Wai Intro: An Optimal Diet?

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Prologue

Nowadays the average life expectancy is about 80 years old. How many of these years are healthy? According to Dutch research done in 2005, people were healthy until they started to suffer from a (chronic) disease/disorder*. On average this happened when they were in their mid-40's. So from that moment on until our death we are not completely healthy anymore.

Several factors can play a role in our health, such as genetic factors, air pollution, psychological factors, sleep, and diet. Although all of these factors are important, diet is a factor which is very often underestimated, even though we consume large amounts of food daily, and over the course of many years. This makes diet probably the most important factor in our health, especially because it is one we (normally) have control over.

What exactly would an optimal diet be?
An individual optimal diet depends on personal goals, circumstances (e.g. health, financial situation), paradigm, etc. In this article we will look at an optimal diet from a possible optimal health perspective.

An optimal diet has to provide our body with everything it needs, and to avoid harmful substances as much as possible. In our (western) society the former isn't too much of an issue, but we assert that the latter is where most of our health issues stem from. Before getting to that though, let's explore what we might learn from the morphology of our digestive system.

At the beginning of the digestive system are the teeth. Herbivore teeth are characterized by being flat and ridged, to facilitate the grinding of their food. Examples of herbivores are elephants, sheep, and horses. Carnivore teeth function like scissors, they can hardly chew. Examples are dogs, cats, alligators. Our teeth are somewhere in between these extremes. As such we are omnivores. Pigs and bears are examples of this category.

Our digestive tract isn't short and smooth like a carnivore's, nor long and elaborate with several (subsections of a) stomach(s) like a herbivore's. When comparing ourselves to other primates it seems that our digestive system, though unique, is similar to that of Capuchin monkeys (Milton, 1987). The high-quality diet of Capuchin monkeys (*Cebus* species) consists of sweet fruits, nuts, oily seeds, and animal foods (insects, eggs and small vertebrates).

*The diseases/disorders were: heart disease, asthma/COPD, cancer, stroke, diabetes, chronic stomach/intestine disorders, rheumatic disorders, chronic back problems, arthritis, high blood pressure, migraine. Source: CBS.nl

What do we need?

An optimal diet should give us everything we need:
1. Macronutrients: sugar (carbohydrates), fat, and protein
2. Micronutrients: vitamins, minerals, and trace elements

Macronutrients: Macronutrients we need the most of: sugars and fats form the bulk of the macronutrients. The more active we are, the more sugars we will need relative to fats (we always need a certain base amount of fats). Protein is needed for maintenance and (re)constructive purposes.

Protein
We need very little protein, the body can't even store protein. To compare: mother's milk from 10 days onward only contains 1% protein, which suffices to give the growing baby all it needs. As a matter of fact consuming too much protein can cause depressions, sleeplessness, vitamin D deficiency, and lack of vitamin B2, B6 and folic acid for these are required to process protein.
We don't actually need protein itself, but all the amino acids. Some amino acids (methionine and cystine) are more scarce than others. There are many sources for high quality protein, animal as well as vegetable. For instance if one would just eat (the right combination of) fruits and nuts, one would get all the protein needed. Of course if we'd then want to build lots of muscles, we might need some extra protein from an additional source.

Sugar
Our brain alone uses 125-150 grams of glucose per day, and our muscles and organs need sugar energy as well. Sugar has been subject to controversy over the years, as far as health is concerned. It has been given the blame for a number of health problems, either directly or indirectly. Is sugar really as bad as is commonly believed?

Carbohydrates or saccharides (= sugars) are chains of molecules with different lengths, according to which they have been classified.
- Monosaccharides, or simple sugars, are single molecules, and make up the basic building blocks of all carbohydrates. Some examples are: glucose, fructose and galactose.
- Disaccharides consist of two monosaccharides, and are as such the simplest polysaccharides. Examples are sucrose, lactose and maltose.
- Polysaccharides are long, often branched chains of 100-3000 monosaccharides. Examples include starch, glycogen, and cellulose.

Also referred to as "refined/white sugar" or saccharose, sugar is a disaccharide called sucrose. Sucrose consists of the monosaccharides glucose and fructose. Glucose is the main form of ‘sugar’ energy the body uses, fructose an alternative form. As such, sucrose is also a form of energy. Every fruit contains a combination of glucose and fructose, and most also contain sucrose.

One of the most prominent opinions about sugar is that it is 'just empty calories'. This refers to the fact that table sugar has been stripped of anything else than just the basic molecules glucose and fructose. Although table sugar is (almost) devoid of any micronutrients, it is still a macronutrient, a useful source of energy. If daily requirements of micronutrients are met, there is therefore no objection to the use of sucrose in order to meet daily macronutrient requirements.

Sugar is just a form of energy, and can be used without problem as long as the complete diet meets macro- and micronutrient requirements.

Fats
Our body uses fat for different purposes, two of which are energy and storage. Among the users of fat energy are, perhaps surprisingly, skeletal muscles. Skeletal muscles account for about 50% of the energy use in a resting person, and up to 90% during high physical activity. In resting and moderately active muscles the basic energy comes from fatty acids and ketone bodies (derived from fatty acids). The internal organs, for example the colon and the heart, also need fats to function. Fat is essential to absorb vitamins and minerals. It is also the main ingredient in mother's milk.

Generally speaking it does not matter if the consumed fats are saturated or unsaturated, because the body can convert both according to its needs. Only some specific unsaturated (omega-3) fatty acids need to be taken in directly. In a well-balanced diet both saturated and unsaturated fats are consumed. There is nothing wrong with natural (raw) fats. Cold pressed olive oil, fats from avocado and Brazil nuts, are examples of clean and healthy natural fats.

There are 4 kinds of essential omega-3 fatty acids:
- linolenic acid (LNA), or alpha-linolenic acid (ALA)
- eicosapentaenoic acid (EPA)
- docosapentaenoic acid (DPA)
- docosahexaenoic acid (DHA)

LNA/ALA can easily be gotten from for instance fruits. Part of EPA, DPA, and DHA can be converted from LNA/ALA (DHA conversion is minimal or non-existent with men); DPA and DHA are only present in animal sources.

Another important nutrient is cholesterol. Because it's so important, our body can produce most of the cholesterol it needs, through a long chain of chemical reactions. Because it doesn't make all we need, we can get adverse effects if our diet lacks enough cholesterol. The more dietary cholesterol we consume, the less our body needs to make. Excess dietary cholesterol is readily converted into bile acids.
Cholesterol has several functions. For example it plays an important role in cell membranes, it helps with digestion of fats and fat-soluble vitamins (conversion to bile acids), and is the precursor for the synthesis of vitamin D and the steroid hormones. These hormones include cortisol, aldosterone, and the sex hormones progesterone, the various estrogens, and testosterone. Plants do contain cholesterol, but only in small amounts. Healthy dietary cholesterol is mostly present in raw egg yolks. Raw fish is also a good source.

Micronutrients: Although micro-nutrients are important, in western societies deficiencies are more the exception than the rule, and are easily remedied. Things of note are:

The body can adjust the absorption rate of micro-nutrients; the more something is needed, the higher the absorption rate, and vice versa. A lower rate therefore doesn't mean the body has problems with absorption for a given micronutrient, it just means it doesn't need that much of the specific nutrient at that moment. This mechanism can be disturbed by the use of supplements, because of their extreme concentration. The need for supplements means a diet isn't optimal anyway.

The misinterpretation of this mechanism plays a part in for instance the calcium/osteoporosis issue. The general consensus that calcium prevents osteoporosis has led to an increasingly higher daily recommendation for calcium, because the more calcium was consumed, the less was absorbed.
T. Klompmaker has proposed the hypothesis that excessive calcium consumption actually *causes* osteoporosis instead of preventing it. Published in Medical Hypotheses.

We only need very little vitamin B12, yet a deficiency can have serious consequences. Our body stores it in the liver, and a full store can last for years. The current consensus is that the only healthy source of natural vitamin B12 we can use is the one from animal sources.

How strict should we adhere to Recommended Daily Intake(RDI) levels? How much we need on a daily basis depends on several factors, like age, build, activity level, etc, and can even vary from day to day. This means the RDI has to have a large margin of error built in. To give an example: to prevent scurvy, a daily intake of around 5-10mg of vitamin C is sufficient. The RDI for vitamin C is 75mg. In our society we tend to think that more is better. This is not the case with micronutrients. Optimum health is about balance, the right amount, not too much and not too little.

Fiber
What most people think we need, but actually we don't, is lots of fiber. Fiber passes through the gut (virtually) unchanged, and makes up most of our stool. The reason why we're told we need lots of fiber, is to stimulate bowel movement. Grandmother's wisdom tells us we should eat plums to accomplish that, or olive oil, yet plums contain little fiber, and olive oil none. Fiber makes small wounds in the intestine wall, which aggravates in such a way that our body wants to get rid of it. Our bowels should be able to move by themselves, without that much external influence. The reason why they become more passive than they should be, is because of consuming substances which are sedating, like opioid peptides. More about those later.

While most common diets lack certain nutrients, the majority of our problems stem from ingesting harmful substances.

What's bad for us?

Although everything is connected, we can distinguish 3 main groups:
1. Cooking
2. Dairy
3. Vegetables, grains, beans

Cooking: The main problem. Although the word 'cooking' is used here, it means heating of any kind, like frying, boiling, pasteurizing, roasting, etc. Heating a substance can change its structure, so cooking food is always a chemical experiment because all kinds of new substances originate. The problem is that these new substances are quite similar to substances produced by our body, and as such are not recognized as 'alien' and/or dangerous. Both temperature and duration of heating play a role in the extent of change.

Cooking protein
Due to heat, preparing food creates new substances. Most of these originate from proteins reacting with carbohydrates and/or creatinine (red meat) and/or nitrate (vegetables). They are called HeteroCyclic Amines (HCAs); many of these HCA are beta-carbolines, but also isoquinolines, imidazoquinolines and imidaziquinoxalines are formed. Many of these HCAs are physically addictive and appetite enhancing, making us eat more than we need. The beta-carbolines are members of the indole family of alkaloids which includes the highly illegal drugs LSD, Psilocybin, DMT, Bufotenin, and Ibogaine. Interestingly, the beta-carbolines have never been treated as illegal substances. All of the indoles possess a structural similarity to the neurotransmitters serotonin and dopamine.

The known effects of HCAs are:
a. Act as neurotransmitters - A neurotransmitter, as the name suggests, transmits signals between nerve cells. By interfering with normal nervous system processes they can inhibit or invoke certain responses.

The results are manifold, but some examples are: cause physical stress, sedate, increase blood pressure, inhibit sexual appetite, enhance aggressive behavior.

b. Cause cancer
Many HCAs are carcinogenic and/or mutagenic. Part of the process causing cancer is mutagenic substances damaging specific cell-DNA. DNA-damage increases linearly with the intake of HCA. To give an idea: we all know that smoking is connected to lung cancer. In 1981 Matsumoto et al. looked at how much of 2 known mutagens present in cigarette smoke was also present in grilled beef. They found that the amount in 1 gram of grilled beef was equivalent to the amount in 8 cigarettes.

c. Cause brain diseases
Because they're toxic, and quite similar to serotonin and dopamine, the destruction of receptors to those neurotransmitters can cause Alzheimer's, Parkinson's, and schizophrenia.

Which foods?
How much HCAs originate depends on how much protein the food contains, and on how much the food is heated (temperature and duration). Because red meat contains high levels of both protein and creatinine, prepared red meat contains the most HCAs, especially when grilled. Besides prepared red meat, also prepared fish, soy and poultry contain high concentrations of HCAs. But also prepared foods containing less protein contain HCAs, like prepared grains and vegetables, and even foods like beer, soy sauce and canned orange juice. Taste enhancers are mostly concentrated protein, filled with lots of physically addictive beta-carbolines that make us want to eat more. MonoSodiumGlutamate (MSG), popular in the Chinese kitchen, indirectly has the same effect.

Cooking fat
Due to the influence of heat and/or hydrogenation, a part of the unsaturated fatty acids is damaged, and transformed into so-called trans-fatty acids (also called trans-fats). Because of this damage, unsaturated fats very often become saturated (trans-fats are classified as saturated, though chemically speaking they are still unsaturated). Therefore 'bad food', like junk food, on average does contain more saturated fatty acids, and the ratio of essential unsaturated fatty acids to saturated fatty acids decreases due to food preparation. This does not imply that saturated fatty acids are bad for one's health. Only the damaged fatty acids, the ones in prepared food are bad. Along the same lines, not all unsaturated fats are good, as many damaged harmful fatty acids are unsaturated. Consuming trans-fats can for instance cause vascular diseases, and increase the risk of breast cancer. Examples of foods containing trans-fatty acids are french fries, margarine, cooked meat, pastries and milk.

Cooking cholesterol
Nowadays experts tell us that there are two kinds of cholesterol: Good cholesterol, also called HDL, and Bad cholesterol, also called LDL. Is this the case? What are HDL and LDL?

Fats and cholesterol are soluble neither in water nor blood, so in order to transport fats and cholesterol via the blood, the body needs to use transporters. These transporters are so-called lipoproteins. Four types exist, one of which is associated with good cholesterol: HDL, and another with bad cholesterol: LDL. Of the two, LDL transports most of the cholesterol (60-80% vs. 15-40% for HDL).

Labelling HDL and LDL "good" and "bad" is not logical, because the label refers to the substance transported, and not to the transporter itself. Nevertheless, high levels of LDL are associated with heart disease. Labelling cholesterol itself "good" or "bad" is also not logical, because cholesterol is always the

same molecule. Since neither LDL itself, nor cholesterol can be held responsible, what is the guilty substance?

Heating cholesterol results in the oxidation of part of the dietary cholesterol into harmful unnatural oxysterols (the body produces natural oxysterols). Unnatural oxysterols can have several adverse effects. These effects link unnatural oxysterols to digestive problems and a weakened immune system, but more importantly to the harmful properties of LDL, an increase in LDL production, and heart and vascular diseases (e.g. atherosclerosis).

The foods with the highest amounts of unnatural oxysterols are those containing cholesterol that have been heated (a number of times); products containing eggs, and especially dried food products such as dried egg, dried cheese, milk powder, and dried meat.

Popular drugs called statins inhibit the production of (healthy) cholesterol by the body (as well as squalene and coenzyme Q10). This does lower the total amount of cholesterol, but not the unhealthy oxysterols.

Dairy: Mother's milk of every mammal contains different 'cocktails' of growth factors, which enhance the growth and development of different organs in sucklings. These 'cocktails' are different for each species, and as such non-human growth factors are not meant for humans, regardless of age. Moreover, cells in adults don't need to multiply that fast anymore.

Besides stimulating growth of normal cells, growth factors unfortunately also stimulate growth of cells that have been damaged by mutagenic substances (e.g. from prepared foods). If DNA/RNA has been damaged so specifically that the production of growth inhibitors is decreased, the resulting enhanced growth may cause cancer. Increased exposure to growth factors may strengthen such cancerous cells. Different growth factors increase cancer-risk of different tissues.

Vegetables, Grains and Beans: For human consumption, Vegetables, Grains and Beans (VGBs) present many different substances inhibiting digestion and the uptake of nutrients, as well as toxic substances. Cereals and beans contain on average about 6-fold more fiber than fruit does (fiber also inhibits essential cholesterol absorption, which can cause depression and sleeplessness). As mentioned above, heating proteinous VGBs can originate HCAs.

Soy has been marketed as a miracle food, a worthy meat-substitute for vegetarians and vegans. Unfortunately it contains many toxic substances. It falls beyond the scope of this article to get into that, but an article which gives plenty of info: The Ploy of Soy by Sally Fallon and Mary G. Enig, PhD.

Dairy and Vegetables, Grains and Beans: Dairy and wheat (rye, barley and spinach too) contain so-called opioid peptides. Our body produces opioid peptides when pain needs to be suppressed and give us a 'high' feeling when we need to go on; these are called endorphins. This opiate-like activity is the same as in substances derived from the poppy plant, like opium, morphine and codeine (and in heroin, which is made from these).
One single wheat-gluten protein-molecule contains 15 samples of one particular opioid peptide. Wheat-gluten also contains a number of extremely powerful opioid peptides. Some of these molecules are even 100 times more powerful than a morphine-molecule.

Opioid peptide containing foods are physically addictive, make us slow and apathetic, and wheat-opioid peptides can 'sedate' the bowels so much that constipation is caused. Because of the addictive properties of opioid peptides and HCAs, many foods nowadays contain heated wheat and/or milk protein, or taste enhancers which are both.

Conclusion: With so many different harmful substances entering our bodies, it seems only logical that we pay the price by suffering so many diseases and disorders. Unfortunately harmful foods are also addictive and/or appetite-enhancing, making it very difficult to eat differently.

An optimal diet?

We are addicted to so many things (including smoking, alcohol, coffee, tea, chocolate, etc), how can we possibly leave all that behind? It can look hopeless and daunting. First though, let's continue on the search for an optimal diet.

To recapitulate:
- Cooking is bad
- No dairy
- No vegetables, grains, beans

What's left?
Fruits, fat/oil, fish, meat, eggs, nuts; all raw. Surprisingly, or maybe not so surprisingly, it is quite similar to the diet of the Capuchin monkeys mentioned in the Prologue. Of course they also eat insects, but to our modern taste that isn't too appealing.

Does such a diet exist? Yes, it's called the Wai Diet (Wai is pronounced like the letter Y). It consists of fruits (possibly freshly juiced or sundried), extra virgin olive oil (or coconut oil/avocado oil), raw fish, meat (organic/grass-fed), egg yolks, possibly some nuts (self-shelled), sugar if needed. Avocadoes, tomatoes, cucumbers are (considered to be) fruits. Many small meals/snacks are consumed throughout the day, to provide the body with everything it needs, *when* it needs it. More information can be found on the website: Wai World. All the info is freely available and there's nothing to buy.

What about herbs and spices?
Herbs and spices have medicinal properties, and as such can/should be used as drugs. Nevertheless, using them sparingly for taste isn't too harmful. As we get used to eating pure products which also makes our sense of smell and taste buds much more sensitive, herbs and spices soon can become too spicy and/or overpowering.

Benefits/experiences.
When looking at benefits, we have to keep in mind they are based upon personal experiences, and are as such subjective and not based on scientific data. Some noted benefits are:
Always super energetic, a deep feeling of healthiness, never physically tired, faster wound healing, stronger nails, soft and strong skin, never sick, better and deeper sleep, thinking clearly, hardly any body odor, non-smelly sweat, food tastes great and gives a feeling of satisfaction, contentment and fulfilment, all senses are far more acute (this isn't always a benefit), easily reaching and maintaining ideal weight, etc.

Of course it's very difficult to imagine how life on the Wai Diet feels without actually experiencing it. It's like trying to explain an orgasm to someone who never had one, or the color red to a person who has been blind from birth.

An older woman of 79 years old went on this diet 4.5 years ago. She had several issues, like high blood pressure, protein in her urine, back pains, tiredness, stiffness, being overweight. To date all that is gone, she is busier than ever and is surprised she never gets tired, she's slim and supple like a teenager, and happy as can be.
One of the people on this Wai Diet used to have terrible acne, and the hospital treatment resulted in very high fever and literally holes in his skin. After stopping the treatment he came across this diet, which cured him completely. His dad (a medical doctor) refused a heart operation, went on the diet, and is now healthy and works out daily.

Is it worth it?
This is the big question, of course. From a purely health-based point of view (and for people who follow the diet) it's easy: yes it's absolutely worth it.
From most people's perspective however, it's extreme and threatens many habits and a big part of life's comfort zone. They see it as if one would have to:
1. Stop eating *everything* that one loves to eat
2. Have an extreme diet with very limited foods and no variation
3. See social life collapse

ad 1. Because almost everything that's loved/liked in modern diets is addictive, life without the addiction looks bleak and unattractive. Like an addict looks towards kicking his/her habit. Of course once the habit has been kicked, new loves will arise and evolve.

ad 2. There are over 6000 different kinds of fruit and plenty of fish and meat. Possibilities for variation are there. Funnily enough, because every food item is so satisfying, the need for variation quickly diminishes. Those who used to love to eat something different every day, going out to restaurants to try out different foods, menus, cuisines, etc, are surprised to enjoy and even look forward to the same foods day in day out. So once on this diet, most people choose to basically eat the same every day, and love every bit of it.

ad 3. This is possibly the biggest issue. How to deal with friends, family, social life? Most people will think you're crazy, try to persuade you to "act normal" or "be social". Aside from sincere concerns, what they often want is for you to share in their addiction. Addictions work well in social environments; perhaps it has something to do with feeling socially accepted, or the lessening of guilt. What also doesn't help is that, contrary to for example smoking, food in general isn't seen/known as being addictive or unhealthy. Of course social life will change, but, after some getting used to and adjusting, can flourish as ever.

Is it easy to do? No. Kicking a habit is never easy, and requires willpower, motivation, and persistence. Once used to it though, it's so satisfying that nobody wants to go back to their old ways.

Is it possible to do it partially?
It sure is, everything helps, but the full benefits will only be experienced when following the diet 100%. As someone who has been on the diet for many years stated: 99.9% is 2 times better than 50%, but 100% is 50 times better than 99.9%! There are several possible compromises, like reducing/quitting

foods with heated protein content, or eating Wai the whole day except for one meal, e.g. dinner.

Many people state that their health is (one of) their highest priority in life, but the real question is: how far is one prepared to go?

Is the Wai Diet a natural diet?
A natural diet is a diet based upon beliefs about what our ancestors ate while living in a natural environment. How much do we actually know about what they ate? It turns out that it's quite difficult, if not impossible, to figure out exactly what we ate in prehistoric times. Archaeological findings are scarce and yield only so much information.

What about the use of fire for cooking? If we're looking at our genus, Homo, it has been around for about 2.5 million years. The longest living species of the genus was Homo Erectus, which was around for 1.5 million years. Our modern species, Homo Sapiens has only been around for 200,000 years. In the course of evolution not that long, comparatively speaking. Scientists disagree about the first controlled use of fire, but most seem to agree that regular use of fires, like campfires, started somewhere between 200,000 - 40,000 years ago. *There is no conclusive evidence as to when actual cooking started.* The first tangible evidence is the use of ovens, which appear from around 40,000 years ago and later. So any guess is as good as any other.

This means that a natural diet is largely guesswork. The Wai Diet could be generally similar to a diet which our prehistoric ancestors might have followed, but it is certainly not a natural diet.

Energy Management

When energy enters the body, the following priority order is used:
1. muscles and organs
2. blood sugar
3. glycogen depots
4. body fat

First the muscles and organs are supplied with the energy they need at that moment, then the blood sugar level is replenished, next the glycogen depots are filled, and lastly all the excess energy is converted into body fat.

Glycogen is mainly stored in the liver (about 400 kcal) and the skeletal muscles (about 1200 kcal). Skeletal muscles account for about 50% of the energy use in a resting person, up to 90% during high physical activity. In resting muscles the basic energy comes from fatty acids and ketone bodies, and moderately active muscles will use blood sugar in addition to that. Glycogen can be reconverted into glucose whenever needed, for instance when muscles are maximally active. Glycogen from the liver can be used for different purposes, but that from muscles can only be used for muscle activity.

If those glycogen depots are full, the body converts glucose into body fat. When needed, body fat can be made to release fatty acids, to fuel organs and muscles. If the body fat accumulated is not used up, which means energy intake is greater than energy output, bodyweight will increase.

When our glycogen depots are full and the blood sugar level is maximal, we are at the peak of our energetic potential. In order to keep near this peak and avoid unnecessary insulin secretion (extra insulin is needed when glucose needs to be converted into glycogen and/or body fat) we only need to replenish the blood sugar when needed. If the body is used to this system, it will signal when it needs more energy, by a very slight and subtle hunger sensation.

Losing Weight
How to lose weight? No matter what the diet, because of the mechanism explained above, weight is a matter of energy input/intake vs. energy output. If more energy is taken in than is used, body weight will increase, and vice versa. As such, to lose weight, one only has to lower the amount of calories consumed, to less than the amount of calories used. Sounds simple, doesn't it? Unfortunately there are some factors which make things less easy. Consuming addictive and appetite enhancing substances makes it difficult to stop eating in time. Since the stomach is used to reacting to pressure to convey the 'full' feeling, instead of the natural reacting to the intake of nutrients, that also makes it more difficult to determine when to stop. These factors are not a concern when on the Wai Diet.

To lose weight on a regular diet, it works to strictly monitor the reduction of caloric intake, and/or to try to eat "until 80% full" as they apparently do in Okinawa. Eating lots of vegetables can help, because they give a full feeling yet do not yield that much energy. Eating enough fats is important, because otherwise the body will 'think' there is a fat shortage, and will try to hold on to the body fat while giving more hunger impulses. Exercise can help, but has to be low intensity, like (brisk) walking. High intensity exercise will use more carbs as well, which promotes more eating.

Eating more often and in smaller meals lowers the need for conversion into new body fat, and promotes the use of existing body fat.

Diabetes
Diabetes is linked to insulin production, which depends on sugar, protein and fat intake. Extra insulin secretion is needed when excess energy needs to be converted into glycogen and/or body fat. Hence the bigger the meals, the more insulin needs to be secreted. Also, the longer the conversion process lasts, the longer insulin needs to be produced. Aside from the size of the meal, two other factors play a role: the composition of the meal, and the presence of fat. Contrary to what many people believe, consumption of protein also produces a significant insulin response (only slightly less compared to pure glucose). Fruit contains glucose and fructose (and sucrose, which is both). Fructose takes a bit longer to be converted into glucose, which means the blood sugar spike will be lower and spread out a bit. Starches (complex sugars) on the other hand, are long chains of only glucose. These will enter the bloodstream and cause a big spike. To convert excess energy into body fat, fat is needed. If it's present in the food, the conversion can happen faster, resulting in a shorter insulin response.

In the first stage of diabetes, excessive insulin is secreted, and excessive protein and glucose excreted through urinating. While blood-glucose- and blood-amino acid levels remain high, due to the previously discussed eating habits, insulin secretion keeps being stimulated. Eventually, less and less insulin is secreted in reaction to glucose stimulus, to prevent insulin excess, causing diabetes.

Raw food and bacteria

On the Wai Diet everything is consumed raw. Isn't that dangerous? What about Salmonella? Concerns about bacteria are something of a routine in our daily lives. We keep our house clean, teach our kids to

wash their hands before a meal, and make sure we cook our food thoroughly. Despite these (and other) measures we are still getting sick.

Bacteria are not only everywhere around us, they are also inside us. For instance our intestines contain millions of bacteria, of over 400 different species, which participate in our digestion. Bacteria (like salmonella) are also present in all of our food, especially in its raw, natural state.
In nature there seems to be less concern about bacteria. Cheetahs sometimes store their prey for days in a tree before eating it, the fox steals and eats raw eggs, and chimps, gorillas and other primates eat insects. The reason why these animals don't get sick is because they have a trained defense system, which is used to taking care of local bacteria.

To be able to deal with bacteria, we have to train our bodies' defense system, by being in contact with, and ingesting bacteria regularly. This includes Salmonella. Only if the defense system is exposed often enough, will the body be well trained to overpower these bacteria.

Epilogue

In this article we've looked at a way to arrive at a possible optimal diet for health. Of course the information presented is not always detailed, and the scientific sources not listed (they are on Wai World), but hopefully it invites to read more. Do validate the information, check up on the sources, and get educated.

There are several things to consider when scrutinizing some of the information presented to us.
- News stories in the media are often more 'sensational' than the scientific articles they're based on. Thus 'possibilities' can easily turn into 'certainties', and suppositions into opinions.
- Scientists often need to publish articles to be recognized in their field and to receive new funding. Sometimes this might lead to conclusions being a bit more flamboyant than the results would merit.
- Industries which fund scientific research are not interested in funding research which could harm their name and sales. Also, the research they do fund cannot result in a negative report; therefore scientists are sometimes even required to sign a paper in which they agree not to publish if the funding company doesn't agree.
- Finally, results need to be weighed against the setup of an experiment, because there are often several factors in play. To illustrate: a (fictitious) experiment is set up to investigate a possible influence of fiber consumption on cardiovascular diseases. A high(er)-fiber diet group and a control group are followed. Results show that the high(er)-fiber group has significantly less cardiovascular diseases than the control group. The researchers conclude that fiber might have a positive influence on cardiovascular health. The newspapers publish their story "Research shows that eating more fiber prevents cardiovascular diseases.". So where's the catch? The people in the high(er)-fiber group in general had a healthier diet (and lifestyle), not only containing more fiber, but also an increased amount of micro-nutrients, and a decreased intake of harmful substances. Fiber in this experiment might have been an important factor, but it is far from certain.

How to live one's life is a personal choice for every individual. Each of us has to decide which health and dietary road to follow. Depending on what one wants to achieve, certain choices might be more beneficial than others. The Wai Diet is optimal if one wants to remain healthy and active for as long as possible.

Sources

- www.WaiWorld.com - the articles there contain the references to the scientific articles
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