine. When say the bearings wear out they will be replaced with new bearings probably made from a special alloy like phosphor bronze.

It's the same with our bodies, we need a whole range of complex chemicals which may be based on a range of essential minerals like chromium, iodine, selenium, zinc etc.



Take chromium for example. While toxic in high quantities it is essential for controlling blood sugar (therefore important for diabetics) but we can't just go and chew on an old car grill - there is really a chain of events.

The chromium may initially be contained in rocks in the soil, these are broken down by the micro-biology in the soil which makes them available to plants, which will in turn convert them to complex chemicals, often referred to as phytonutrients, which we will then eat so eventually we end up with our dose of chromium.

Most of the complex chemicals we need for replacing our bits come from the soil but there is a similar process going on in the sea with plankton, algae and other creatures processing these chemicals which eventually we will end up by eating as some form of sea food.

## Food for our intelligent control system

Going back to our steam engine analogy, say a modern power plant, and thinking about how it is managed we see there is a complex system in place.



There will be a maze of sensors measuring all sorts of things from pressure, temperature, voltage which will be fed into a central computer which will decide to increase or cut down on say fuel requirements - and this will be totally automatic. However there will still be a human watching the computer screens and may take overriding decisions if needed.

Our bodies are similar - if we have to run to catch a bus our intelligent control system will send out instructions right across our bodies, telling us to breath faster, the heart to pump faster, our blood to send extra energy to our muscles and our muscles to give that spurt.

We have absolutely no control over our heart or breathing rates or how much sugar is being supplied to our muscles - all we can do is to decide to make that extra effort to catch this bus or relax and catch the next one.

Similarly after we have caught the bus and system has settled down we have no control over whether we feel hungry or tired, but we can take a conscious decision to have a quick snack or take a bit of a rest.

## **Our gut brain**

Our gut biology is a critical part of this decision making and our gut brain not only needs its own special diet (which it normally gets from plants) but will change with what we actually eating.

If we are continuously stuffing ourselves with sugar we will develop a gut of sugar loving bugs which will send out signals telling us to eat more sugar. If we obey we will get more sugar loving bugs and Houston we have problems.

We can of course take the conscious decision to eat the sort of food that leads to a healthy gut, the sugar loving bugs won't like it and will give us a hard time with food cravings but they will simply die off after about three weeks - if we can stick it out that long.

## **How our food supply has changed**

It really helps to understand the current chronic disease epidemic by going right back in time to the beginning of the earth - some four billion years ago.

It was just dead rocks with nothing living - but somehow and who knows how - some micro-organisms appeared - we guess they were rather like the lichens and mosses that we have nowadays and which play a vital role in regenerating soil in lava flows.



They started to attack the rock and break them into soluble compounds. The process was pretty slow as there was no energy source so it took a billion years or so for anything much to happen.

But then life broke loose - there was enough broken down rock (pre-soil) for some plants to put down roots and survive. The plants could photosynthesise and produce energy which they kindly fed to the micro-organisms in the pre-soil and in a blink of an eye (in anthropological time scale) we had real soil, plants growing like wild plants pumping energy into the system which could feed insects and animals that ate the plants and then more animals that ate the animals that ate the plants.

## **The green big bang!**

It is estimated that trillions of species have existed but most have become extinct by the process of evolution.

There are two things we really need to note about evolution.

The first is the role of sex. Now for me sex was invented in 1950 but actually it had been around a lot longer and has had a remarkable impact on the health debate simply because it led to an incredible variation between creatures.

Modern diet and health science has been frustrated by conducting massive epidemiological studies on large populations, conducting statistical analysis to develop what was hoped would be general laws of science. Unfortunately when these 'laws' were applied to specific individuals they often did not work simply because people are so different.

The second point to note is that from the enormous range of creatures which occurred from the diversification caused by sex a few creatures were actually selected to survive with the rest simply dying out because they could not breed.

### **The hairy tree dwellers**



Some seven million years ago some hairy creatures came into existence with a peculiar innovation - hands.

Now it may seem that in an age where particularly large and ferocious creatures with very large teeth, roamed the earth that hands would not offer much benefit.

But evolution is rarely obvious and hands it turned out had a particular advantage, not as a means of defence or for tool making - that would all come much later - but because it enabled the creatures to swing from branch to branch in the forest.

The large and ferocious creature with big teeth were simply not capable of catching these branch swinging creatures. Even tree climbing creatures like pre-leopards had no hope of catching these branch swinging creatures.

But what is the point I am making? By the nature of diversity some of these branch swinging creatures would have been fat. Six million years ago that was not a good trait as they would have fallen to the ground and been quickly gobbled up by some ferocious creature like a pre-lion.

Now it is pretty difficult to breed from within a pre-lions stomach so that particular type of branch swinging creature would have very quickly become extinct.

### **We have evolved not to be fat**

Humans have simply evolved not to be fat - it is an unnatural state and even throughout modern history the vast majority of people have not been fat. Even the probably most famous fat man in modern history Henry the Eighth was not naturally fat.

The epidemic of fatness and diabetes is totally unnatural and is something we have brought upon ourselves and by implication something we can cure ourselves.

It is really quite simple - it is food.

## Paleo man

The debate between the paleo backers and the vegans is nothing compared with the debate between paleo man himself and the antelope.



Paleo mans view was the the antelope should quietly stand with a friendly notice saying antelope prime rump steak \$2.Kg please self serve.

The antelope did not agree and simply ran away. Now antelopes are pretty good at running and even the fastest animal - the cheetah which can reach 120kph has only 400 metres to catch an antelope

before he is left in a panting heap.

So poor paleo man was left without almost no hope. But we know from modern paleo man how he caught the antelope - well before the invention of the bow and arrow or spear.

Humans may not have many plus points over the ferocious beasts but they do one thing remarkably well, they walk and walk.

So for the next day and beyond paleo man would keep on walking and walking after the antelope, may be travelling 20 kilometres and taking all day until finally the poor exhausted antelope would lie down and say 'OK you won, just make it quick'.

The modern day paleo debate would make far more sense if people had to walk 20 kilometres to the butchers.

## So what can we learn from paleo man

If we look at the traditional paleo diet in terms of the three jobs that food does we would see that energy was on the critical list. The high energy food had an annoying habit of running away, glucose from plants took a lot of extracting to get the energy so paleo man was obsessed with getting enough energy food.

And modern man is equally obsessed about energy, whether its a dietitian, a food expert trying to solve the worlds hunger problem the debate is always how to get enough energy. We have evolved to be obsessed with energy foods.

The paleo man never had to worry about replacement food or food to feed his gut biology. That was available in abundance from native plants growing in nutrient rich soil.

## From energy to gut food

In modern society the tables have been completely turned. The heated debate on whether we should get our energy from carbohydrate or fats is almost irrelevant, we have an excess of both.



Modern soils are becoming degraded and low in some of the critical trace minerals so there could be a significant percentage of the population who are low in replacement food.

But the real crisis is in food to feed our guts which is a critical part of our intelligent control system.

Even if our intelligent control system were healthy it would still be sending out messages 'you are low in critical minerals and phytonutrients so go out and eat some more'. The problem is that we would then go out and eat more of the energy food which is in abundance.

But the situation is worse than that. We are not just starving our poor gut biology we are also poisoning it. Modern agriculture uses simply staggering amounts of chemicals which initially kill the soil biology which is essential for releasing and making the minerals in the soil available to the plant. But if that is not bad enough those toxic chemicals get into our food.

There is a lot of debate whether these chemicals are harmful to the human body and there has been some spectacular cases of chemicals being suspect in cancer.

But what is not a subject of debate is that these chemicals harm our gut bacteria - that is what many are designed to do - kill bugs.



So it seems clear that the modern black death is caused by food with excessive energy (whether sugar or fats) a lack of minerals and phytonutrients but above a lack of foods which should be feeding out gut biology but instead are poisoning it.

It may be colloquial but the modern black death is because we have screwed up our intelligent control system which has evolved over millions of years to effectively control our appetites - how much and what

we want eat.

## **Diversity and general laws**

People vary greatly so we must suspect general laws of diet that apply to all people, simple observations show that some people have a digestive system that can handle large amounts of fatty food without problems - while other can't.

But one general law of diet we can trust is that we need a healthy intelligent control system which means a healthy gut and that comes from eating plants grown in nutrient rich biologically active soil.

The concept that healthy bodies come from healthy soil has been around since the times of Aristotle but the issue we face in our modern society, with it's chemical industrial agriculture, is how do we ensure we are eating food grown in healthy soil.

This is not an issue of technology, I and many other people have been researching and writing on healthy soils for decades (see [www.waterright.com.au](http://www.waterright.com.au)).

The technical answer is really very simple - soil was originally created by microbiology breaking down rocks. We can readily repeat that process by adding volcanic rock dust to

our soils and feeding the microbiology, for example by adding compost to the soil and using cover crops.

To create healthy soil simply needs mineral rich rocks, microbiology to break down the rocks and plants to supply the energy.

There are many farmers who understand regenerative agriculture and technologies like the Gbiota beds have been developed specifically to grow crops in biologically active nutrient rich soils.

We face a social problem rather than a technological problem.

## **How people can access healthy food**

The human species has some remarkably contradictory characteristics. We are a highly social animal - to survive as a species we have evolved to form communities and cooperate together. We are intrinsically a tribal creature with individuals within the tribe putting the long term benefit of the tribe ahead of their own short term interests. This worked extremely well right up to recent times when food was local, the community would cooperate together so all members of the tribe ate healthy food.

But humans have a nastier side - they can be lacking in empathy or outright aggressive to other humans who are not members of their tribe. Archaeologists report that many of the skeletons they discover show injuries which could only have been caused by the weapons of other humans and you only have to turn on the TV to see modern day aggression and lack of empathy and foresight.

And nowhere is this more self evident and important than in our modern chemical industrial food system.

In the long term there is no technical debate on whether we are destroying our soils and our future food production - it is just self evident. Yet we do it.

In the short term there is no technical debate on whether our modern food, high in sugars and fats, low in nutrients and contaminated with toxic chemicals is the root cause of the black death of the twenty first century - it is just self evident. Yet we do it.

And the reason we do it is because we live in a system which puts the short term profits of the few ahead of the food security of the world and the health of the global population.

So we need an alternative system which puts the food security of the world and the health of the global population ahead of short term profits.

## **The alternative food system**

We can't go back to the old village system where you got your food from the local farmer down the road - you can't un-invent things and anyway the concept of the 'good old days' is just a myth - life in the past was pretty miserable. We have to use modern technology and make it work for the benefit of the people - not just the few.

**And this is how we can do it - we need to understand the power of community.**



I want to eat healthy food and I want my diabetic wife to eat healthy food. I understand very well that her diabetes came from eating modern food produce by the chemical industrial agriculture system.

I would like to go to an enlightened grower who believes in the benefits of regenerative agriculture and is prepared to grow healthy food and is prepared to sell it to me.

But I am just one person - it takes a lot of work and energy to change from chemical industrial farming to regenerative farming and it just a simple reality that on farm costs of regenerative farming are higher than chemical industrial agriculture.

**It simply won't happen with just one person.**

But if many people within the community said to the farmers that we all want to buy food grown in nutrient rich biologically active soil grown by regenerative farmers then you can be sure the farmers would listen.

**But it still may not happen because of cost.**

But if we had a system where many people could buy **directly** from the regenerative farmer and then a delivery van could go around to **all** the farms and collect **all** the orders from **all** the farms then go around to **all** the people and deliver the produce directly to their homes we would have a system where people could buy healthy food at prices which would be competitive if not cheaper than the chemical industrial system.

This is what the pickandeat.shop website is all about. It is system of forming a community where people can buy healthy food grown in nutrient rich biologically active soil directly from regenerative growers.

**So please register**

So if you want to buy healthy food your first step is to register, when you register you can also list the types of food you want to buy from a regenerative farmer.

A little icon will appear on the map which tells the would be regenerative farmer that there are people out there who want to buy produce grown by a regenerative farmer.

You can chat and email the farmer and we will create a community of healthy eaters and regenerative farmers.

**We can make this happen - it just needs you to kick the ball and get it rolling.**

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