

Lesson 1

Nutrition & Nutrients Defined

What is Nutrition?

Two dictionary definitions of “nutrition” are as follows:

Nutrition - the sum of processes involved in the taking in of nutrients and in their assimilation and use for proper body functioning and maintenance of health. (*Mosby's Medical and Nursing Dictionary*)

Nutrition - The science of food and its relationship to health. (*The Merck Manual, 18th Edition*)

Many famous quotes can help us further our definition of Nutrition. Consider the following:

*My soul is dark with stormy riot,
Directly traceable to diet.*

~Samuel Hoffenstein

Let food be thy medicine, thy medicine shall be thy food.

~Hippocrates

*When diet is wrong medicine is of no use.
When diet is correct medicine is of no need.*

~Ayurvedic Proverb

*The Lord hath created medicines out of the earth;
and he that is wise will not abhor them.*

~Ecclesiasticus 38:4

*Stomach: A slave that must accept everything that is
given to it, but which avenges wrongs as slyly as does
the slave.*

~Emile Souvestre



A man has often more trouble to digest food than to get it.
~Proverb

Happiness for me is largely a matter of digestion.
~Lin Yutang

Foolish the doctor who despises the knowledge acquired by the ancients.
~Hippocrates

He that takes medicine and neglects diet, wastes the skill of the physician.
~Chinese Proverb

Leave your drugs in the chemist's pot if you can heal the patient with food.
~Hippocrates

The doctor of the future will give no medication, but will interest his patients in the care of the human frame, diet and in the cause and prevention of disease.
~Thomas Edison

Is Nutrition just about what you eat?

You've probably heard the statement "you are what you eat" countless times, mostly as an incentive for weight loss.

What you might not realize is that this statement is not the whole story.

Here's a more complete statement:

"You are what you take in, what you do with what you take in, and what you don't let go of."

Its easy to picture this in terms of what you eat (what goes into your mouth), what you do with what you eat (digestion and absorption of nutrients), and what you don't get let go of (the difference between what went into your mouth and what goes into the toilet).



But we are not just eating machines. We are breathing, absorbing, sensing, emoting, thinking beings.

What we take in doesn't simply involve what goes into our mouth through eating and drinking. What we take in also includes the air we breath; what we absorb through our skin; what we receive through our senses of sight, smell, hearing, touch; even information we receive through intuition.

All those things, the tangible and the intangible, have to be dealt with somehow by our bodies. And so we digest, absorb, store and ponder everything that makes it into our space.

The obvious ways we 'let go' are through the kidney and bowel processes as well as exhaling and sweating. The less obvious ways we let go are through verbalization, body language and emotional reactions.

If I was a mathematician, I might express this concept with the following equation:

You equal 'What you take in' multiplied by 'What you do with what you take in' minus 'What you eliminate'

So what do you think Nutrition is now?

Now that we have a broader definition of Nutrition, we will pull the discussion back into a more generalized view point and concentrate for the remainder of the course on Nutrition as defined by Mosby's Medical and Nursing Dictionary:

Nutrition is the sum of processes involved in the taking in of nutrients and in their assimilation and use for proper body functioning and maintenance of health.

Proper nutrition is not just the basis for good health; it is paramount in disease prevention. A diet lacking in nutrients or consisting of an excess of certain nutrients will affect how the body functions and may lead to future health issues.



Diets lacking foods rich in calcium can cause developmental problems in children and teens leading to osteoporosis or other bone disorders later on in life. An excess of calcium can lead to painful calcium deposits, impaired kidney function and kidney stones. Countless studies show undeniable proof that diet and health are closely linked, and it just makes sense when you consider that nutrients in food and drink are composed of chemical matter that each body cell uses for growth, repair, maintenance and reproduction.

Nutrients Defined

Like the definition for nutrition, there are several ways that we can define nutrients:

- substances providing the body with the chemicals required for metabolism
- substances that provide the nourishment that is essential for growth and maintenance of life
- chemicals required by an organism to live and grow
- substances an organism must take in from its environment to be used for that organism's metabolism and to build and repair tissues, regulate body processes and convert to energy

In simple terms we can say that:

"Nutrients are the tools that the body uses for growth and repair."

Categories Of Nutrients

Nutrients can be divided into six basic categories. We will look into each of these categories in more depth in future lessons.

- Water
- Protein
- Carbohydrates
- Lipids (aka Fats)
- Vitamins
- Minerals

Humans require a steady intake from all six categories in order to survive and thrive. Different stages of life required varying amounts from each category. A deficiency in any one of these categories will adversely affect health, some more than others.



We can live a surprisingly long time without some of these nutrients. Take for example:

- the preteen child who will only eat peanut butter sandwiches and hotdogs;
- the rock star who lives mostly on cigarettes and coffee;
- the vegan who only eats salads;
- the fruitarian who only eats fruit;
- the senior who lives on toast and tea; and
- the fussy toddler who lives on crackers and bananas.

Somehow the human body makes do with the nutrients it is given and in many cases thrives at least for a time. Eventually the lack of one nutrient or more will show up as nagging health issues, chronic disease or even early death.

These extremes are not being mentioned to give you an excuse for not eating well. But merely to illustrate that it is never too late to start paying attention to one's health. There are countless examples of people turning their health around, simply by changing their diet.

The best advice to date comes from Michael Pollan, author of the Omnivore's Dilemma, and several other must read books. Mr. Pollan eloquently states:

"Eat food. Not too much. Mostly plants."

We are just beginning to realize the cost that poor eating has on our economy in terms of lost productivity, mental health issues, crowded hospitals, and learning disabilities that require extra care ... not to mention unimaginable loss of genius in the world because a child was not provided adequate nutrition to allow the brain (thinking/reasoning capability) to grow and mature.

Could it be that social issues (homelessness, depression, suicide, domestic violence, etc) are in some way directly attributable to poor nutrition? We don't know ... but just asking this question could spark a discussion that eventually changes how we market food products, especially to children.

Can we dare imagine a world where every person is fed with optimum nutrition from the day that they are born? Could proper nutrition be the factor that allows us to finally achieve the elusive 'world peace' that generation after generation has



dreamed of?

While that might sound like a grand, perhaps even achievable dream, you will discover in your studies that no one really knows what optimal nutrition is. Nor do we yet truly understand the role that environment and emotions play in our overall health.

Do you remember when eggs were the best food ever? Do you remember when eggs were the worst food ever? What about when the yolks were bad and the whites were good? Or when the whites were bad and the yolks were good.

We don't know what we don't know and despite all the research and double blind studies, we are continually disproving past 'truths' and discovering new 'truths'.

The study of nutrition requires an open mind, common sense and a willingness to constantly learn.

