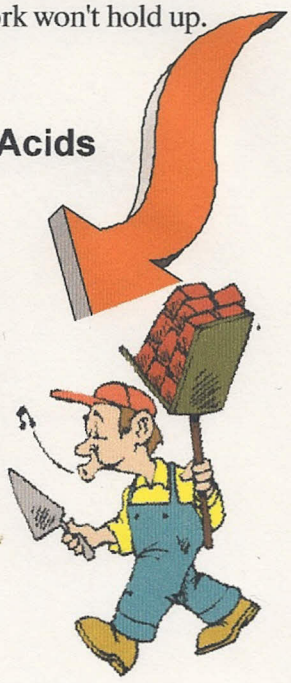
Proteins & Amino acids...the building blocks of life.

Proteins are chains of amino acids linked together. They are the basic constituents of all living cells. Your digestive system disassembles your dietary protein then reassembles it into 24 different amino acids to build the more than 50,000 unique proteins it needs. Your body is in a constant state of construction. These construction workers might be the best bricklayers in town, yet if you provide them with inferior or incomplete materials, (food), their work won't hold up.

Essential Amino Acids

Nonessential Amino Acids



The blueprints for your metabolism require a total of 24 different types of amino acids, which are analogous to bricks. It is *essential* for the owner of this body to consume COMPLETE proteins in order to first assemble the 11 *essential* bricks in the gut. From here, the liver uses these 11 bricks in different combinations to create the 13 nonessential bricks. Provided the owner of this body initially consumed complete proteins, it is therefore *nonessential* for him or her to be concerned with obtaining these particular bricks.

The liver will synthesize these automatically.

It all depends upon what you eat!

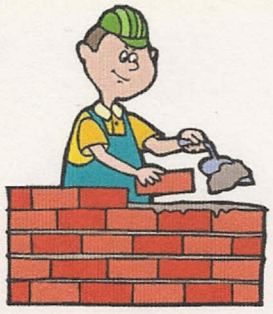
Let's see how this might play out in your body.

This guy just came from the gut. He was told there should be 11 bricks. He could only find 6. The boss asked him what he saw in the gut. He said he saw fruit loops, a jelly donut, orange juice, hot dogs, chips, pizza and soda. "That explains the missing bricks", said the boss. "We have no choice. Deliver what you have to the bricklayers".

This guy just came from the liver where he was told to expect 13 bricks. His job was easier as the guys in the liver had already made whatever bricks they could from the gut materials. He knows it's futile to count for 13 because there's nothing he can do anyway - so he whistles his way back knowing it'll be the bricklayer's problem!

So now the "bricklayers" must try to make a silk purse from a sow's ear!
But just what is it that these guys are expected to build with these bricks called amino acids?

Every second, your bone marrow makes 2.5 million red cells. Every 4 days, most of the lining of your GI tract & blood platelets are replaced. Every 10 days, most of your white blood cells are replaced. Every 24 days, you have the equivalent of new skin. All this continuous repair work requires the bricks called amino acids.



Unlike plant derived proteins, animal derived proteins are considered "complete" because they contain all the essential and nonessential amino acids. The removal of even one essential amino acid from the diet leads rather rapidly to a lower level of protein synthesis in the body, which sooner or later, will lead to some type of physical disorder, and eventually death. Furthermore, poor quality meats have higher concentrations of less essential and sometimes toxic amino acids.

Your bricklayers are busy building cells as you read this. Some might have an easier task and hence, can make do with what you provide. Others require every amino acid or risk failure. Failures can be "propped up" by drugs, as is analogous to the worker on the right. Had the proper food been consumed, these drugs could have been avoided.

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Fatty Acids 101... the Good, the Bad...and the *Bubbly*?

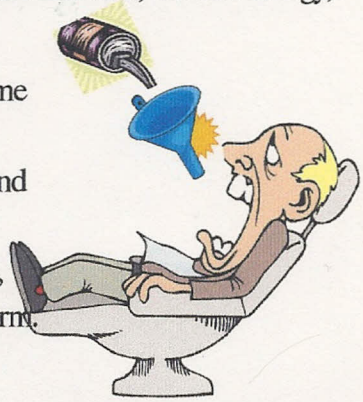
Different fats, (including oils and also called lipids), exist in most of the things we eat. These fats may have been added to our food as a component of a recipe and/or due to the manner in which our food was processed. In the case of meat & eggs, the type of fat is dependant on the diet of the animal and the manner in which it was prepared. Of all the elements in our diet, the type of fat that we consume has the greatest effect on our overall well-being. Volumes continue to be written on fats. What follows is an attempt to briefly demonstrate why this is so important.

Whatever fats you eat become your fats. Technically, the phrase "you are what you eat" is only true regarding fats. When we stuff our bellies with carbs and proteins, our gut has to extract the sugars and amino acids, then throw away the rest. Not so with fats, which leave the gut and quickly enter our bloodstream...in the same form that we ate them! Remember that greasy burger & fries you ate a few hours ago? Where'd that grease go? Wipe your forehead and look at your hand...There it is!

So wash the oil off your face and *SUPERSIZE* the next order? If only this were superficial! The problem is that your bloodstream has dispersed that oil onto all your cells. Each cell has a membrane comprised of the fatty acids that **you** provided via your diet. This membrane can be analogous to the soap film of those big bubbles that were so fun to make. Remember how you had to use

a particular kind of soap in order to get a "bubble membrane" that allowed a huge, long-lasting bubble? That bubble was successful because it's membrane was flexible. Cell membranes , again, made of fatty acids that you provided, must be flexible in order to function. Like the soap bubble membrane needing the right kind of soap to be flexible, so too is the case for your cell membranes. You must provide them with the right kind of oil. It is only in more recent times that humans have had the misfortune of ingesting *inflexible* oils. These inflexible oils are now ubiquitous in our food supply as a result of industrialized production.

There is a quirk in our design however. We recognize that the body can in fact synthesize all the fatty acids it needs except for two, yet the two fatty acids we cannot create are the flexible ones - the very fats that are essential for the proper functioning of our cells. This quirk is exasperated by the fact that these same two fatty acids are the exclusive raw materials for making *all* of the prostanoid hormones - substances that carry cellular communication for short distances from cell to cell. The only way for our bodies to obtain these most essential components is through our diet. When we fail to obtain sufficient quantities of these fatty acids, we disrupt normal cellular activity which eventually leads to disease. These two essential fatty acids are known as alpha-linolenic and linoleic acid. Alpha-linolenic acid, known as the mother of the omega-3 family of fatty acids, is especially significant. Omega 3's are comprised of the chloroplasts of green leaves or algae. These omega-3's are obtained by eating foods such as seafood, flax, or grassfed meat & eggs. It must be noted that prior to WWII, most all livestock were grassfed. Since then, livestock have been finished in feedlots or confinements, on diets that are totally devoid of grass - and hence, devoid of omega 3's. This shift away from pasture has been the harbinger of society's most pressing problems. Not only that of health, but also energy, environment, economic and cultural concerns.



We all need an OIL CHANGE! We recommend you switch from *Pens*-oil to *Mobile*-oil! (Humor me and play along!) *Pens*-oil is found in the meat of animals confined on concrete in *pens*, cages and feedlots, and is sorely lacking, if not totally devoid of omega 3's. On the other hand, *Mobile*-oil is found in the meat of animals that are *mobile* on pasture and is one of the few sources of essential omega 3 fatty acids that your cells long for. While you can't get this kind of *Mobile*-oil at the corner Jiffy Lube, you can get it for free with any purchase of pastured meat and eggs from your local pasture-based farm.

Solving the world's problems shouldn't be so easy...or so yummy!

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