The Process of Digestion

We are taught that the body digests food, obtaining all the nutrients, and the remaining wastes go in the toilet... Not true...

We are told that some things are bad for us, without every being told why, and that some things are essential to life, without an explanation of where this information comes from, and how valid it may be. There are in fact numerous different opinions, all equally valid, credible and scientifically substantiated, so how can they all contradict each other.

So in reality, as there is no proof of one idea over another, there is little to choose between - except the feeling that it leaves you with.

In changing one's diet, as in any situation, it is vital to have a belief that we have the ability and right to do so, as well as correct information. To fill oneself with knowledge that is disempowering, is half as effective as a self-empowering view of that same knowledge.

Here we will glimpse over the edge into some aspects of digestion. Like any other subject, the more you look at it, the greater detail you see, and the more questions arise, not to mention, the number of unexplainable anomalies that come up.

The Length of the intestine alone, indicates an expectation for a diet of predominantly raw vegetable matter.

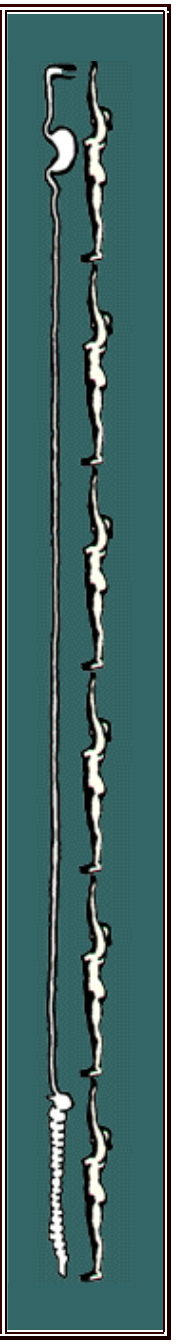
Firstly, sweeping all misconceptions aside, the body does NOT digest food. Microbes are the main players in this amazing process, and while the body both harbours and encourages them, it did not create them, and therefore cannot lay claim to them in any real sense. At best it is a symbiotic relationship.

The body has simply created an environment in which these bacteria proliferate. And they do so at the expense of the food that we eat. We pour in foods, water, heat, and both acids and alkalis, to keep their situation just how they like it, so that they can breed more of themselves. In doing so, they give off bi-products that our bodies utilize. The body does aid them with certain chemicals that they cannot produce, such as fat dissolvers, and a whole array of powerful digestive enzymes, so that our bodies may gain as much from the exchange as possible, but they are pretty much on their own terms in there. These cultures we call friendly bacteria, the process of their multiplication is digestion, and the products of these processes are known as nutrients. They free up vitamins, minerals, amino acids (proteins), carbohydrates, fatty acids, etc., that would be locked away in the cells of the foods that we eat and would pass through us untouched without these little guests of ours.

However, there are thousands of other bacteria that would love to live inside of us and be fed and housed in such perfect conditions. And they do. They require little different from
the 'friendlies', but when these unfriendly bacteria breed, (otherwise known as fermentation or putrefaction (rotting)), they give off their own bi-products, differing greatly in chemical composition from nutrients, they are therefore useless to the body, and we loosely use the term 'toxins' for these components.

The friendly bacteria should dominate the intestines by about 80%, with just 20% unfriendly bacteria existing in their shadow. But a lifetime of foods which tend to breed more unfriendly bacteria must end up with the inevitable results - about 80% unfriendly, 20% friendly, or worse.

Fresh, raw, ripe fruits and vegetables eaten in reasonable amounts and simple combinations will always help the "friendly" bacteria to proliferate. These were the only foodstuffs available to us during 99% of our evolution. They are the fuels that our systems are designed to work with, and the elements that our body is built from. Only in the latest fraction of our existence has Mankind drifted from this entirely satisfactory diet.



Foods that are high in complex carbohydrates (starch), will tend towards fermentation, and those too high in protein will certainly aid putrefaction. Moreover, the more complex the combinations of foods, the greater the tendency there is away from digestion, and towards putrefaction/fermentation. This is because certain things must happen at certain stages during their passage throughout the digestive tract. Even a delivery of the RIGHT materials to the wrong place in the tract, or at the wrong time, will mean that a different bacteria will act upon them, and instead of nutrients, you end up with toxins.

The body has learnt to recognize the difference between these products, as well as the processes that create them, and has some degree of control over which of the two processes predominate. But of course, endless use of these control measures leaves them somewhat strained. And anyway, it is much easier, simply and more efficient to control what you eat according to a few simple guidelines, easily observed in nature….

Several different stages are required
to break down the various elements that we are capable of using.
Each stage maintains a particular environment specific to its requirements.

Mouth = Starch

A. The first stage of this process begins in the mouth itself, where the food is mixed with complex sets of enzymes, etc. in the saliva. Starches (complex carbohydrates) are particularly affected by this process, as the successful action upon starch by the "friendlies" depends upon the presence of an enzyme complex called "Ptyalin". In the absence of Ptyalin, ONLY the unfriendlies can work on the starch, producing alcohol and ethanol rather than fuels for the body. Ptyalin production in the mouth is ENTIRELY inhibited by the presence of sugars (simple carbohydrates) or acids (vinegar, etc.). This is because acids and sugars have there own agenda in digestion, and are rarely found together in our natural foods.

B. Also, taste triggers the release of the appropriate juices in their various locations throughout the intestines, so the entire system is instantly prepared for what it initially experiences.
Ex: A vegetable that tastes like a spice will confuse it the entire system.

Note: Once past the throat, the pulped and ensalivated mixture is known as Chyme.

Stomach = Protein

Highly acidic (up to 1pH), and very hot. Only very specialized microbes can remain here, and nearly none do. It is a great misunderstanding to say "stomach bug", as there is nearly no bacterial action here, almost all life is destroyed in environments as acidic as this. Even to say that nutrition is gained here is misleading. There is virtually no absorption of anything through the stomach walls.

The Stomach is the first stop in the food's journey, because its job is to start the breakdown of those elements that are the most troublesome and expensive to the system; proteins. Built of chains of Amino Acids, specific to the cells that built them, Proteins must be broken down in order to be rebuilt in the liver, into sequences appropriate to our cells. NO proteins that we eat are used as they are - all are broken into their component Amino Acids.

Incidentally, every cell in existence contains proteins that can be broken down in this way.
No one to date has ever suffered from a 'lack of protein'. To prove it, ask your Doctor or nutritionalist what the medical term is for this... There isn't one !

Of all usable substances, proteins take the longest, and are the hardest to digest. They leave the most mess behind them, and cost the most in terms of water and energy. The entire Stomach exists simply to initiate this breakdown, so that our friendly bacteria in the intestines can take the amino acids they need, and leave us what we need.

In the stomach, there is no action upon the other elements essential to life. Food will remain here for anything from 10 minutes to three hours, depending upon its protein content. All the protein not acted upon in this stage will go on to putrefy in the bowel over the next few hours, so food must not be hurried through this stage by overeating.

Duodenum = Fats

A. Fats (oils) are generally water resistant, and insoluble. For the body to utilize them it must first make them water-soluble. This is done by an interesting chemical phenomena called emulsification, and is one of the attributes of Bile. Secreted from the liver and held in the gall bladder until it is needed, the orange-coloured bile enters the system just after the stomach. If it is not called for (no fats present in this meal), then the Gall Bladder remains relaxed and the more concentrated emulsifying aspects of Bile remain there to concentrate further, so that when they are called upon, they will do they job most efficiently.

B. As the food passes from the stomach to the small intestines, it must be changed from VERY acidic (>1 pH) to VERY alkaline (<14 pH). This is another aspect of Bile, and another reason why it is called into the tract with such frequency.

C. Bile also carries with it much of the debris that is cleaned from the blood by the liver. The multitude of dead cells and immune debris leave the body via this route. Dead red blood cells give Bile it's colour, and make faecal matter brown, to the degree of its use.

Upper Small Intestine = Sugars

A. In this very alkaline place, much bacterial action goes on, friendly and unfriendly. Many starches are broken down into sugars (as long as the food had significant amounts of Ptyalin chewed into it) and are absorbed into the intestinal walls (along with the sugars eaten as sugars), to be carried to the liver for storage and distribution (after being converted to Glucose - the only sugar the body can utilize).

B. Also here is where most of the emulsified fats leave the intestinal tract for the liver, for further processing into the multitude of oils utilized by every cell the body. Only cooked fats are confusing and problem-causing to the body, ALL raw fats are convertible, useful, and necessary in the life of ALL cells and systems.

C. "Processed sugars and starches" slip through the floorboards of the intestines, and find their way into the blood stream, and then ultimately into the cells themselves, without being called for. Habitual use of them will stress the Pancreas, which must produce unnatural amounts of Insulin to get the sugars out of the bloodstream, and into cells. Excessive sugar in the cells goes through the "Krebbs Cycle" and if it cannot be utilized by the cell, (sugar-highs cannot go on forever!) the compounds are "hooked end to end" within the blood cells, and form a different compound commonly known as Hard Fat (as in Hard Cheese), and is shed back into the bloodstream. This sticky substance MUST then be stored in the Adipose tissues, in an attempt to stop it clogging arteries, but all defences have their limitations.
Note1: With constant over use, the Insulin secretion glands in the Pancreas will fail, and conditions such as Pancreatis, and finally Diabetes are often witnessed.
Note2: The race with the largest Pancreases are also those that feast on the greatest % of white rice in their diets, and the lowest raw veggies - The Filipinos.

D. Another avenue of action that leads to getting fat from eating processed sugars and starches, is bacterial. Our friendly bacteria are expecting sugars and starches that come conveniently packaged within the foods - alongside the necessary minerals and enzymes to aid their assimilation. In the event of processed foods, the body can do much to add enzymes from the Pancreas at this point, but it is nutritionally and energetically expensive, and will eventually exhaust supplies. However, while being difficult to digest, these unprepared sugars and starches are perfect for fermentation, and the unfriendly bacteria have a field-day, multiplying uncontrollably and saturating the tract with aggressive and pathological toxins such as Ethanol, Alcohol (sugar-high is sometimes just fleeting inebriation), and gases, often with Methane and sulphur compounds (very dangerous gases for bacteria and beings alike).

E. Now we have several problems all at once.
An overgrowth of an unfriendly bacteria in an environment that is bloodless, thus immune-resistant, and very difficult to suppress. Often the solution is the general alimentary defence against invasion of any kind. The mucous membranes that line the tract secrete extra amounts of mucous, in the hope that the problem will just slide out of the system without too much damage to the lining itself. A great defence, and it only costs the body the nutritional content of the food it is letting slip away unassimilated. However, as we will see later, if this defence is utilized too often, it causes issues further down the tract.

The other immediate problem with overgrowth is the toxic bi-products of the unfriendly cell

multiplication. Most of which are trapped in the Chyme itself (and now the mucous as well), and will later be assimilated by the intestinal lining as it attempts to coerce nutrients from the tract.

Note: A bottle of wine or beer can be engineered (by precise temperature control and sugar content) will stop maturing after a given time. This is because the debris from the fermentation process, becomes so poisonous within the liquid that it kills off the very bacteria that produced it. In the same way, both the toxic residues and the pathological gases in a fermenting bowel massacre both friendly and unfriendly bacteria alike.

Lower Small Intestines = Minerals & Vitamins

A. Only here does the real mining of elements begin. Until this point, the body has been secreting components that help our internal bacteria to break down foods to make assimilable the nutrients created by plants lower in the foodchain. Oils, amino acids, sugars, etc., etc., all are strung together from their composite atoms by the plant world (wholly or in part). It is the plants (fueled in turn by the sun of course) that are the real creators of life, we are just the recyclers.

B. Even in the utilization of relatively simple particles such as minerals, we are dependent upon the plant kingdom to provide our bodies' with the correct enzymatic bridges necessary to collect and utilize even these elemental parts appropriately. The organic compounds that allow us to use them are somewhat fragile. Some cannot even withstand bombardment by unfiltered sunlight, or the chemical action of Oxygen. Some are more robust than others, but one thing that they all share is their susceptibility to heat. Once cooked (over 65 C), they all loose these complex organic structures. Then the body either has to recreate them as best it can, or simply go without that mineral. To drive the point home, I ask whether eating nails would help with an Iron deficiency ???

C. Vitamins are very similar in their integrity and fragility. Once taken over a certain temperature, they cease to be useful, and either have to be repaired or forgotten by the system.

Appendix = Lymph Glands

A. If any of the above stages were not complete, here is where they begin to cause problems. This tiny finger-like structure hanging from the base of the Colon - conveniently located right where the small intestine joins the large, is the body's largest Lymph gland, and a secretor of immuno-fluids into the bowel. This is nature's insurance against a totally unchecked spread of unfriendly bacteria proliferating throughout the rest of the intestine. It seems to have been placed perfectly in the position where the problems usually start; at the area where Chyme enters the Large Intestine from the Small Intestine, IE; when a small pipe enters a bigger on there is a slowing in movement, and a fermenting mess would otherwise sit against the mucous membrane potentially compromising the integrity of the system.

B. No one seems quite sure how the immune-suppressive activities of the Appendix really manifest, however, it is clear that if this emergency measure is required to suppress unfriendly bacterial proliferation almost constantly, which is beyond its design, then failure is inevitable, as with all defenses.

C. There is much controversy over the efficacy and even need for this much belittled organ. However, it has long been seen that after Appendectomies, the Lymph nodes surrounding the site where the Appendix used to be, always swell to spread between them the volume of the Appendix itself. Some people's even grow back ! Not so redundant perhaps...

Colon = Water & Minerals

A. In the final part of the system, there is as much to be reclaimed as there is to be gained. So many nutrients have been added to the Chyme on it's journey, that there wouldn't be much net profit from the venture without the Colon, the largest tube in the body. It starts busily to draw water, enzymes, minerals, vitamins, trace elements, etc., through the colon wall.
Here it must be pointed out that if the minerals are inorganic (eg; split from their organic structures by cooking), they are not useful to the body, in fact the immune system and kidneys will go to the trouble of picking them up and filtering them out, rather than have them end up in the liver. After many years of lowering the immune system however, they will form stones on the kidneys, and will block and confuse the systems of mineral distribution in the liver. For example, the calcium in pasteurized milk will not make healthy bones, but it will end up as sharp calcitic spurs on the ends of bones, causing rheumatism in years to come, and the immune system functions to shed them, it will actually cost the body calcium ! Why else do you think that the nations with the highest pasteurized milk consumption have the highest rates of rheumatism (calcification), arthritis (ossification), as well as osteoporosis (60% calcium deficient bones) !

B. Here is where that additional mucous, secreted in the Upper Intestines, becomes problematic. Because this was a defence mechanism, and not something that the system was designed to cope with daily, then entire tract has become coated with this mucous. Without fibrous, mucous-free meals to sweep it from the Colon, it simply builds up, layer upon layer, starting in the folds and crevices of the Colon, but eventually covering the entire length of sensitive membrane.
Now, as the water is drawn out of the Chyme, these mucoid layers begin to stiffen, becoming more viscous, more sticky and even harder to move. With this inevitably hard and thick layer between the Chyme and the receptive mucous membrane, it becomes increasingly difficult to assimilate nutrients from the system.
Moreover, this mucous was originally a response to an overgrowth in unfriendly bacteria, which give off lots of toxic compounds in place of nutrients, and unfortunately, the Colon receives those instead. The Appendix may have suppressed the bacteria somewhat, but they still exists in their millions within the mucous, and are still feeding upon the elements within it. Now stuck to the walls of the colon, it is a breeding ground for them.
The Colon was never designed to be in this situation, and thus it has never encountered it throughout the long span of evolution. Thus it has developed no means of evacuating 2½ metres of hard, sticky decomposing material, so that it may once again start assimilating nutrients.

C. Moreover, the entire intestinal tract is nothing more than a series of circular muscles that move the Chyme by sequenced contractions. Like any other muscle, if they are stretched too thin (**ballooning caused by overeating and repressed gases**), held permanently tense (with unexpressed emotional trauma), unused (predominance of fibreless foods) or twisted out of place (distension of bowel through sedentary lifestyle), they will atrophy. Moreover, especially in the case of those peristaltic muscles held in tension, they will start to hold onto the toxins within the muscle wall itself. This will create a vicious circle, whereby the muscle becomes less flexible still, and further unable to massage itself through normal rhythmic contraction and relaxation. Without this massaging effect, blood has only limited access, therefore cell wastes are not cleared away thoroughly, oxygen is not evenly distributed to them, and they literally suffocate in their own toxic wastes. These dead cell bodies cannot then escape into the bloodstream for dismemberment, and the entire muscle will eventually go into degeneration, further atrophying the entire system (not to mention its effects upon the mentality of the uptight (via nerve reflexes) and the lifestyle of the

lethargic (via energy levels)…
When one muscle is atrophied, the next has to work twice as hard, which spreads the tension and stress.
Moreover, when this happens close to a ballooning muscle ring, then the pressure alone will further bloat this area. Just as under active as a stressed muscle, the ballooning section has the added disadvantage of creating further folds and space in which to collect additional mucous.

D. Within the decomposing, hardened mucous, there lies another demon. Much bigger than the bacteria; in fact it can be much longer than the person in which it resides. Parasites, primarily worms, can range from microscopic, to ½ metre long (Some Tape Worms have been recorded as 28 feet long - the length of the intestinal tract).
If you have grown-up on a standard western diet without ever "cleaning-house", then you can guarantee that you are eating for more than just yourself. Anyone with pets, particularly dogs, will know of the advice that we should "de-worm" them regularly. But rarely is this scenario applied to humans - unless they have travelled through particularly poor areas of the world - such is our association between affluence and hygiene, but it is simply not the case.
Most of these "hitchhikers" are living not from the food you eat, but from the material that is still decomposing within the mucous lining, thus shattering the idea completely, because in poorer parts of the world, where foods are not processed so heavily, and maintain a much greater degree of fibre, the problem is actually much less prevalent.

E. Myriad fear-inviting titles have been coined for all these conditions, and for the further degenerations of the greater system, which occur if no improvements are made. It is neither beneficial to the situation or educational to the individual (in the true sense of the word) to go into further details of what follows, besides it is an arena filled with even greater controversies than those described above.

The Psychology of Battle

There is often a great psychological response to the subject of bacteria, and infection. Most people greet the subject with emotionally charged visions of being eaten alive from the inside. But there is enough ambiguity in facts on this subject to suggest an entirely new approach, and provoke and much more agreeable and healthy emotional response.

With any invader to the body, there is a defence against them, this is true. But modern science has chosen to use the terminology of war to describe what may be an entirely symbiotic relationship.

It is known that many of the toxins stored within the body are lumped together in sticky masses (not only within the bowel, but also within the sinuses, lungs, muscles, liver, etc.), and the breakdown of these sticky masses for elimination from the system is best done, not by the body itself, but by external bacteria. Whether they are "brought-in for the job", or whether they are opportunists seeking an easy ride, is immaterial here. The point is that they exist, they do perform this function, and the body (when in balance) does have dominion over their activities.

What is of major importance is the mental attitude evoked by the two approaches.

In response to the battleground scenario, with wars of defence being always waged against our terrifying attackers, there is much fear and stress, which are certified immune-repressing emotions, and definitely lead to a faith in medicine that undermines the individual's self-confidence and the

body's integrity.
However, if the same scene can be viewed as a calming exchange of symbiotic needs, where unassimilable lumps of waste are broken down into manageable parts by an outside entity, thereby obtaining its food, then an altogether more healthy and healing tranquillity ensues.
This in turn elucidates the wonder of life's dynamic balances, and erodes the belittling concept that the body ends, and the world begins (very Buddhist), and all outside of us is to be feared !!!

Certainly there is no benefit in further stressing the immune system,
or distressing the intestines by encouraging the fears of the mind.