Nutrition and the Voice

by Matthew Wallden CHEK IV, NLC III, MSc Ost Med, BSc (Hons) Ost Med, N.D.,D.O.
http://www.chekclinic.com/

Introduction

How on Earth can food affect the voice?

In honesty, it doesn't all that much. It will only make your throat swell and your nose run – if it's the *wrong* food. It will only make your blood sugar levels flux, so you can't concentrate, can't sustain a level mood – and may even feel depressed – if it's the *wrong* food. It will only make your stomach bloat and your pelvic floor weaken – if it's the *wrong* food. It will drive your nervous system into a fight-flight state resulting in increased breathing rate and decreased use of the diaphragm - if it's the *wrong* food. It will make you put on weight even despite your best efforts to cut calories - if it's the wrong food.

One man's food is another man's poison

Far from there being one perfect formula for everyone's dietary needs, the number of optimal diets is as varied as the number of people on the planet[1]. And what's more, the hypothetical optimal diet is just like your life, it ebbs, flows, changes direction and is not always quite what you expected[2].

The potential effects of food become more of a pressing concern if you are (or hope to become) an elite performer. Even more so, if you want to realize your potential in any pursuit. And even more so, if you care about your health and want to avoid debilitating bouts of pain or even life-threatening illness in the future.

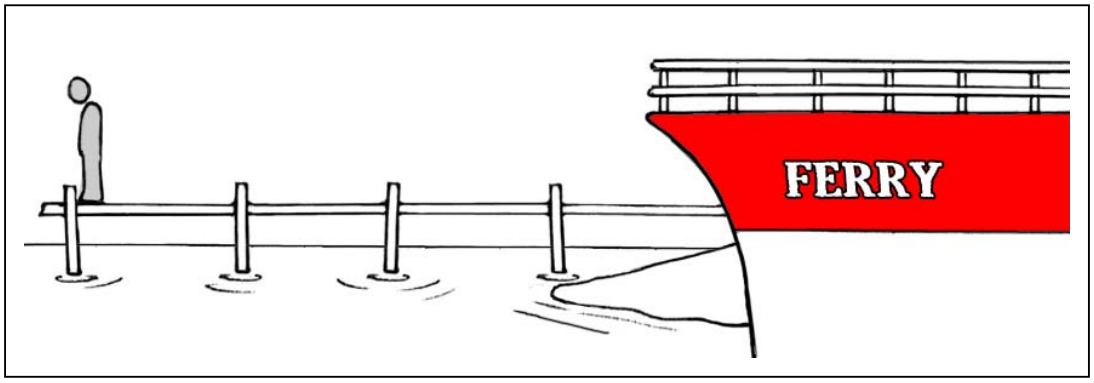
This chapter will explain some of the mechanisms by which nutrition can and will affect performance – depending on the choices you make, and how, with a little

Nutritionists and those with nutritional awareness:
Some of the concepts described in this chapter may seem, new, unusual, or even controversial. Being trained in traditional nutritional methodology, this was certainly my own experience when exposed to this material for the first time. However, I would urge such readers to follow up on the references & reading list provided at the end to allow them to make a more informed decision on the validity of the material – as well as using your common sense, rationality and gut feeling. Also, pay close attention to the discussion on "*cultural creatives*" below.

awareness, food can become your best friend in sustaining your energy levels and maximizing your performance.

Sometimes to move forwards, we have to look backwards…

Anyone who has a television, a radio, who reads a newspaper – or even who pays attention to the books on the best-seller stand at the shops, will have noted that hardly a day goes by without a new dietary "revelation".



Dietary fads have been around for many years and are certainly well documented from the mid-1800's onwards. Indeed, long before "Atkin's diet" there were those who touted a low carbohydrate diet, and long before the "Pritikin Diet" were those who preached a low fat diet.

For anyone trying to sift the good advice from the poor advice, this topic can prove a minefield; usually with the outcome that the confused reader reverts back to habits from their original (usually parental) training. As Jeffrey Bland points out, this may massively distort the apparent risk from diseases considered to be "genetic" or "familial"[11].

So how can a parent with little nutritional training make any sense of the barrage of conflicting information bombarding them on a daily basis? Well, you'll be glad to know, that when you analyse things like health and function to a deep, but balanced and encompassing level, what becomes apparent is that health and function are, in fact, very simple – it is disease and dysfunction that are complex. Consequently, disease may be best left to those with the mental capacities for such complexity. What we will focus on are the practically useful snippets of information that reveal the simplicity of health and function.

When we observe the evidence of how we got to this point in evolution, we can recognize that our ancestors were the survivors – the strong, the brave, the athletic, the quick-witted. Fortunately for us, we have inherited their genes. With a little contemplation then, we know that the biggest nutritional experiment ever conducted was the experiment of how we got here. Since so many other factors aside from nutrition affect our health and performance – such as sleep, mental state, respiratory rate, hydration levels, biomechanics, training background, inherent ability (the list goes on) – we know that most medical laboratory assessments are of very limited use. Looking at the world through the lens of a microscope makes for a very narrow view of things.

It is said that many a true word is spoken in jest, so let's just jest by quoting a well known saying in the field of reductionist medical enquiry:

More and more is known about less and less until, eventually,
everything will be known about nothing

Though the reductionist, body-as-machine, approach to medicine has its merits, it also has many flaws. This is why, for example, the United States – who have the most advanced medical research, rank number 1 in spending per person on healthcare, yet rank 24th in the world for longevity, according to the world health organization[19]. It may also be an explanation for why when doctors went on strike in Israel and in Canada, the death rate decreased to the extent that the undertakers were going out of business[20] – according to a report in the British Medical Journal in the year 2000. This is because we have a linear treatment approach – such as surgery or drugs trying to "heal" a non-linear system – the human body. We can expect, at best, mediocre results[15].

To understand more about what our ancestors ate, and how they got us to this juncture in evolution, we can study historical documents such as the one below in box 3 - but this only gives us a very limited view. We know that it takes around 100,000 years for the human genome (genetic sequence) to adapt by one tenth of a percent. This means that if we can get an idea for what our ancestors of 100,000 years ago, or more, ate, we can have a good idea of what physiologically we are designed to eat. This, then, falls into the realms of the nutritional anthropologist.

Flaws in reductionist research in nutrition:

For example, if we were to assess possibly one of the most famous nutrients – vitamin C - to see how it affected the common cold, we could give 100 people with colds a vitamin C tablet and 100 people with cold a placebo or "pretend" vitamin C tablet to take every day. Based on how the two groups respond, we might make a judgment on how effective vitamin C is at reducing the duration of a cold.

However, vitamin C is not found in nature on its own – it is always packaged up in fruits or vegetables with other micronutrients which are important for its absorption. If our experimental group have a low level of these nutrients in their diet in general, they will not be able to absorb and utilize vitamin C. If a certain number of the experimental group are stressed, then stress results in increased use of vitamin C and so will interfere with the experimental outcome[14]. If some of the group are dehydrated, this also drastically affects immune function and so may mean that the vitamin C has no apparent effect – but it is actually because they are dehydrated that their immune function remains impaired. If a certain percentage of the experimental group enjoy a high-sugar snack, such as a chocolate bar or a can of cola, this has been shown to inhibit immune function for between 4-8 hours after consumption. This means that just 3 of these snacks per day and that individual's immune system will be permanently impaired; again affecting the result of the study. If some of the group have what's known as intestinal permeability or "leaky gut" they will have impaired absorption of water-soluble vitamins – which includes vitamin C.

There are literally scores of other examples of how the experiment may be "confounded" or flawed by the way the person behaves in the rest of their life. So what will the research result actually tell us about vitamin C? Probably not very much. Instead, we need to look at the bigger picture to find a context to place "new information" within.

One of the leading nutritional anthropologists in the world is Professor Loren Cordain. In his book, "The Paleo Diet", Cordain describes how the agricultural revolution of 10,000 years ago, for all its benefits of efficiency, brought with it a trail of chronic and degenerative disease[22]. For example, grain consumption was probably the biggest change in human nutrition since beyond our last common ancestor. Prior to agricultural technology grains grew randomly in nature (you don't get a demarcated corn field growing in the African tundra, for example) and the ability to harvest them, mill them and cook them was not available[13]. Massive consumption of grains is blamed by many leading health care specialists as a large contributor to obesity and number of major modern day health complaints (see www.mercola.com). Today, more Americans are overweight than are not[22] - and being overweight is closely associated with diabetes, with heart disease, with

Box 3: Menu from 17th century England exemplifying the kinds of foods naturally available in England's indigenous environment before significant world trade and shipping had developed.

Pullets; Boiled capon; Shoulder of mutton; Veal roast; Boiled chickens; Rabbits roast; Shoulder of mutton roast; Chine of beef roast; Pasty of venison; Turkey roast; Pig roast; Venison roast; Ducks boiled; Pullet; Red deer pye cold; Four capons roast; Poults [young chickens] roast; Pheasant; Herons; Mutton boiled; Wild boar pye; Jiggits of mutton boiled; Jiggits of mutton burred [buttered]; Gammon of bacon; Chicken pye; Burred [buttered] capon; Dried hog's cheek; Umble pye; Tart; Made dish.

Thus read the menu for a Monday morning breakfast served in honor of King James I's visit to the northern English town of Preston in August of 1607[21]

stroke, with high blood pressure, with many cancers, and with degenerative joint disease – to name a few.

However, Cordain only touches on how different groups living and surviving in different habitats with different available foods would have adapted to their environment. This approach to looking at nutritional requirements based on the environment in which that individual (and their ancestral line) survived, was the work of Weston A. Price.

Price documented how indigenous groups untouched by white man's commerce and foods had excellent dentition and facial features. Price worked as a dentist and simply did not see this kind of consistency in his largely Caucasian client base. He documented what he saw through writing about it and taking photographs of examples of typical indigenous individuals. (These photographs can be seen in his book "Nutrition & Physical Degeneration" or online at www.price-pottenger.org)

Unfortunately when Price revisited these groups years later he noted that those who had since been exposed to white man's food – or what he termed the "four white devils" (see below) – had dramatically deteriorated in their dentition, and for the children, in their skeletal development. In particular, it was the mid-face (housing the nasal airway) that was compromised most by nutritional deficiency.

Price teamed up with a medical doctor called Pottenger who was particularly interested in how nutrition affected the fertility, behaviour, agility and boney development in cats. Pottenger had conducted experiments on 900 cats over 10 years documenting how cooked foods, such as pasteurized milk and cooked meat, affected the health of cats, versus cats fed on a diet of raw milk and raw meat. Shockingly, Pottenger had documented in the cats almost identical findings to Price's observations of human groups – the dentition and the development of the facial bones were particularly badly affected in those on an all-cooked diet. Pottenger's findings are reflected in human groups often reporting to nutrition & lifestyle coaches with digestive symptoms. Most frequently, digestive problems arise from 2 situations:

1) Eating in too stressed an environment / frame of mind
2) Eating foods that are devoid of enzymes

Keypoints:

Price and Pottenger found that diets based on cooked, processed foods resulted in detrimental changes to health and boney development within one generation. Pottenger found that, in cats, fertility dropped in each generation fed on cooked foods. By the 4th generation, these cats were infertile – unable to propagate.

Of particular impact in animal and human studies was the decrease in mid-face boney development. Since this is the very scaffolding through which the breathing apparatus operates and is clinically linked to breathing, eating and many other critical health functions, it can be implied, but not proven, that when the organism's health becomes so poor that it acts more as a drain on resources than a healthy vital propagation of the species, Mother Nature shuts down its capacity for health and life by first shutting down its airway and feeding portal.

This interpretation of the research may be seen as controversial, but is nevertheless congruent with what has been observed in both animal and human studies and is seen clinically by Voice, TMJ and Nutrition & Lifestyle specialists today.

While both circumstances are equally important to address, the first situation may be difficult to avoid, but the second is all about making decisions on a) how food is prepared and, b) what foods you choose to eat.

Almost any cooked food, unless it is a rare meat or an *al dente* vegetable will be devoid of enzymes since enzymes are destroyed by cooking at temperatures above 47.7°C (118°F)[3]. As we know by the fact that water's boiling point is 100° and the oven temperature is usually set to 180° or above, most enzymes (if there are any in the foods we choose to cook) will be destroyed. In which case, where do we get enzymes from? Mainly from the fruits and salads we eat… assuming we eat them.

Does this mean that we should all eat raw meats and vegetables?

No – far from it. It means that most people are unable to eat raw or rare meats because they do not have sufficient stomach acid nor the enzymes to break it down safely. Instead, digestive function must firstly be built up using plant-based raw foods and/or supplementation, before meat-based raw or rare foods can be safely eaten. *Homo sapiens*, it emerges, were ancestrally not so much the glorious hunters with spear in hand we have seen images of on television or in books, but were more commonly scavengers often feeding off the remains of big kills by cats and other large predators. Our digestive systems, therefore, are designed to be able to cope with high levels of bacteria, yeasts and even parasites – if they are functional. Of course, until such time, these microorganisms (and the risk of eating them) should be minimized by appropriate preparation.

This is why many enzyme-rich juices have become popular on multi-level marketing schemes just recently – as people really do feel dramatically better on them. Again, this is not because they have a tropical juice deficiency, but because they have a faulty diet or faulty means of cooking (usually adopted from parental training).

Far from being just a pretty idea and a nice story, the evolutionary approach to establishing nutritional requirements has been given physiological validity from those in the field of metabolic typing. Perhaps the front-runner in this field is William Wolcott – author of *The Metabolic Typing Diet*[12].

Keypoints:

Cook foods only as much as you need to based on:

- The functional capacity of you digestive system*
- Quality of food
- Preparation of food
- Taste

Ensure you have a good range of raw vegetables in your diet.

Chew your foods well to coat them in saliva and stimulate production of stomach acid.

Preparing your own food results in:

- better stimulus of digestive processes and
- better consciousness of how the food has been prepared

* to assess the functional capacity of your digestive system subjectively requires a specific clinical questioning procedure. To assess function of the digestive system more objectively require laboratory testing. Either should be completed by a health-care professional.

Are you what you eat?

We've all heard the saying "*you are what you eat*" – but is it actually true?

The hard fact of the matter is, if we were to look at your last meal, or snack, within the next 24 to 72 hours, that food is turning into a part of you. It may be a part of your heart, the lining of an artery, it may become a part of your eyeball, or it may become a part of your kidney.

Cultural creatives

In Barbara Marx Hubbard's book, *Conscious evolution*, she describes the term "cultural creative". A cultural creative is someone who is not so concerned with political or economic power, but rather with seeking to change our image of the world. This emerging social movement is not revolutionary, but evolutionary. Its aim is not to destroy, but to fulfil. There is much aggressive literature describing the very real conspiracies, cartels and interlocking business agreements that perpetuate the current climate of dis-ease and unrest in society[10].

Nevertheless, cultural creatives do not attack these groups or assert that "our way is better" – they are here to attract, not to attack. Because those wanting to make a positive change in their life will be drawn to such a concept, it means that success is all-but inevitable. Cultural creatives are infrequently heads of organizations, corporations, governments or traditional religions because their current role is to evolve and expand systems; not to maintain the current power structure as it is.

The psychologist, Abraham Maslow, could be considered a cultural creative. Maslow, whose famous *hierarchy of needs* states that for a human to be self-actualised (ie to realize their potential), they must be all that they can be, differed from other psychologists of his time, in that he had the genius to study function and health, rather than dysfunction and disease (Marx Hubbard 1998). In this way, Maslow was similar to others who have made a habit of studying human function – such as Weston A. Price, Francis Marian Pottenger and Paul Chek.

It is the study of dysfunction and disease upon which we have based our entire health care system. Instead of observing who "does health well" we have simply analysed those who "do health badly" and tried to find remedies – reactive medicine. It is the study of health – preventive medicine - that only a small pocket of people have dedicated themselves to.

What these people have been able to isolate is exactly what makes a healthy person – and it is health that they have attempted to build in their patients and in their students. As Edward DeBono has identified, the incredible realization that these great researchers have made is that health is all about *simplicity*. Health comes down to just a few very basic foundation principles that are all inter-dependent; one affecting the other either positively or negatively.

And this is a fundamental realization – far from food being viewed as *fuel* that just gives us energy to run our body, food is the very fabric from which our body is made. We would never use second rate materials for a building we wanted to live happily and safely in for the rest of our life, yet this is exactly the choice people make for their body through their dietary decisions.

The body is made of approximately 100 trillion cells – each constantly dividing and replacing themselves in the body's natural recycling process. As an example, the body produces around 2 million new red blood cells per second[3]. That's 120 million new red blood cells per minute, 7,200 million per minute, 172 800 million per day, or 63 trillion per year. These red blood cells that, incidentally, only account for

around 5 kilos of your bodyweight (about 7% of the total weight of an average adult male), are not being made from thin air. They – and all other cells in the human body, are being made from whatever new materials are being provided, through the diet.

So back to the question: *Are you what you eat?* Well, not entirely. A more accurate way to describe it may be "*you are what you don't excrete"*. If your digestion is good, you will digest and assimilate much more of the food and pass far less "waste". If the digestive system has lost its efficiency, for any number of reasons, it is unlikely that you will be absorbing every nutrient you consume. And, in addition, if you're eating a conventional modern diet the nutrient density of the foods you're eating will be far reduced compared to that of your grandparents or great grandparents

Perhaps this information is not so surprising to the informed reader – what is more surprising is that a government might take such an interest in nutrition, when there is far more money to be made in pharmaceuticals.

Perhaps an even greater shock is the fact that, firstly, this information is from US Senate Document 264, from the year 1936 – knowledge of which, subsequently, explains how and why there may have still been some governmental interest in nutrition at that time.

You may have seen trucks or packs of fertilizer with the letters "N.P.K." written on the outside. "N.P.K." stands for Nitrogen, Phosphorous and Potassium. These are the nutrients that need to be added to the soil to increase the size of the carrot, the ear of wheat, the tomato – whatever the produce is. The problem lies in the fact that the soil naturally contains 70 different minerals (and thousands of secondary nutrients – see below) many of which provide essential nutrition to the plant, and therefore to the animal or person eating that plant. If year on year, season by season the plants are using 70 minerals, and we are only replacing 3 minerals (nitrogen, phosphorous and potassium) the nutrient density of the soil will drop and,

Food as commodity:
Instead of viewing food as a commodity like car fuel where the cheaper it is, the better deal you've got, it is important to recognize that, perhaps more than in any other part of life, with food, you get what you pay for.

in turn, the nutrient density of the plant will drop. This process makes the produce less nutritious, less tasty, and more of a fluid-filled sack merely resembling the vegetables, fruits and crops our ancestors called "food"[4].

Organic closed cycle

Organic methods of farming ensure that the minerals and other organic compounds put back into the soil contain a full complement of those required to sustain a healthy, nutrient-dense food. Studies that have evaluated the nutritional value of commercially grown foods compared to organically grown foods have found that, on average, organic foods have a higher nutrient value. Though there is some contradictory evidence, those research studies that are well designed and of good quality found, almost invariably, that organic foods were significantly better[5].

Of these higher quality studies, the greatest differences were found in secondary nutrients rather than primary nutrients such as water, fats, proteins, carbohydrates, vitamins and minerals[5].

Excerpts from a United States Senate document

Do you know that most of us today are suffering from certain dangerous diet deficiencies which cannot be remedied until depleted soils from which our food comes are brought into proper mineral balance?

The alarming fact is that foods (fruits, vegetables and grains) now being raised on millions of acres of land that no longer contain enough of certain minerals are starving us - no matter how much of them we eat.

The truth is that our foods vary enormously in value, and some of them aren't worth eating as food.

You'd think, wouldn't you, that a carrot is a carrot - that one is about as good as another as far as nourishment is concerned? But it isn't; one carrot may look and taste like another and yet be lacking in the particular mineral element which our system requires and which carrots are supposed to contain.

Laboratory tests prove that the fruits, the vegetables, the grains, the eggs, and even the milk and the meats of today are not what they were a few generations ago

It is bad news to learn from our leading authorities that 99% of the American people are deficient in these minerals, and that a marked deficiency in any one of the more important minerals actually results in disease. Any upset of the balance, any considerable lack of one or another element, however microscopic the body requirement may be, and we sicken, suffer, shorten our lives.

We know that vitamins are complex chemical substances which are indispensable to nutrition, and that each of them is of importance for normal function of some special structure in the body. Disorder and disease result from any vitamin deficiency. It is not commonly realized, however, that vitamins control the body's appropriation of minerals, and in the absence of mineral's they have no function to perform. Lacking vitamins, the system can make some use of minerals, but lacking minerals, vitamins are useless.

This discovery is one of the latest and most important contributions of science to the problem of human health."

What is a secondary nutrient?

There are between 5,000 and 10,000 secondary nutrients or compounds in food [3,5,6]. Included within this secondary nutrient category include phenolic compounds, sulphur containing compounds, terpenes and alkaloids:

Secondary nutrient	**Benefit**
Phenolic compounds	mop up cancer-causing free radicals
Sulphur-containing compounds	aid detoxification of the body by supporting liver function
Terpenes	show biological and medicinal effects – in particular, anti-cancer properties by stabilizing mitotic division[24]. Also act as precursor to steroid hormones.
Alkaloids	antimalarial, nerve stimulation, other pharmaceutical uses[24]

Aside from nutrient density, other benefits of organic foods include minimizing chemical exposure, increases farming skill, increases farm employment, works in harmony with mother nature (as opposed to fighting her), more environmentally friendly – especially in the longer term as demand for local produce increases.

In the last 100 years, between 10,000-15,000 new chemicals have been introduced to the human food chain, from ground to stomach[6]. The average Westerner eats approximately their bodyweight in food additives per year. Now take a look in the mirror and imagine a big chemical "you" walking around - made purely out of food additives. This is a scary proposition. Those with a background in human biology may counter this point by stating that, firstly, the human body is excellent at detoxifying and processing such additives and, secondly, that all of these additives are rigorously tested for safety.

Both comments are true. However, we are talking about 10-15 *thousand* new chemical insults on the detoxification system in a body that is already exposed to many more air-borne pollutants from industry, transport, cigarette smoke, as well as medical drugs and social drugs, including alcohol, caffeine, tannins, alongside other stressors to the body such as electromagnetic stressors, light pollution, alarm clocks, processed foods, trans-fatty acids – ***all of which <u>we did not evolve with</u>***.

The fact that all of these additives are rigorously tested for safety is clearly a good thing. However, if you read the scientific papers, you will find that they are not

tested to see how these additives may interact with *each other*. An analogy would be someone firing a paint pellet at you from the other side of a tree. Well, so long as you don't stick your head round the corner, you are safe, the tree (akin to the body's liver) is effectively protecting you from the onslaught of paint pellets (toxins) being fired at your body. However, if you have 3 different enemy adversaries firing at you from slightly different angles, it is far more difficult for your body to remain protected hiding behind the tree. Now imagine what happens when you have 10,000 different adversaries firing paint pellets at you. Now the tree is an ineffective barrier, your body is going to take a beating – and those pellets sting!

This chemical beating is a reality in the modern world.

***Our attitude to food* - the major problem with organic farming**

Organic farming is more labour intensive – therefore requires a greater and more skilled work force. This means that organic food, by default, must cost more than food raised synthetically. The average consumer regards food as fuel to get them by, rather than as an investment in their body, as we discussed above. If this attitude to food is combined with a busy lifestyle, the result is that food is almost an inconvenience – something that needs to be "fitted in" to a busy schedule. Busy schedules and digestion do not mix. Not only does eating on the run result in inefficiency in the digestive process (see below), it also dampens our awareness of what the food actually tastes like. This means that we have firstly, not anticipated that the food will taste any different (non-organic foods generally look similar to, if not better than, organic foods) and, secondly, have not noticed that the food will taste any different as our minds are on the next errand or deadline.

The outcome is, we notice no real difference between the two foods, which is very interesting, when one considers that cows placed in a field of organically sewn grass

Figures reported by the British Soil Association (see: http://www.soilassociation.org/) in the "Organic farming, food quality and human health" report (p. 48 under "Semen quality") showed that while the average man had a sperm count of 113 million/ml 50 years ago, by 1990, it had fallen to a dismal 66 million/ml. It would seem human fertility is mirroring the effects of poor diet observed by Pottenger in his cats. Research presented in this report showed that men eating a diet of at least 25% organic food had a sperm count of 99 million/ml, while those eating >50% organic food jumped up to 127 million (about what the average male produced in 1938). This demonstrates both the detriment of a non-organic diet and the hope that even small changes for the better in diet can have a significant impact on overall health.

with a strip of fertilized grass will avoid that fertilized grass at all costs – even straining over the fence to eat food in the next unfertilized field[5,7]. This means that when it comes to food choices, the average human is less conscious, or aware, than the average cow!

Food Choices and our Voices

When you train the voice using *Voice Gym* exactly what you are training is, firstly, the nervous system and, subsequently, the muscles. This is exactly what happens when we train in any sporting or athletic environment. As a result the body adapts to fire the nerves more efficiently and to make the muscles stronger or more durable… but how does it do this? It does this by producing more neurotransmitters for nerve messages, by logging movement patterns in the brain, and by rebuilding the muscles to make them better at what they're being asked to do.

Food consciousness: Most of us have had the experience of buying a cheap chicken sandwich from a service station whose best before date is still a month away, sinking our teeth into the sandwich with great anticipation, only to find that the chicken doesn't really taste of meat – in fact, it tastes more like water. It is only when something tastes this bad that the average person might notice it. Enhance your awareness of foods and truly savour the flavour. This will help you to relax and to digest the food as well as to appreciate why you paid those prices and, importantly, that you got what you paid for!

So where do neurotransmitters come from? How does the brain get energy to store information in its memory banks? How do muscles grow stronger and more effective at what they do?

The answer is simple: it all comes from the diet. Neurotransmitters are made by foods – particularly those containing purines and good fats. Energy for the brain to function optimally comes from eating the right balance of nutrients to ensure that the levels of sugar in the blood are not too high or too low. Nutrients for the muscles to adapt to the new demands being placed on them generally come from the proteins and fats in the diet.

Key Point: Without an optimal balance of nutrients in the diet, the nerves cannot operate optimally and the muscles cannot build optimally. This affects the ability of the body to adapt and therefore affects performance – whether it be singing, playing an instrument, concentrating at school, or competing in a sport.

The macronutrients: *building your boat so it won't sink*

Paul Chek, an internationally renowned holistic health expert, gives the analogy that building your diet into something that will support your function and your health is just like building a boat that is durable and won't sink as soon as you hit a bit of rough water. He suggests that the macronutrients: proteins, fats and carbohydrates can be compared to the wood of the boat [6,7]. If you eat good quality macronutrients, you will be building your boat with good quality wood. It doesn't matter how good the nails (read "micronutrients" [vitamins, minerals etc]) holding that wood together are if the wood is of rickety poor quality. That boat will still sink. Therefore, no matter what ratios of the macronutrients you require for optimal health, the important thing to recognize is that those macronutrients – carbohydrates, proteins, fats – should be from a wholesome, organic source and therefore as close to their natural state as possible (see below).

Without the right balance of macronutrients, the body will have to put more effort into blood sugar regulation and a number of bodily processes, such as acid-base balance, cellular oxidation rate and the balance between your fight-flight and your rest-digest nervous system. These processes have a significant impact on performance and health.

Natural state food

Let's consider an apple from the grocer's. This apple is only 1 step removed from its natural state hanging on the tree. The apple's nutrient density is therefore high – especially if it's organic. A raw steak, is 1 step away from its natural state. If it's cooked *rare*, it is 2 steps away, cooked *medium* it is 3 steps away and cooked *well-done* it is 4 steps away. The more it is cooked the more the enzymes found in the meat are denatured and meat becomes tougher to digest (see *How can the digestive system lose its efficiency?* below).

Displacement foods

The concept of displacement foods was first put forward by Price more than 70 years ago. A displacement food is one which is eaten to the neglect of other more nutrient dense options. Foods that serve no nutritional value (such as our tomato described above) tax the body to attain it, prepare it, chew it, swallow it, break it down, absorb it, transport it, detoxify it, deliver it to the working cell, and then

remove the waste biproducts, than they actually provide for the body. The most common foods described as displacement foods are what Chek[3,6,7] has termed the *four white devils*:

- Refined Flour
- Pasteurised milk
- Sugar
- Refined salt

The *four white devils* label is particularly appropriate as, not only are these foods all white in appearance, but they have all been popularised and introduced to previously healthy, indigenous populations by white man.

From vine to mouth…

Now let's consider the hypothetical journey of a conventionally farmed tomato and count the steps away from its natural food state to get a feel for its nutrient density. The tomato is grown in South America, using synthetic fertilizers (1 step away). It is regularly sprayed with chemical pesticides during its growth (2 steps away). It is picked early – before it is ripe so that it can be transported to Europe without going off – resulting in decreased vitamin production in the fruit and lower nutrient density (3 steps away). It is sprayed with a preservative (4 steps) and transported in refrigerated truck (5 steps) to the airport and then in a refrigerated hold of a plane to transport it to Europe (6 steps). From the airport it is transported in a refrigerated truck to the wholesalers (7 steps). At the wholesalers it is bought by a company who tins tomatoes. They transport it to their factory in a refrigerated truck (8 steps away from nature). At their facility they chop it into a pulp (9 steps) then put it into a tin and seal it. The chopping creates a level of oxidation of the tomato meaning that some of the nutrients (mainly enzymes and vitamins) are lost. Alongside the clock ticking, this means that the, already compromised, nutrient density is depleted further. The tin is heated to high temperatures to kill any bacteria – thereby denaturing (rendering inactive) any of the surviving vitamins and enzymes (10 steps away from nature). The tin is then transported to the wholesalers and may be distributed to supermarkets or to other processing plants – where it may sit on the shelves or in storage for up to 4 years (11 steps away). This particular tin is bought up by a big food manufacturer to help them make a ready-made meal of spaghetti Bolognese. They mix the tomatoes in with the meat, onions, garlic and other Bolognese ingredients and cook it (12 steps away). Since microwave meals need a long shelf-life, new preservatives are added (13 steps away). The meal is then vacuum packed and transported off to the supermarket (by now nutritionally devoid) and sits in their refrigerators until a willing, unsuspecting customer buys it "for convenience". Since it is a microwave meal, we know it is going to be heated one more time, by a technology that has many well-documented health detriments [3,6]. This creates a conservative list of the tomato now being 14 steps away from its natural food state. Such removal from nature, brings with it removal of nutritional value and increases the load these kinds of food actually create on the digestive system. To try to extract something of use from this 14-times-removed tomato, is far more work, with far less success, than eating a wholesome organic tomato fresh in a salad for example. The detrimental additives in the tomato might normally have been counteracted by some of the beneficial nutrients in the tomato, but since these are now all-but removed, there is no nutritional benefit from consumption – only work for the body. The tomato has, in this case, become what is known as a non-food, an anti-nutrient[8] or a displacement food[3,9].

A tragic example of how the *four white devils* have impacted on the lives of an indigenous population is the story of the Native North American Indians. This indigenous group have only been exposed to white man's food for between 5-7 generations – a blink of an eye in evolutionary terms – so are particularly susceptible to diseases of Western civilization. Bland reports that type 2 diabetes is practically unheard of in indigenous groups (between 1908-1937 there was only one recorded case, in the Pima Indians of Arizona). However, 70 years on, the condition is nearly epidemic[18].

Pima Indian reservation, Arizona
Cases of type II diabetes:
1908 = 1 case
1937 = 21 cases
1954 = 283 cases
1965 = 500 cases

Diabetes is now the major chronic disease problem in Native American cultures. The problem? These people are eating foods that are, firstly, not what their ancestors evolved with and, secondly, have had no time to adapt to. European settlers have had slightly longer to adapt to a high grain diet, but still not long enough that this can be considered "healthy" – contrary to what most grain-based manufacturers would have you believe. For more information see www.beyondveg.com.

How do we know what our ancestors ate?

In most cases, we do not know what our ancestors ate because most of us do not know who our ancestors were. As a loose rule, the further your ancestors lived away from the equator, the more meats you need in your diet and the less sugars (only vegetables and low sugar fruits). If your ancestors were from equatorial regions you may do better on a lower meat diet, with more vegetables and fruits. This is simply deduced as these are the foods that are available in our native environments.

To get a better idea of your own nutritional requirements see Appendix A.

The native environment of the UK, for example, allows for growth of low glycaemic (low sugar) fruits – such as apples, pears and berries. Low glycaemic vegetables also grow here naturally and of course there is abundant animal life providing meats and animal proteins. Beyond 300 years ago there were no potatoes, and beyond 3,000 years ago (in Europe, at least) there were no grains[13].

Because it takes 100,000 years for our genes to adapt even by 0.1%, we can pretty much guarantee that, genetically, we're not adapted to eat grains (which for the most part are very high glycaemic), nor to eat high glycaemic fruits, nor to eat potato, nor to drink alcohol, nor soda pops, nor chocolate bars or sweets. Additionally, the limited sugar-based diet would be further confined to the summer months when fruits are naturally available, and the blood sugar regulatory mechanisms of the body would be relatively unchallenged during the winter months. What a difference to the exposures of today.

Proteins are something of a controversial topic – too broad to discuss here. However, in summary, proteins really need to be attained from a natural animal source to get the correct proportions of fats and efficient absorption of proteins. While proteins are available in non-animal sources, they are typically at a very low level (usually less than 15% in nuts and beans, for example) and, in addition, the proteins are bound up in fiber, or *phytates*, meaning they are difficult to absorb and much harder work for your digestive system. Many of the studies suggesting that animal meats are detrimental in some way to human health are heavily flawed, funded by vested interests, or based on large groups of people eating conventionally farmed meats.

> While talking in thousands of years seems like a very long time, as Cordain points out, if you were to take a stack of computer paper (the kind in which each page is connected to one another) and count out 212 eleven-inch (28-cm) pages. Then unravel the stack of paper and lay it out end to end--it will form a continuous 194-foot (59-meter) strip. Now, let's assume that 1 inch (2.54 cm) equals 1,000 years in our 194-foot strip of computer paper; thus, the first part of the first page represents the emergence of our genus 2.33 MYA and the last part of the last page represents the present day. Now, take a slow walk down all 194 feet of the computer paper, and carefully look at each of the individual eleven-inch sections. When you get to the very last eleven-inch section (the 212th section), this represents approximately the beginning of agriculture in the Mideast 10,000 years ago; therefore, during the preceding 211 sheets humanity's foods were derived from wild plants and animals. This little experiment will allow you to fully grasp how recent in the human evolutionary experience cereal grains have been introduced (as well as dairy products, salt, and refined sugar).[13]

For more discussion on this topic, for vegetarians, or those with concerns for animal welfare, please feel free to go to www.chekclinic.com/articles to see further discussion, references, and tips that may help you to adapt your diet in a way that's acceptable to you.

Keypoints: Avoid displacement foods – which includes all grains, all refined sugars, all refined salt and pasteurised milk products. The common response to this is the concern that this may somehow leave the diet deficient. This is not true – there is no other animal that drinks milk after weaning, and there is only one other primate that eats grains (but for less than 2% of its diet)[13].

How can the digestive system lose its efficiency?

The process of digestion includes many different events, from the anticipation of food and the associated production of saliva, stomach acid and digestive enzymes, to the extraction of fluids and minerals from the faecal matter in your colon. If any of these processes is interfered with, your ability to digest what you're putting in your mouth may be compromised. The most common reasons for having suboptimal digestion are as follows:

- Eating on the run
- Eating with your mind on other things (work, television)
- Ineffective / too little chewing (foods should be chewed to a liquid pulp ideally).
- History of eating mainly cooked and/or processed foods
- Little raw or rare food consumption
- Indigestion tablets
- Drinking too much (of any fluid) with a meal

This behaviour most commonly will result in any of the following symptoms: indigestion; reflux; heart burn; upper abdominal bloating; irritable bowel syndrome; constipation; lower abdominal bloating.

Food intolerances and dysbiosis

We have discussed the fact that, given all the currently available evidence, we are not adapted to eating grains. This poses a great difficulty for many people who

For the average person a "normal" day would be to have a wheat based cereal for breakfast and/or toast. As a morning snack they would probably eat a biscuit or two, or perhaps a cake or a bun (all wheat-based). For lunch, sandwiches tend to be the staple, though some may have a pasta salad. For dinner, a pie with vegetables, perhaps a pasta dish, or maybe a pizza is commonplace. Even if they didn't eat something that overtly was made from wheat, the likelihood is that they would have a sauce thickened with wheat flour, or chicken nuggets, chicken Kiev's (both bread-crumbed), sausages or burgers (which contain wheat), or perhaps even they may have planned a wheat-free roast dinner, then ruin it all by putting a standard wheat-based gravy on it. They may even plan everything perfectly and then having been so good reward them selves with a chocolate treat… well just watch out! You'll be surprised to know that even some common chocolate goodies contain wheat. So given grain's allergenic nature, is it any surprise that so many people have an immune response to them.

recognize that they have a grain intolerance – the usual comment being "But grains are in practically everything I eat, how can I possibly avoid them?"

What these people fail to recognize is that they have highlighted exactly why they are intolerant to grains – because they have so many of them in their diet!

Few people would go so far as to consider that foods are *non-self* – in other words they are perceived as foreign invaders by your immune system – just like a virus or bacterium. This means that the more of any given food you eat, the more effective your immune system becomes at recognizing it and reacting it – just as it does to an infection. This is the beginnings of a food intolerance. This process is reflected in the fact that in the West the most prevalent food intolerances are to wheat, then to dairy, whereas in the East they are to rice and soya[23].

Hayfever (and other signs of immune sensitization) is not an anti-histamine deficiency, but a clear indication that you are exposing your immune system to something it is reacting to.

How do I avoid over exposure to any one food?

In nature, of course, foods would have been limited to us based on where our nomadic wanderings had taken us. We would have eaten whatever plant and animal life we stumbled across on our travels. Additionally, the seasonal cycles meant that certain foods were only available at certain times of year – for example, fruits (and therefore sugars) were only available for a small part of the warmer months in temperate zones.

In modern times, almost all varieties of foods are available to us all year round, so most people just pick their favourite few foods and stick to them all year round! Indeed, research suggests that most people only eat a range of 10 different foods for most of their adult life[15].

A sensible and simple way to avoid becoming sensitized to foods is to "rotate" them on a 4-day cycle. This simply means that if you eat chicken on Monday, you should avoid it again until Friday. If you eat beef on Tuesday, you should avoid it until Saturday. Eating this way allows for greater variety and stimulation of the palate than eating the same thing every day. There are more detailed ways to rotate foods based on their genetic categorization (see *How to Eat, Move and Be Healthy* by Paul Chek for more detail), but as a loose rule the 4 day rotation works for most people.

If, on a day when you're eating pork, you feel tired, bloated or devoid of energy, and this pattern repeats itself on your "pork day" then you know that you don't do so well on pork. Try excluding it for 3 months and then reintroducing it. Just because you react to something now, doesn't mean you will always react to it. If you do still feel bad on pork at the 3 month mark, you may want to see a clinical

Keypoints: Food intolerances are the norm in modern culture. Dr Bill Timmins, owner of Biohealth Diagnostic laboratory suggests that up to 65% of Caucasians have a sensitivity to wheat. A food intolerance is a sign that the immune system is sensitized. If the body perceives it is under attack it will increase production of mucous, of ear wax, it will make the eyes run (and/or crust up), it will swell the lymphoid tissue in the nose and throat (eg tonsils, adenoids, nasal membranes), it will make the tummy bloat and, across time, will clinically fatigue the body.
The result: decreased width of airway, inability to breathe efficiently (nose breathing will be especially compromised), increased stress levels, decreased ability to repair tissues, increased likelihood of hayfever and other sensitivities. All of these will impact on the voice, on the ability to perform any demanding activity and anything requiring concentration. (This is why food intolerances are closely associated with attention deficit problems.) A snotty, mouth-breathing, bloated performer also has an impact on aesthetics and attractiveness in audition!

nutritionist or nutrition & lifestyle coach (NLC)* who can help you further to identify the cause of your intolerance.

(*see www.chekinstitute.com "find a practitioner" to locate an NLC who can help you, or go to www.healthexcel.com to find a metabolic typing nutritionist who can help)

Recognize that the more you eat a food, the more likely you are to have an intolerance to it and the last thing you want is an intolerance to something you like – so rotate it to avoid this happening!

The Good News

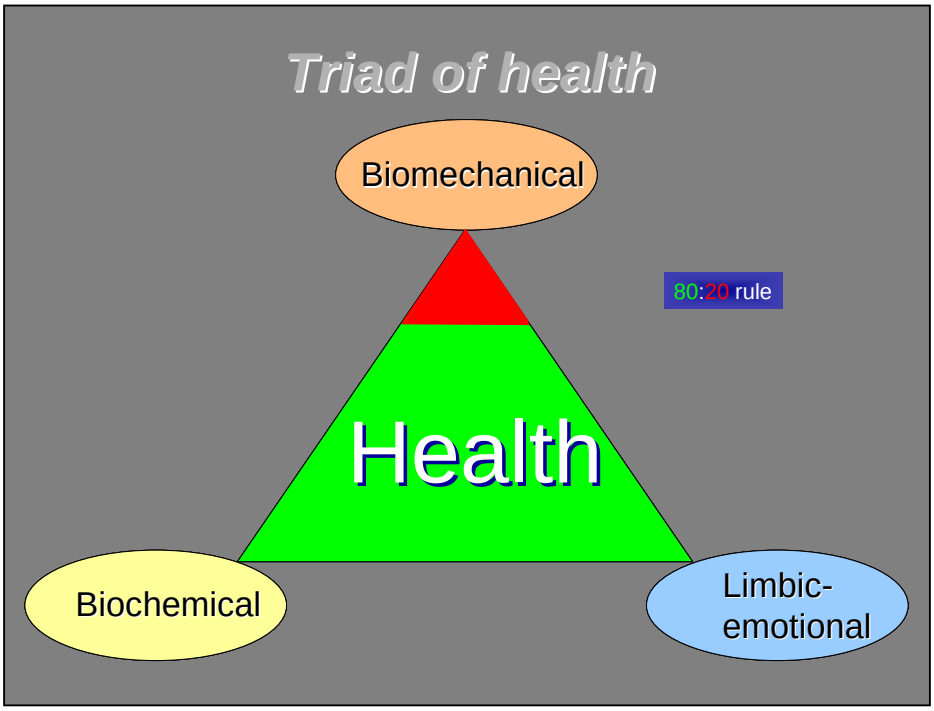
There are variety of factors that make a story newsworthy – but one rule is that people are more interested in bad news than they are in good news. Well, up until now, this whole chapter may have seemed like bad news for you. It is certainly distressing to be told that many of the things you enjoy eating or drinking may be doing you harm. However, the good news is that you are now armed with information that can help you to feel better, and to live more healthily.

The choice now is yours – do you want to live stronger longer, or get sicker quicker?[15]

There are however a couple of extra bits of good news. Just as it was emphasised earlier in the chapter that the body is not a linear system and that a "this remedy for that ailment" approach is therefore limited in its effectiveness, it is true that if we just focus on nutrition we are also being guilty of a narrow approach.

The holistic view of the body is to look at it as a biochemical, biomechanical and emotional entity[16,17]. When these three entities are balanced, the result is health. Nutrition fits primarily under the biochemical banner. However, let's just take a look at what happens if, for example, you know wine's not so great for you, yet you love a glass of wine with your meal or on a social occasion. If you were told that you could no longer have the wine as, from a biochemical point of view it is doing you no good, how will that impact you emotionally?

Avoiding the wine may be more detrimental to your overall health than drinking it!



The triad of health: The triad of health dictates that each of the 3 components must be in balance in order to achieve sound health. The 80(green):20(red) rule represents the ratio that is required for an already-healthy person to maintain good health and allows for treats and occasional rule breaking!

The 80:20 rule

The 80:20 rule is a useful guideline to help you achieve balance in your nutritional-emotional-biomechanical triad of health. It's a simple rule that effectively applies to those who have no health problems as a code for living a healthful life.

If you know that sitting in front of the TV all night does nothing positive for your biomechanics, it doesn't mean you can no longer watch TV (which psychologically would torment many people in modern society!) Instead, if one or two nights are spent "veg'ing" in front of the TV, on the other nights you could spend time playing a sport, exercising at the gym, playing an instrument, taking a leisurely walk, gardening, or doing DIY.

Similarly, if you love a glass of wine with your meal, drinking it every night, means it is just a matter of time before your digestive system will become "leaky" as, just like aspirin, alcohol is absorbed into the blood stream by burning a hole through the

Exceptions to the 80:20 rule

If someone already has a health problem, such as, diabetes or asthma, they may need to follow more of a 90:10 rule, whereas if someone has a significant health problem such as cancer or heart disease a 99:1 rule is more appropriate. Other instances where the 80:20 rule really cannot apply is if you have a food intolerance, or other medical conditions creating inflammation in the digestive system. As we've discussed, if you're intolerant to grains – as many are – avoiding grains only 80% of the time will do little to help reduce your level of immune sensitization from the grain consumption. Any food intolerance really means a full, or close-to full avoidance of the food allergen at all times.

digestive wall. Such irritation to the digestive system results in bloating after meals or after drinking. Bloating means that your abdominal muscles are not activated and you cannot perform sports, sing, or do anything that's mechanical all that comfortably (see www.chekclinic.com/articles/ for more detail). Alcohol also dehydrates the body (it is a potent diuretic) and therefore, for the average Westerner – who is chronically dehydrated – this compounds a major factor compromising health and performance. It also adds to the toxic load on the body (the bodyweight of food additives most of us eat each year) – stressing the liver further…

However, if you are well-hydrated before you start drinking wine – and continue to hydrate during and after drinking wine, its detrimental effects are reduced. Since the best solution to pollution is dilution, the water will also help you to detoxify some of the toxins in the alcohol. If you're eating a diet that's primarily organic, firstly your liver will have a huge amount less food additives to process, and the high density of secondary nutrients in the organic food will support the liver in its function of detoxification. And finally, if emotionally you enjoy the wine and enjoy the company you get when drinking wine and are able to relax better with a glass of wine… then there's no reason why you shouldn't have a glass a couple of nights per week.

Cheers!

Putting it all together

How do you put all this information together into something you can apply immediately in your life?

1) Evaluate: Do you want to improve the way you and your family feel? Do you want to raise performance levels and reduce the likelihood of illness or injury?* If yes, go to 2)
2) Are you willing to make the changes required to do this?** If yes, go to 3)
3) Are you able to make the changes required to do this?*** If yes, go to 4)
4) Are your family members supportive? (this is critical to the success of the program)**** If yes, go to 5)
5) The first thing to do is to write a plan.
    a. The plan starts with writing meal plans for 1 week (see appendix B).
    b. Remember to rotate the foods you plan.
    c. Having written the meal plan, write a shopping list alongside the plan.
    d. Shop!
6) Now you're stocked up on the foods you need, follow your meal plan for the week. Remember, while you may feel a positive benefit immediately, for some people it may take a few weeks to feel the benefits.
7) Be persistent. Most people feel so great when they get the right foods in the right proportions rotated appropriately that they feel as if a cloud has lifted from them. If you deviate from the plan – especially after you've been on it for a few weeks - it is likely you will notice a big difference in energy levels and general sense of well-being. Most commonly this is all the motivation that's needed to persist with it and make it a true lifestyle change. If you don't notice a big difference, it probably means that you need fine-tuning from a metabolic typing nutritionist and/or nutrition & lifestyle coach. (See www.chekinstitute.com find a practitioner or www.healthexcel.com)

* If not, this is fine – you may be eating perfectly already. If in the future you feel the desire or are inquisitive to see if you can feel even better than you currently, just hold onto this book and return to it when you feel ready.

** If not, you need to consider what is of greater importance to you, to feel the best you can do through eating the right kind of proportions, or to perhaps never quite realise that potential, but to avoid the stress of an unchanged diet plan

*** Sometimes, there are limiting factors on how realistic it is for you to make the ideal lifestyle changes. The usual two limitations are time and money. With regards to money, just know that the more healthily you eat, the happier you will feel, the more productive you will be and the more you can achieve. This commonly results, in the long term, in earning more money. This aside, frequently it is a matter of priorities – most people think nothing of spending £15 per round at the pub to dehydrate and toxify their body with beer, but would scoff at spending £15 per week on mineral water to detoxify and hydrate their body! There are many other examples where significant money is spent on things that either do not serve

a positive health purpose or are material in nature – new cars are classic examples of this, with people taking huge loans to get a flash car, yet buying economy, processed foods. If we leave the philosophy aside for a moment, it is far more important that you eat for your metabolic type than for you to eat organic. Eating for your metabolic type usually will have very little effect on your weekly shopping bill – it's just a matter re-proportioning your meals and snack appropriately.

**** Without support from family members, this process can be extremely challenging. If you like a challenge – great! If you prefer to have one or two allies, take time to explain how these modifications can help everyone to perform better and feel better. Ask them to embark on an experiment with you. Tell them it's important to you. Educate them. If at the end of this you are still fighting the corner on your own, you can go ahead and try it for yourself and be a living example of how just simple changes to your diet can make a big difference to you health. This will entice other family members to follow your example – you will be their role model.

References and further information:

1) Williams R, (1956) *Biochemical individuality*. Publisher: Keats
2) Wolcott W, Fahey T, (1998) *Metabolic typing*. Publisher: Doubleday
3) Chek P, (2002) *You are what you eat* Audio Series: Produced: CHEK Institute, San Diego
4) Wallach J, (1995) *Dead doctors don't lie* Audio Cassette
5) Chek P, (2001) *Lifting the veil of deception*. Publisher: CHEK Institute, San Diego
6) Chek P, (2003) *How to eat, move and be healthy*. Publisher: CHEK Institute, San Diego
7) Chek P, (2001) *Flatten your abs forever* Video. Producer: CHEK Institute, San Diego
8) Holford P (1997) *Optimum Nutrition Bible*. PUblisher
9) Price WA, (1939) *Nutrition & Physical degeneration*. Publisher
10) Griffin E, (1996) *The Politics of Cancer*, Audio Cassette. Spoken Word Library
11) Bland J, (1998) *Genetic Nutritioneering.* Publisher: Keats
12) Wharton C, (2001) *Metabolic man – ten thousand miles from Eden.* Publishers: WinMark Publishing
13) Cordain L, (1999) *The Late Role of Grains and Legumes in the Human Diet, and Biochemical Evidence of their Evolutionary Discordance*. www.beyondveg_files\grains-legumes-1a.htm
14) Wilson J, (2004) *Adrenal fatigue in the 21st Century*. www.smartpublications.com
15) Chek P (2001) *Nutrition & Lifestyle Coaching Course* (Level I)
16) Newman-Taylor *Naturopathic Medicine*
17) Wallden M, (2007) *Rehabilitation and Movement Re-education* in Naturopathic Physical Medicine
18) Bland J (2000) *Nutritional Management of the Underlying Causes of Chronic Disease.* Seminar Notes.
19) Page (2003) *Your Jaws Your Life.* Publisher: SmilePage Publishing
20) Siegel-Itzkovich (2000) *Doctors strike in Israel may be good for health* BMJ 2000;320:1561 (10 June)
21) http://www.price-pottenger.org/Articles/Merrie_England.htm (accessed August 2006). Fallon S, Enig M, (1999) *Merrie Olde England*.
22) Cordain (2002) *The Paleo Diet*. Publisher: Wiley
23) Shils & Olson (1993) *Modern Nutrition in Health and Disease* (8th Edition). Publisher: Lea & Febiger
24) Terpenes: http://www.people.vcu.edu/~asneden/terpenes.htm (accessed August 2006)
25) Alkaloids: http://www.people.vcu.edu/~asneden/alkaloids.htm (accessed August 2006)

Appendix A

Benchmarking your nutritional requirements

Find out what kind of food balance you should start with as a benchmark. When you know where to start, plan your meals and shopping list accordingly. Any lifestyle change is a stress on the person making the change, so be ready to find it stressful. Just know that this is a positive stress moving you toward health, rather than away from it.

NOTE: The following questionnaire has been borrowed, with kind permission, from Paul Chek's "*How to Eat, Move and Be Healthy*" book – an excellent resource for more in depth information surrounding the information in this chapter.

1. I sleep best
    a. When I eat a snack high in protein and fat 1-2 hours before going to sleep
    b. When I eat a snack higher in carbohydrates 3-4 hours before going to sleep.

2. I sleep best if:
    a. My dinner is composed of mainly meat with some vegetables or other carbohydrates.
    b. My dinner is composed mainly of vegetables or other carbohydrates and a comparatively small serving of meat.

3. I sleep best and wake up feeling rested:
    a. If I don't eat sweet deserts like cakes, candy or cookies. If I eat rich desert that is not overly sweet, such as high quality full-fat ice cream I tend to sleep okay.
    b. If I occasionally eat a sweet desert before I go to bed.

4. After vigorous exercise, I feel best when I consume:
    a. Foods or drinks with higher protein and/or fat content, such as a high protein shake.
    b. Foods or drinks higher in carbohydrates (sweeter), such as Lucozade.

5. I do best-maintain mental clarity and a sense of well being for up to 4 hours after meals when I eat:
   a. a meat-based meal containing heavier meats such as chicken legs, roast beef and salmon, with a smaller portion of carbohydrate.
   b. a carbohydrate-based meal containing vegetables, bread or rice and a small portion of a lighter meat such as chicken breast or white fish.

6. If I am tired and consume sugar or sweet food such as donuts, chocolate or sweetened drinks without significant amounts of fat or protein:
   a. I get a rush of energy, but then I am likely to crash and feel sluggish
   b. I feel better and my energy levels are restored until my next meal.

7. Which statement best describes your disposition towards food in general:
   a. I love food and live to eat!
   b. I am not fussed over food and I eat to live

8. I often:
   a. Add salt to my foods.
   b. Find that foods are too salty for my liking

9. Instinctively, I prefer to eat:
   a. Dark meat such as the chicken or turkey legs and thighs over the white breast meat.
   b. Light meat such as the chicken or turkey breast over the dark leg and thigh meat.

10. Which list of fish most appeals to you?
   a. Anchovy, caviar, herring, mussels, sardines, abalone, clams, crab, crayfish, lobster, mackerel, octopus, oyster, salmon, scallops, shrimp, snail, squid, tuna (dark meat).
   b. White fish, catfish, cod, flounder, haddock, perch, scrod, sole, trout, tuna, turbot.

11. When eating dairy products, I feel best after eating
   a. Rich, fuller fat yoghurts and cheese or desserts.
   b. Lighter, low fat yoghurts and cheeses or desserts.

12. With regard to snacking:
    a. I tend to do better when I snack between meals or eat smaller meals throughout the day.
    b. I tend to last between meals without snacking.

13. Which describes the way you instinctually prefer to start your day in order to feel your best and to have the most energy?
    a. A large breakfast that includes protein and fat such and eggs with sausage or bacon.
    b. A lighter breakfast such as cereal, fruit, yoghurt, breads and possibly some eggs.

14. Which characteristics best describe you:
    a. In general, I digest food well, have an appetite for proteins, feel good when eating fat or fatty foods, am more muscular or inclined to gain muscle and/or strength easily.
    b. I am a more lithe build, prefer light meats and lower fat foods, am more inclined towards enduring athletics.

Total a. answers: _____ ***Total b. answers:*** _____

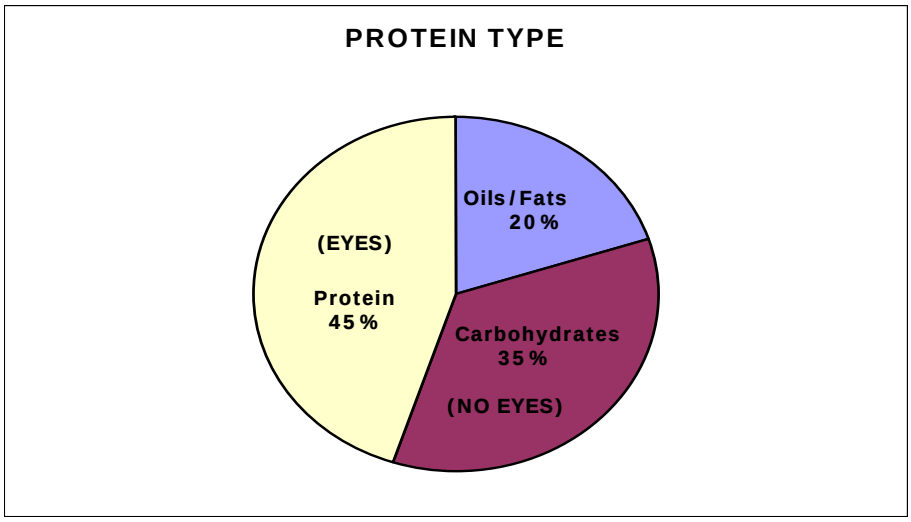
DETERMINING YOUR METABOLIC TYPE

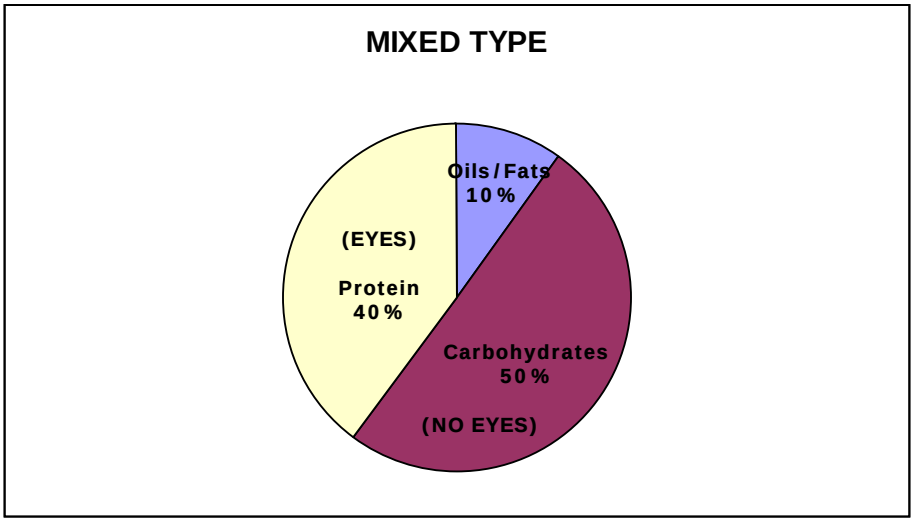
Please note: This simple questionnaire only gives you a rough guide as to the ratios of macronutrient foods you should be eating. To get a clearer more accurate idea of what foods are optimal for your health, you can buy *The Metabolic Typing Diet* by Bill Wolcott and Trish Fahey (for basic testing), or find yourself a metabolic typing advisor (for advanced or comprehensive testing). Other advice regarding food choices is found in the text above and in the resources listed within the text.

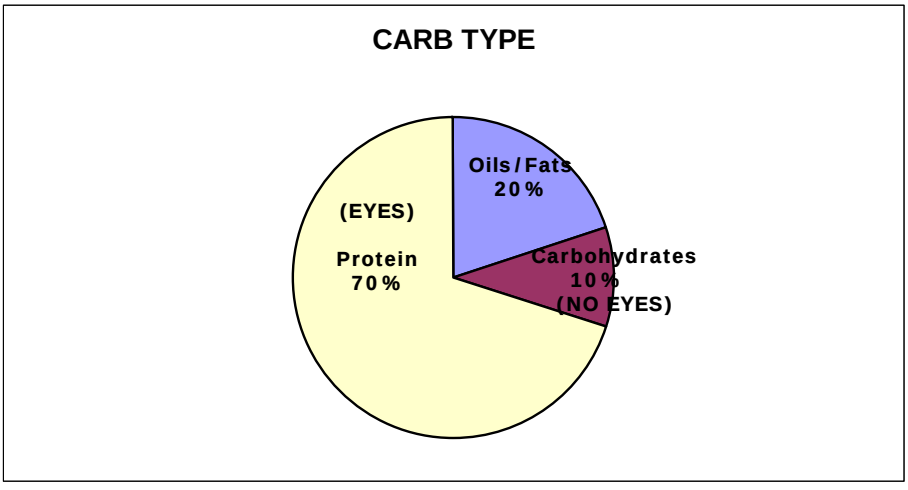
To score you test, add the questions you circled **A** and the number you circled **B.**

- If your number of **A** answers is three or more than **B** answers, you are a protein type
- If your number of **A** and **B** answers are within two of each other, you are a mixed type
- If your number of **B** answers is three or more than **A** answers, you are a carb' type.

This is how a dinner plate of each metabolic type should look portions wise







Meal / Shopping Planner

Day	Rotn day	Breakfast	Lunch	Dinner	Snacks	Condmts	Drinks
Mon							
Tue							
Wed							
Thu							
Fri							
Sat							
Sun							

Shopping list:

☑	☑
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

Feel free to photocopy this sheet while it is still blank and/or to laminate a copy so it's a write & wipe planner!