Food for health

Evolution and solutions

Do we really want our kids to grow up fat and diabetic, mums need to be eating food that feeds their gut biology, that's what this story is all about.

Humans are the most successful creature on the face of the earth. There are 7.9 billion of us, because of our intelligence. Our tools and technology are only part of the story, we also work cooperatively together for our mutual benefit. At least most of the time.

The internet and our TV screens are the wonder innovation of our time. By providing the public with access to the vast pool of world knowledge they should be creating equality throughout our society. And in the early days of the internet they certainly were.

But no longer, they have become the centre of deception with manipulative promotions to sell product that don't

provide any benefits for the bulk of us humans - just benefiting a few already rich people.

No where is this more true than in food, despite years of advancement in medical science leading to a steady increase in life span we are now actually dying younger and worse become decrepit and infirm in our cold age.

Diabetes, dementia and obesity are everywhere and the health epidemic have been described as the black death of the twenty first century.

I have spent my life in technology and innovation, I was a pioneer in the early days of computer and believe the information revolution in which we live can bring great benefits for humanity.

But the way it is being misused is creating the sort of world which I, and my importantly my grandchildren want to live in.

I was recently selected by the Institute of Engineers as one of the top one hundred innovators in Australia for my pioneering work on computer aided engineering. Now lets be clear - being a successful innovator is not just about having a brilliant mind, in fact I have a mental defect - I have

a terrible memory. My spelling is awful, my grammar can best be described as creative.

At school I was terrible at languages but good at science by a simple trick. I learned that if you really understood the basic underlying principles you simply did not have to memorise all that mass of facts - you could just derive them from the underlying principles.

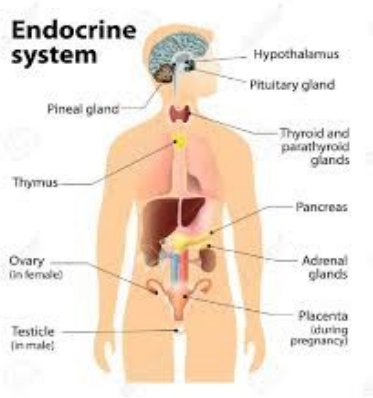
But by really trying to understand the basic principles you sometimes see that they are just not really true - you end up becoming a paradigm buster which is what innovation is really all about.

And nowhere is this more true than in food. What we are told about food, particularly by the mega corporations, is not just not true - it is damaging our health, making us decrepit and infirm in old age and making us die young.

This is my attempt to change that. I have been trying to fathom out how food really works and to do that I have to go back over time to see how we have evolved. The human body and mind is incredibly sophisticated so we cannot truly understand how it works but we can learn a lot by studying how we have evolved.

But understanding is not enough, we need to apply this understanding in a way that benefits society so I finish with solutions.

Episode 1 tribal thinking and the good bugs



We have evolved over millions of years an intelligent control system, with the trillions of cells in our guts communicating with a head brain to manage our entire body and enabling us to thrive on a wide range of different foods and different climates.

We have learned to cooperate in groups, our tribal behaviour.

We learned, hundred of thousand of years ago, that to survive in a hostile world we needed to cooperate together by forming tribes - typically small family based groups. The number one priority was survival of our tribe and we were often quite hostile to other tribes.

As our technology improved the tribes became bigger - turning first into Nations and now mega corporations, which span the world, as large as many Nations.

Today our tribe is likely to be the company we work for.

But the focus is still on survival of our local tribe without great concerns for the other tribes.

We see this in the speeches of our political leaders and the commercial behaviour of the mega corporations putting the interest of the local tribe ahead of others tribes (or society)

We kill people by the millions in modern wars but historically it has never been a threat to humanity - returning soldiers simply continued their toils with a bit (or lot) of hanky-panky between the sheets.

We have avoided a major atomic world because not simply because they are so big and powerful but for fear of something which would kill everyone including our leaders - radiation. This could so easily be the end of humanity that it is inconceivable by any sane leader.

Food technology

It is the same with food - chemically it is easy, well within current technology, to produce all the energy food we need from coal or oil and already much of food is produced with chemicals.

It would be a challenge - but there is a good chance - with the appropriate investment in technology - we could produce food containing all the micro nutrients needed to replace our body parts.

To produce the food that feeds our intelligent control system - which manages our bodies - is way beyond any technology we can currently conceive.

But with our modern food technology this focus on benefiting our tribe is is now putting us on a road no one wants to go down - the destruction of our soils which have evolved over millions of years to provide us with the balance diet we need for survival.

For the human species to maintain its current success our thinking need to evolve from what is good for that tribe makes it's money by producing chemicals which kill our soils and intelligent control system (largely in our guts) to thinking about what is best for the bigger tribe - the human species.

If we want to be healthy we need to eat healthy food, and healthy food comes from healthy soil, and healthy soil comes from the good bugs.

Stop killing the good bugs

Some four billion years ago the earth was simply lifeless rocks - but along came highly beneficial microscopic creature - the good bugs - which turned

the rocks into soil and life exploded on the earth with literally trillions of experimental creatures - now mostly extinct but we were the great survivors.

Our lives still depend on the trillions on trillions of beneficial bug in the soil and in our guts.

But our focus on the benefits to our local tribe while ignoring the impact on humanity as a whole is leading us to inflict terrible damage to the world that supports us.

I won't mention climate change (I will leave that to Greta) but we are doing far greater damage - we are killing of the good bugs that create soil and also live in our guts forming part of our intelligent control system on which our life depends. Without the good bugs our soil are deficient in available minerals and we are suffering from what has been called the black death of the twenty first century.

We need to listen to Greta Thunburg and put the needs of humanity ahead of the local tribe. How often do we here the president of the Pitcairn Island, population 50, or some other country, maybe I am getting confused - say 'make the Pitcairn's great again regardless of the effect on the rest of the world.

Tribalism worked great when there were just a few of us and we needed to cooperate as a tribe so we weren't eaten by

ferocious beasts with big teeth but now we don't need to worry about ferocious beast with big teeth - we need to worry about the our technology being so powerful it could destroy us as a species. And the biggest threat may not be climate change but the destruction of our soils on which we all depend.

That is why we need to move on from tribal politics and support regenerative agriculture which grows the healthy nutrient rich biologically active soil on which all our lives depend.

It is so simple.

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 and labelled non infectious diseases which includes strokes, heart attacks, dementia, liver failure and more.

This is a new phenomena which started just fifty years ago and it ever increasing. Some of the best scientific brains in the world have focused on reversing this epidemic and the

science of bio-chemistry has reached a high level of sophistication.

However the practical results have been disappointing with the epidemic increasing in prevalence, now even affecting our children.

It is now clear that the problem is more than bio-chemistry as our bodies have a highly sophisticated intelligent control system, which as yet we really do not understand, but is at the heart of the epidemic.

Hopefully at some time in the future we may fully understand how this control system works but in the short term we know that this intelligent control - system which manages how our bodies work - is determined not just by the type of food we eat but how it is grown.

There is a path from the soil, the minerals and biology in the soil to our gut biology and how our bodies manage our food and determines our health.

The root cause is how our food has changed over the last fifty years and how this has affected our health.

Fortunately some enlightened farmers are adopting regenerative agriculture for the long term sustainability of our food system but this could also be the solution to the health epidemic.

This epidemic is not going to be solved by simple slogans, ***eat less exercise more***, ***avoid fats or carbs*** or adopt some other fad diet. People really need to understand what

is happening with their food and health and this realistically takes a bit of time and effort.

Now I could write a long and boring thesis on how food affects health and how we need an alternative approach to agriculture but you probably wouldn't read it unless you are in the waiting queue to have your legged chopped off from diabetes so instead I am going to tell the story of how we got into this mess - which is much more interesting.

I have tried to make it fun to read and I can't talk about food and health without talking about poop, and bums, and what happens inside our guts and poking fun at some of the weird things that humans do - so apologies if this offends and particularly to Kim Kardashian who may have a very nice bum but typifies much of the problems of fake information.

It may not have the social impact of Greta - but I am a grumpy eighty year old man not a cute sixteen year old kid but throughout my life I have been a successful innovator and developer of new technology and this is the one step I can take to improve our society by linking people who want to eat healthy food with regenerative farmers.

Food for health

Episode 2 The story of the world- once upon a time

All good stories start with 'once upon a time' time in our story it is 4 billion years ago. The earth was dead, just rocks with no living thing. Then along came some bugs or micro-biology - we don't know where they came from us we can't read the embroidery on their uniforms so we guess from outer space.

How our food supply has changed

We guess these micro-organisms were rather like the lichens and mosses that we have on rocks 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.

We tend to think of bugs as bad, and indeed many bad bugs came along later.

They would give us anything from a snotty nose to a particularly nasty form of sadism in which they would make us seriously ill so all we could do was lie in bed. They would not kill us straight away but would breed up inside us, and then when they had a large enough army they would move onto the next victim not caring whether we lived or died.

These bad bugs are a major challenge for the most talented spin doctor.

But the early - soil making - bugs were definitely good and had they not come to our planet it would still be just a mass of rocks with nothing living. No humans, no late night films or music and dancing - just dead rocks.

The greatest deal of all time

This is when the greatest deal of all time was struck, even Donald Trump could not image such a powerful deal.

The deal was this - the plants would capture energy from the sun and using carbon from the air and water would create sugars which they would feed to the bugs and in return the bugs would break down all the rocks into minerals and nutrients for the plants to feed on.

And what a deal - life simply exploded on earth with a totally amazing collection of weird creatures which had never existed before and most would disappear never to be seen again.

The greatest invention of all time

At this time we had the greatest invention of all time - sex. Now this was much more important than a simple hanky-pancky between the sheets on Saturday night - it led to variety.

There were some creatures which didn't bother with sex and simply reproduced but their kids were just mirror images of their parents so they never developed their species. Talk about being stuck in rut.

But the creatures that though that sex was a good thing (which was most of them) had kids that were different from them and this allowed evolution to cast its magic spell.

We tend to think of evolution as survival of the fittest but that is not really how it works. Just being able to get enough

food or avoid being eaten by another creature is the easy bit. The difficult bit is being able to breed.

So the world was filled with the greatest collection of weird creatures that the world has ever seen or will ever see again.

The dinosaurs

Eventually the dinosaurs became the dominant species. The first dinosaurs looked at all the vegetation - which was everywhere - and just got stuck into eating. It takes a lot of eating to get all the energy they needed from the vegetation around at the time.

Some dinosaurs looked at all the eating that was needed and looked upon the amount of work involved with a look of complete disdain.

The sort of look of disdain my granddaughter gives me when I suggest she may like to clear the table and put the dishes in the dishwasher.

So they though this was for the birds (which is appropriate as that is what they eventually evolved into) and decided to sit around watching the other dinosaurs eat and when they were nice and full and fat they would simple eat them.

Evolution may have given us chocolate and honey but it has a nasty cruel side.

And they evolved over a few hundred million years to become very good at eating other creatures which meant

that unless you were very big and strong the chances of survival were pretty small.

Evolution – never perfect

Now evolution never produces the perfect creature - just one that is better than the others so even the giant dinosaurs had a defect. They were cold blooded and needed the warmth of the sun to give them the energy to chase and eat other creatures.

Which meant eating was basically a daytime activity - no late night cafes for the dinosaurs.

But evolution is simply totally remarkable and if there is a hole in the ecology then given enough time something will evolve to fill that empty hole.

And this lead to the greatest computer the world has yet seen.

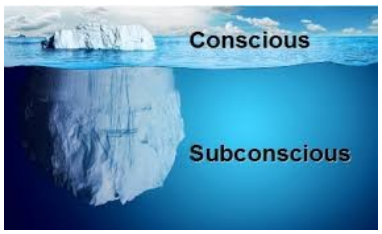
The world smartest computer

The most remarkable achievement of evolution is what happened next - even more remarkable than the evolution of eye sight which is pretty remarkable.

And it wasn't some giant dinosaur weighing sixty tonnes - which the big guys weighed - but a tiny mouse like creature weighing some twenty grams (which I call Mickey).

Now if you are a sixty tonne dinosaur - even with limited intelligence - you would quickly work out that you would need to eat an awful lot of twenty grams mice like creatures to feel even the slightest bit full so they wasn't particularity interested in wasting energy chasing such a tiny creature.

But this little creature developed one of the most remarkable achievements of evolution (even more remarkable than the development of eyes) - the development of intelligence.



There are two types of intelligence - the conscious intelligence which enable me to tell this yarn and the unconscious intelligence that will tell me that in a few moment I will need to go to the toilet or make myself a cup of tea.

Now Mickey - our little mouse like creature - used his intelligence to work out that if you put a 20 grams creature in a boxing ring with a sixty tonne dinosaur that the chance of the 20 gram mouse landing a knock out blow was more than remote.

So he used his new found intelligence to decide that in the day time he better hide in some hole in a tree. That solved one problem (avoiding being eaten) but still left one more.

Even a twenty gram mouse like creature needs to eat and if he couldn't eat in the day time when the sun was powering the giant dinosaurs that he better go out and eat at night.

Given enough time (and we are talking millions of years here) evolution can lead to the creation of the most amazing biological innovations.

Now when I tell you what the greatest innovation of all time that evolution has produced you will probably roll your eyes with even more disdain than my granddaughter can manage when I ask her to put the dishes in the dish washer.

Because the greatest biological innovation of all time is warm blood.

Give us a go

Yes I know - at first reading that sound ridiculous and you may be wondering what white powder I am taking - but give us a moment and let me explain why this is such a technical breakthrough.

Think about our sixty tonne dinosaurs (or a modern snake or lizard if you prefer). They go out and catch a meal then just lie about until it is used up then they wait for the sun to come out and catch another meal - there is simply no control needed - just fill her up when empty.

But to feed in the cold of the night our little mouse like creature had to make a major evolutionary breakthrough - he needed to keep warm at night.

Now to do that he had to undertake a major study. First he had to learn about exothermic chemical reactions and how if

you burn carbon and hydrogen you create heat. No big deal - any school kids knows about exothermic reactions. But school kids just love the big bang when something explodes but our little mouse like creature had to find a way of burning the carbon and hydrogen slowly so it gave a steady release of energy.

So our little mouse like creature went to the local school library and spend the first moonlit night reading about how sugar (glucose) can burn slowly giving a steady stream of energy - but there was a snag (as there always is).

He didn't have a way of storing large amounts of sugar but on the second moonlit night he read about how sugar could be converted into fat which could be readily stored in large quantities - as long as you could put up with having a big bum. The fat could then be quickly converted back to sugar and burnt when needed.

Problem solved - well not quite - now we come to the real smart bits.

So on third moonlit night he got out all the University engineering department books and learned about

proportional, integral and derivative (PID) control which allow engineers to control everything from tiny engines to giant power stations together with the basic laws of thermodynamics.

Problem solved - well not quite - he needed a way of measuring his temperature.

So on the fourth night he went to University medical department and read all about hormones like leptin and ghrelin and so many more that could help control his body.

Problem solved - well not quite - all these chemical hormones were really just messenger boys and really didn't control anything directly.

So on the fifth night he went to the computer science department and learned all about how computers could appear to be intelligent by using coding like - if this then that else something else.

Problem solved - well not quite - with all this technology he still couldn't work out how to solve the apparently simple problem of how to keep himself warm at night.

So on the sixth night he went to the University anthropology department and read all about evolution - how by a simple process of having a system of natural variability (which comes from the invention of sex) and the rather cruel process of failures (like not being able to breed) that given enough time the most extraordinary creatures could be developed.

So on the seventh night he decided not to go to the

University library and instead have a wild night of passionate sex with Mary - the lady mouse like creature in the next tree.

And it worked - it may have taken a few million years but at the end of the process there was a warm blooded creature which could hide in the day time and go out into the cold night and get enough food to eat to keep himself fed and warm.

A load of rubbish – yes of no?

Is all this a load of rubbish? Well obviously you have spotted the flaw - a mouse does not have a pocket big enough to store a library card. But there is a real - non fake news - moral to this story.

We may think that with all our modern technology we are pretty smart and understand everything we need to know about the world. But it just isn't true.

Evolution has been working away for some four billion years and has produced the most complex and sophisticated creatures and plants which is way beyond the technology we have at our command. We can't even make a dandelion plant from scratch while nature can not only make them but ensure they are totally indestructible.

Of course we must make maximum use of the scientific process but we must also recognise its limitations and be

prepared to learn from the evolutionary process (nature) as well.

At this point in the storey I should be able to say - so they all lived happily ever after - The End.

But no - in the next episode I have to tell you about the alcoholic captain of a billion tonne meteorite.

Food for health

Episode 3 The alcoholic captain of a billion tonne meteorite

But the story goes on as a result of the alcoholic tendency of the captain of a billion tonne meteorite who had failed to read the instruction about no alcohol for twenty four hours before taking change of a billion tonne meteorite so he accidentally crashed it into the earth.

Which was not good news for the dinosaurs as the dust it kicked up made the earth very cold which is not good news for sun loving cold blooded dinosaurs who either died or turned into birds.

But our little mouse like creatures, Mickey and Mary, thought it was the best thing since sliced bread (spot the timing error?) and immediately got busy in the hanky-panky department with the lady mouse in the next tree - leading (after a few million years) to a wide variety of warm blooded creatures of all shapes and sizes who found all sort of ways of breeding in what was becoming a rather aggressive place full of rather large creatures with big teeth.

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 at high speed.

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 Eight was not naturally fat but became fat after a serious injury.

The modern 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.

The evolution of hands

One such creature was our great great (plus a few more greats) uncle Joe who had worked out that having hands meant he could spend his life swinging from tree to tree without worrying about being eaten.

The evolution process was still at work and some of Uncle Joe's relatives got fat and fell from the tree and were promptly eaten by a creature with big teeth so all those members of the family who got fat quickly died out and only those who had evolved the mechanism for having just enough fat to provide their food needs survived.

Or in plain language humans have evolved not to be fat - it is an unnatural state.

Now that should be the end of the story - The End but no not the end -

But then - as happen when you talk about evolution over millions of years another event occurred which changed the future of the world. It got cold (again).

Episode 4 We become tribal

At the end of the last episode we had our great, great, great Uncle Joe happily swinging from branch to branch in the trees - not being eaten by ferocious animals with big teeth and then it got cold and -

Where have all the trees gone?

And the trees just disappeared - which for a creature which depends on high speed swinging from branch to branch was not good news (at all).

One brave creature tried to avoid being eaten by the ferocious monsters living on the ground by throwing stones at it - but sad to say it did not work and he was eaten all up never to breed again.

But the other creatures looking on decided that being eaten up was not good so there may be something in the idea of throwing stones at ferocious creatures.

So next time a ferocious creatures came along they all picked up stones which they threw with high energy as though they were about to be eaten - which of course they were.

But the ferocious beasts at first ignored the hail of stones and got closer and closer when they began to realise that these stones really hurt and perhaps they weren't all that

hungry after all and anyway there was far more meat on an antelope which did not throw stones.

An epic day for the world

This was truly an epic day for the world as Great Uncle Joe and his mates realised that working together meant the difference between being eaten or eating so it became quite popular and our tribal characteristics - which exist to this day as can be seen at any Saturday football match.

Now we know how evolution works - people didn't suddenly change and became matey and working together. May be Bert and Fred said ‘stuff this matey stuff - I am doing it my own way - which meant they were eaten up by ferocious creatures with big teeth so they had no kids and gradually the humans that survived evolved to be matey.

Life would have been wonderful and I could finish the story by saying - so they all lived happily ever after. The End.

But evolution is not that sort of story and along came the bad bugs which had this nasty habit of killing us came along.

About half the kids borne would die before they reached five years old, then another half by thirty and yet another half by the time they reached sixty leaving just a handful of old people who actually lived onto a ripe old age fulfilling a vital role for the tribe of caring and educating they young so they learned all the skills of survival.

You stole my woman

But this high death rate had an after effect which lives on till this very day. Men quickly worked out that however matey they got around the camp fire it did nothing to actually increase the number of children and that women were really needed so they became a highly values item.

In those days there was no internet, high speed trains or even cars so although there were lots of tribes they really had very little contract with each other.

But as happens in life sometimes they would meet up and at first they would certainly have been curious and maybe even a bit friendly until they noticed that the other tribe had women - which could be used for child bearing. So they stole them after which the tribes became much less friendly - in fact inter tribal war became a feature of life.

We know this from archaeology where many of the bones show clear signs of attack by human weapons.

This led to one of the strangest characteristics of the human race, the ability to provide intense support for members of your own tribe and intense hostility to members of other tribes. How do I know this - I watch the news. Story after story of conflict as leaders leads their tribe into conflict with another tribe or more commonly one big company gobbling up other smaller companies to create neo-monopolies - a sad feature of modern society.

Of course it wasn't all conflict - sometimes they traded. The classic case was the silk road. The Chinese had silk but no big horses but across the desert were tribes with really big horses but nothing nice to wear for a night of hanky-panky so they traded.

In modern times our understanding of tribes has changed. It can be a country or even a company where the workers devote their energy to ensuring the company makes as much money as possible.

That is how we get the mega food companies bragging in their annual reports of how many billion dollars they made in profits and how many millions of people they caused to have their legs chopped of from diabetes. (Spot the fake news?)

This may seem to have nothing to do with food and the modern health crisis but just wait - it's coming.

Lets talk about that two legged creature with the wonder guts.

Food for health

Episode 5 Mr Smart Guts and Kim's magic brick

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.

Other animals may be physically superior to us in many ways - stronger, faster or bigger teeth but they only survive in a limited region. We don't have too much of a problem with lions, giraffes or walruses wondering around causing traffic mayhem in my home town of Bundaberg.

Our gut brain is a key part of this incredible intelligent system and has kept humans healthy for many thousands of years.

But how does it work?

OK we have this incredible intelligent control system but we are still chopping legs of from diabetes every ten seconds or so around the world. We need a solution so what should we do?

I wish I could give you a nice simple science based answer - and I have tried to find that simple answer.

Google alerts are one of the significant modern innovations so I have set up alerts to catch anything that my give me the answer to this simple question - from diabetes, gut and soil biology, food and health etc and my first job in the morning is to read through all these alerts - and I have been doing this for years and it is totally depressing.

We are just inundated with magic solution, pills and potions which claim to 'cure' diabetes, make you thin and healthy, improve your sex life and make you young again and life wonderful. And some of these promotions are very clever advertising and social manipulation, very clever hype but what about the facts.

And the simple fact is that as yet we really have very little understanding of the mechanism - the logic - which makes this intelligent control system work. True we have a good understanding of bio-chemistry, gut biology is now receiving it due share of research and we can certainly associate certain types of gut bacteria with improved health and we can give them long Greek or Latin based names but we really don't know how they work.

Now we could just hang around - watching people having their legs chopped off - for a few more decades while science works out how our intelligent control system actually works but a leg every ten seconds for few decades is a lot of legs.

But there is a quicker - maybe less scientific - but certainly more practical way.

So what should we do?

- what better to explain this than make up a story featuring the master of modern media Kim Kidashian.

Kim to the rescue

Let's say you are just roaming around the internet and you see an advert that Kim Kidashian is offering a special for 60% off if you buy within the next 6 hours on her ceramic head bashing device (actually a brick) which is 98% effective.

You think that Kim has a very nice bum so she must be super intelligent - which is a novel interpretation of where human intelligence is stored.

Now the art of modern media is to say something that is true which will help your sales but leave out anything which may interfere with a sale. It is not lying - it is just not telling the whole truth.

Now it is absolutely true that this ceramic head bashing device is 98% effective - what the advert fails to say is that she uses it on her truculent husband who after a couple of hard bashes becomes significantly less truculent and 98% compliant. True!

So you buy one and start banging your head with it and low and behold you end up with a violent head ache.

You have never suffered from head aches before in your whole life but again there is no scientific proof that if you stopped banging your head with the brick that you head aches would stop.

Now my advice (which I would have to declare for legal reasons is general non medical advice so please consult you medical adviser) would be to stop banging you head with the brick.

Lets say (actually it is almost certain) that your head aches stops - can we use the same approach for reversing the health epidemic?

Epidemiological studies and statistics

The great problem with the way we try an interpret epidemics is that people are all different because we all adopted sex to increase variability so evolution would work (or because it was fun).

So I can't say as a fact that there was no diabetes fifty years ago but it was certainly less than 1% of the population.

Now the figure has risen to about 10% of the population is medically diagnosed as diabetic and it is estimated that some 50% of the population is pre or fully diabetic.

It may not be quite as simple as Kim's head banging brick but the question is the same - what is the difference

between fifty years ago and now that has caused the dramatic increase in people having their legs chopped off?

That's the big story so I can't give you a simple one liner - the answer will have to wait until the next episode when may be I can say - so they all lived happily ever after. The End

Food for health

Episode 6 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 stems 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 (t*hroughout 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 breath 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 out 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 may be 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.

Here is the first major change. Before modern agriculture our food was relatively **low** in these high energy foods like sugars and fats, modern food is almost **explosively high** in energy food.

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.

The key point is that our intelligent control system can sense when we are deficient in these replacement materials and send out messages for us to eat more.

Don't believe me that our intelligent control system can sense these deficiencies - have you ever wandered around the kitchen saying I want to eat something but I am not sure what?

Originally soil - based on volcanic rocks - were very high in these trace minerals and the soil biology made them available to the plants so there was an ample supply of minerals and phytonutrients - now by continuous farming the nutrient levels have dropped dramatically and even worse the soil biology has been decimated so even what minerals are there are no longer available to the plants.

This ratio of **energy** to **replacement** food has changed dramatically.

In the days when there was plenty of minerals in the soil and the biology to make it available there was simply no need for our intelligent control system to differentiate between energy and replacement fuel so it never evolved to tell us what was needed.

All we got was a warming light on the dash saying eat more so we ended up eating more energy food.

This is the first problem with modern food - but there is an even bigger problem.

Food for our intelligent control system

Going back to our steam engine analogy, say a modern power plant, and when we think about how it is controlled 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 - 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.

The modern diet is not only low in food to feed our gut biology but we have made sure we screw up our gut biology using toxic chemicals - which have a double wammy effect.

These chemicals may or may or may not cause harm to the human body - there is considerable debate about the cancer causing properties of these chemicals but what is beyond debate that they damage our gut biology - that's what they were developed to do.

But is is worse than that. At this moment we really do not understand how soil biology can effect out gut biology but if we learn from the Kim's brick it certainly seems to - just as effectively as being banged on the head with a brick causes head ache. We may not know form a scientific view point the mechanism but just because we haven't as yet defined the mechanism does not stop it happening.

We know that from looking at the gut biology of traditional tribes.

Back to the diet debate

What sort of food to eat has been the subject subject of often near violent debate between the low fat, low carb, vegan, vegetarian groups but perhaps we are missing the key point.

People from all over the world are eating an immense variety of food types and generally surviving quite successfully.

Perhaps the quality of the soil is far more important than the type of food we eat.

But lets have a look at some of these arguments.

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 that 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, we are slow, not all that strong, certainly at the back door when big teeth were being handed out, but we do one thing remarkably well, we walk and walk and keep on walking. We can out walk virtually any other creature - even a horse.

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 or nowadays to reduce the energy input - the overly simplistic eat less exercise more approach. We have become obsessed with energy foods.

There is more to diet than calories, given a chance our intelligent control system will automatically regulate how many calories we need to eat.

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 are 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).

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.

End of story? Not quite - and so they all lived happily ever after The End that is coming.

Food for health

Episode 7 regenerative farmers

We've reached the point where we see that to be healthy we need to eat healthy food, and healthy food comes from healthy plants, and healthy plants come from healthy soil.

We know that all sort of people are trying to sell us food, pills or potions that will make us healthy - we may not be sure whether they will actually make us healthy but we can be sure they will make their bank balances healthy.

But we do know that we have evolved over millions of years to eat food relatively low in energy, high in minerals and phytonutrients and full of fibre and biology which give us a healthy intelligent control system.

So may be we should just go back to our traditional food system yes or no?

Sadly the answer is no. We can't un-invent things and put them back to some mythical 'good old days'.

For a start there were not all that many of us in those mythical good old days and now we need to feed approaching ten billion people - that's a lot of McNuggets.

But it gets worse. Under the pretence of feeding the billions we have adopted chemical industrial agriculture in which the tribes making chemicals sell farmers chemicals which kill of the beneficial bacteria which make soil.

Climate change

The President of the Pitcairn Islands (population 50) assures us that climate change is all fake news - a conspiracy by the Chinese - or am I getting confused with another somewhat larger country?

But the fact is that if it is real then it won't be rising sea levels, a couple of degrees of warming, fires, floods or hurricanes which will be the big problem - it will be food to feed the global population.

Maybe the President of the Pitcairn Islands will reassure us that there is no problem because we can always make artificial food from coal - and maybe he is right.

But there are many farmers who don't believe him and think that they should be regenerating their soils as the only known way of feeding the world population.

There are many farmers who understand regenerative agriculture and technologies. I developed Gbiota beds specifically to grow crops in biologically active nutrient rich soils. Compost tea and minerals are flushed through the root zone.

This not only leads to a healthy nutrient rich biologically active soil but reuses food waste. The amount of food we waste, with all those nutrients, is simply unsustainable.

There main concern may be the sustainability of the food system as we are degrading our soils at an alarming rate and soils can also sequester large amount of atmospheric

carbon. There are a significant number of farmers who really understand the importance of regenerative agriculture.

We may be a smart creature but as a society we pay far more attention to what we need now rather than in twenty years time.

But it you are told you are going to have you leg chopped of from diabetes that registers in the must act now category.

We face a social problem rather that a technological problem.

The next evolutionary shift

We have evolved to be cooperative to our local tribe at the expense of other tribes. We see this everyday were political and business leaders of all shades are supporting their local tribe at the expense of humanity as a whole. We see this in the speeches and actions on the news every night.

But there is a change underway - it may be slow but it is happening, some countries like New Zealand and the Scandinavian countries and some companies clearly understand this shift.

But evolution is a slow business - often dependant on leaders dying and being replaced but more enlightened leaders. Change happens in a series of small but steady changes.

We are not going to change the world overnight - we have to put up with myopic leaders for while yet - but it is a step in the right direction.

Food for health

Episode 8 How people can access healthy food

What's all this people are agreeing with me

I am used to people disagreeing with me - but what's all this. Virtually everyone I speak to want's to eat healthy food, they seem to understand that to get healthy food it needs to be grown in healthy soil, They still like taking their pills even though I tell them it is far better to get their nutrients from their food and I have yet to find a person who thinks it is a good idea to be eating food contaminated by chemicals designed to kill insects or plants.

Given the choice, people seem to think it is not that great to have their legs chopped off and if that means eating healthy food then perhaps that is a better option.

But while they may agree with me - in principle - there is an awful lot of people who just keep on eating food low in nutrients and high in toxins. And when I ask them why I get answers like - it's cheap, I don't have time, the kids like it it's just too much trouble.

And they have a point and they every time they turn on the TV or go to the supermarket they are promotions for this or that energy food and there seems a whole bunch of people who actually want a bum like Kim Kardashian.

So - I ask myself what can I do stop people having their legs chopped off, dying young from heart attacks or not much

worse being decrepit in old age or the worst of all getting dementia?

And the answer is - by myself pretty well nothing. So I go back to my story about when the trees disappeared and we were being eaten by the lions. Is it good or bad to be eaten by a lion?

This was a decision on which the future of humanity rested and fortunately they took the decision that is was definitely in the not so good category.

And they found the solution was to all cooperate together and throw stones at the lions, and it worked and that is why I can write these stories.

But it left one indelible message for those early humans which over a couple of hundred thousands years has become embedded into our DNA, one person throwing stones - lion dinner - a bunch of people throwing stones - the lion nicks off.

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 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. Archaeologist 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 put the food security of the world and the health of the global population ahead of short term profits of large agro businesses.

Now I can't do this by myself, just as my great, great great uncle Fred couldn't stop being eaten by lions however hard he throw his stones. But my great, great, great grandfather

had a better idea - he said to his mates let's all throw stones at the lions and they may nick off. And he was right and after a long string of great, great, etc I was conceived while poor old uncle Fred became lion dinner and never had any kids.

So the message I have to tell my mates (that's you) is not about throwing stones at the lions but connecting with your grower - pretty simple and enough of my mates do it we will avoid having our legs chopped off and all the other baddies and may be healthy enough to play with our grand kids - which is quite fun until they want to play chasey and are just too fast.

Connect with your grower

For our guts to work we need to feed them the type of food they 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. Even better if hey are using Gbiota beds which are highly productive and automated.

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 the www.pickandeat.shop 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.

The alternative food system

We cant 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 we need to form groups to get healthy food

You can just email me (with your locality) and may be I can put you in contact with people near you. (colinaustin@bigpond.com)

I have a Facebook page called Biofoodies which you really should join.

But sometimes there is just a natural group. The most important people who should be eating healthy food is to be and new mums. And they are naturally in a group so all they have to do is tell their compliant other half to go out and search out local

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

Colin Austin You can contact me at colinaustin@bigpond.com

or join our Facebook group Biofoodie