# Nutrition Basics

By Tamar N. Clarke, MLS, MPA

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# Nutrition Basics Overview

- What is Nutrition
- Importance and Role of Nutrition
- Addendum Items Needed for Nutrition
- Items that are not Nutritious
- Questions

# What is Nutrition

- Nutrition is the science of how various substances play a major role in various biochemical processes in the body.
- This field is undergoing major and rapid changes in the last hundred years. It is still continuing to evolve.
- While there are major nutrients everyone needs, more and more evidence is coming out that each one of us are biochemically unique.

# Importance of and Role of Nutrition (part one of two)

- Nutrition is important to our health.
- It enables us to enjoy optimum health and feel good.
- Nutrition includes elements and substances that are needed by our cells to be healthy.
- Nutrition affects all areas of our bodies, our skin, our heart, our bones, our teeth, our eyes, our lungs, our muscles, our brains, other organs, our reproductive system, and our immune system. It plays a role in having healthy babies.

# Importance of and Role of Nutrition (part two of two)

- Nutrient levels need to be in a correct range within the body, not too little or too much.
- Nutritional needs vary at different stages of life, from in utero, infants, teens, pregnancy and to seniors.
- Disease conditions affect nutritional needs.
- Good nutrition in some cases can reverse disease.

# Seven  (Eight) Basic Nutrient Categories

- Water
- Fiber
- Vitamins
  - Regular
  - B Complex
- Minerals
  - Major
  - Electrolytes
  - Minor (Minor and Trace)
- Amino Acids
- Fats
- Carbohydrates
- Enzymes

# Nutrition Elements, part 1 - Water

- Water
  - Of all of the nutrients and items that our bodies need, water is the most important substance needed.
  - Our bodies are 70% water.
  - It needs to be clean water; not sodas, not juices, etc.
  - Water performs a number of functions in our bodies.
  - Amount of water needed is based on your weight. If you weigh 100 lbs, translate that into ounces and take half of that amount. In this case, a 100 lbs. individual needs 50 ounces of water daily, a little over six eight-ounce glasses of water.

# Nutrition Elements, part 2 - Fiber

- Fiber
  - In order for all of our digestive systems to operate more smoothly,  it needs fiber.
  - Fiber is found in our fruits, vegetables, and whole grains.
  - There are two types of fiber, soluble and insoluble. Soluble fiber dissolves in water. Insoluble fiber does not dissolve in water and provides bulk.
  - Legumes and avocados are two foods that have both types of fiber.

# Nutrition Elements, part 3 - Vitamins

- Vitamin A
- Vitamin C
- Vitamin D (D3)
- Vitamin E
- Vitamin K (K1 and K2)

# Nutrition Elements, part 3 continued

- Vitamin B Complex
  - B1 (Thiamine)
  - B2 (Riboflavin)
  - B3 (Niacin)
  - B5 (Pantothenic Acid)
  - B6 (Pyridoxine)
  - B7 (Biotin)
  - B9 (Folate)
  - B12 (Methylcobalamin)
  - B17 (Amygdalin)
  -

# Nutrition Elements, part 4 - Minerals

- Major Minerals
  - Calcium
  - Magnesium
  - Phosphorous
  - Sulfur
- Electrolyte Minerals
  - Chloride
  - Potassium
  - Sodium
- Trace Minerals
  - Iron
  - Selenium
  - Zinc
- Minor Trace Minerals
  - Chromium
  - Copper
  - Fluorine
  - Iodine
  - Manganese
  - Molybdenum
  - Nickel
  - Silicon
  - Vanadium

# Nutrition Elements, part 5 – Amino Acids

- Amino Acids
  - 9 Essential Amino Acids
  - 22 Non-Essential Amino Acids

# Nutrition Elements Part 6 - Fats

- Fats
  - Essential Fatty Acids
    - There are good and bad (trans-fat) fats.
  - Omega 3 fats
  - Omega 6 fats

# Nutrition Elements, part 7 - Carbohydrates

- Simple Carbohydrates
  - White sugar
  - White wheat flour
  - White rice
- Complex Carbohydrates
  - Beans and legumes
  - Brown rice
  - Whole wheat berries
  - Yams

# Nutrition Elements, part 8 (Optional) - Enzymes

- Another type of nutrients are enzymes
- The body produces enzymes from other nutrients
- Enzymes perform a number of functions, with digestion and with the immune system
- Enzymes are found in fresh , raw vegetables and fruits, especially sprouts

# Nutrition Elements – Independent Nutrients

- Alpha Lipoic Acid
- Beta Glucan
- Choline
- Coenzyme Q-10
- Glutathione
- Hyaluronic Acid
- Inositol
- Lutein
- PABA (Para-Aminobenzic Acid) (considered to be B vitamin)
- Others

# Addendum Items Needed for Nutrition

- Enzymes
- Phytochemicals
- Antioxidants
- Intestinal bacterial flora (probiotics)
- Carbohydrates (complex and simple)

# Foods High in Nutritional Quality

- Vegetables
- Beans and legumes
- Fruits
- Nuts
- Dairy and Eggs
- Oils (olive, coconut, etc.)
- Grains, whole grains
- Meats, Fish, Chicken

# Items that are not Nutritious

- White sugar and high fructose corn syrup
- White wheat flour
- White rice
- Preservatives and food additives (MSG)
- Artificial colors and flavors
- Soft drinks with sugar, high fructose corn syrup, or artificial sweeteners (Aspartame)

# Questions

# Addendum Topics List

- Amino Acids
- Enzymes
- Glossary
- Glyconutrients
- Hormones
- Organic vs Non-Organic
- Organic vs Non-Organic: The Dirty Dozen
- Oxygen
- Phytonutrients
- Sprouts
- Vitamin Discovery Information
- Water: Benefits of Drinking Water

# Addendum: Amino Acids

## Essential

- Histidine
- Isoleucine
- Leucine
- Lysine
- Methionine
- Phenylalanine
- Threonine
- Tryptophan
- Valine

## Non-Essential

- Arginine
- Alanine
- Asparagine
- Aspartic acid
- Cysteine
- Glutamic acid
- Glutamine
- Glycine
- Ornithine
- Proline
- Selenocysteine
- Serine
- Taurine
- Tyrosine

# Addendum: Enzymes

- Enzymes are another component of nutrition. They enable us to utilize the nutrients in the body. Enzymes are needed for eating, digesting, absorbing, seeing, hearing, smelling, breathing, kidney function, reproduction, elimination, removing toxins and the immune system.
- Enzymes are best found in uncooked foods. Cooking reduces the level of enzymes. It is best to eat salads, raw vegetables and fruits.
- One category of enzymes are the digestive enzymes.
  - Amylase - breaks down carbohydrates
  - Lipase – breaks down fats
  - Protease – breaks down protein
  - Note: Words that end in “ase” generally are enzymes.

# Addendum: Glossary (part one of two)

- Acid/Alkaline (pH)
- Amino acids
- Antioxidants
- Bioavailability
- Bioaccumulation
- Carbohydrates
- Collagen
- Detoxification
- Empty calories
- Enzymes
- Essential Fatty Acids
- Fermented Foods
- Fiber
- Flora (intestinal bacteria)
- Food chain
- Free radicals
- Genetically Modified Foods GMOs

# Addendum: Glossary (part two of two)

- Glycemic Index
- Glycemic Load
- Glyconutrients
- Heavy metals
- Hormones
- Hydration
- Maldigestion
- Malabsorption
- Microbiome
- Minerals
- Nutrient Dense
- Orchestra Theory
- Organic
- Phytochemicals
- Prebiotics
- Probiotics
- Protein
- Vitamins

# Addendum: Glyconutrients

- Glyconutrients are sugars that have therapeutic properties in the body. There are eight major glyconutrients (along with others) important to optimum health. They are:
  - Fucose
  - Glactose
  - Glucose
  - Mannose
  - N-Acetylgalactosamine
  - N-Acetylglucosamine
  - N-Acetylneuramine
  - Xylose

# Addendum: Hormones

## Major

- Thyroid (affects all areas of the body)
- Adrenals (affects our energy and immune system, continued and unrelentless stress deplete the adrenals)
- Cortisol (depleted levels of cortisol are a setup for a heart attack)
- Insulin (high levels cause quite a few symptoms)

## Minor

- Estrogen
- Progesterone (not progestin)
- Testosterone
- Pregnenolone
- DHEA (dehydroepiandrosterone)
- Melatonin
- Human growth hormone

# Addendum:
# Organic vs Non-Organic

**Plant Based Foods**

- Vegetables
- Fruits
- Grains

**Animal Based Foods**

- Chicken
- Red Meats
- Eggs

# Addendum: Organic vs Non-Organic
# The Dirty Dozen

## 12 Least Contaminated

- Onions
- Avocado
- Sweet Corn (Frozen)
- Pineapples
- Mango
- Asparagus
- Sweet Peas (Frozen)
- Kiwi Fruit
- Bananas
- Cabbage
- Broccoli
- Papaya

## 12 Most Contaminated

- Peaches
- Apples
- Sweet Bell Peppers
- Celery
- Nectarines
- Strawberries
- Cherries
- Pears
- Grapes (Imported)
- Spinach
- Lettuce
- Potatoes



Source: http://www.organic.org/articles/showarticle/article-214

# Oxygen, Importance of

- Oxygen is generally thought of as a substance that we obtain through breathing
- Oxygen is needed by every single cell in the body
- Without oxygen, we cannot live
- Since oxygen is so important to our cellular health as well as to our health, oxygen is being presented as a major nutrient
- A major concern that we all need to be aware of is the declining levels of oxygen in our atmosphere

# Addendum: Sprouts

- Taking legumes (e.g. mung beans) (except kidney beans) and grains, soaking it water 6 to 8 hours, then rinsing it twice a day, generate sprouts and increases nutritional levels.
- Sources:
  - http://en.wikipedia.org/wiki/Sprouting
  - http://sproutpeople.org/
  - http://www.sproutman.com/

# Addendum: Phytonutients

- One of the more recent discoveries in nutritional science are phytonutrients. Apparently, plants have built-in properties to protect themselves from harm, and it shows up the color of these vegetables.
- Flavonoids
- Catenoids

# Addendum: Vitamin Discovery Information

- Year of discovery, vitamin, and food source
- 1913 Vitamin A (Retinol) Cod liver oil
- 1910 Vitamin $B_1$ (Thiamine) Rice bran
- 1920 Vitamin C (Ascorbic acid) Citrus, most fresh foods
- 1920 Vitamin D (Calciferol) Cod liver oil
- 1920 Vitamin $B_2$ (Riboflavin) Meat, eggs
- 1922 Vitamin E (Tocopherol) Wheat germ oil, unrefined vegetable oils
- 1926 Vitamin $B_{12}$ (Cobalamins) eggs, liver, animal products
- 1929 Vitamin $K_1$ (Phylloquinone) Leafy green vegetables
- 1931 Vitamin $B_5$ (Pantothenic acid) Meat, whole grains, in many foods
- 1931 Vitamin $B_7$ (Biotin) Meat, dairy products, eggs
- 1934 Vitamin $B_6$ (Pyridoxine) Meat, diary products
- 1936 Vitamin $B_3$ (Niacin) Meat, eggs, grains
- 1941 Vitamin $B_9$ (Folic acid) Leafy green vegetables
- Source: http://en.wikipedia.org/wiki/Vitamin

# Addendum: Benefits of Water

Water benefits the body in a number of ways. Some of the main ones are:

- Water helps the body digest and absorb vitamins and nutrients.
- Water detoxifies the liver and kidneys.
- Water carries away waste from the body.
- Water helps the body digest food.
- Water thins the blood allowing the blood to circulate efficiently, decreasing joint pain by decreasing inflammation.
- Water improves energy.
- Water increases mental and physical performance.
- Water removes toxins (that cause cancer) from your body.
- Water keeps skin healthy and glowing.
- Water helps you lose weight.
- Water helps you keep more alkaline. (also decreasing arthritis)
- Source: Doctor's Secret Joint Pain Cure Remedy Report , www.jointpaincured.com

# Addendum: New Topics

- Microbiome
  - Our intestines and bodies are part of the microbe world
- Phytochemical
  - Substances found in vegetables and fruits that have beneficial benefits
- Prebiotics
  - Foods that promote healthy flora and facilitate the development of probiotics
- Probiotics
  - Probiotics that facilitate healthy instestinal flora

# Addendum: Recipe for a Green Berry Smoothie

- 1 cup frozen organic berries (blueberries)
- 1/2 peeled organic cucumber or 1 small very ripe banana
- 1 large handful of organic green leafy veggies (ex: parsley or spinach)
- 1 spoonful of raw honey or 10 drops liquid stevia
- pinch of celtic sea salt
- dash of vanilla extract
  3/4 cup of water or ¾ cup of coconut water
- Add all ingredients to a blender and blend
- **Compliments of Take Back Our Health Conference and www.TBYHConference.com**

# Resources:

- http://ods.od.nih.gov/factsheets/DietarySupplements-HealthProfessional/
- http://en.wikipedia.org/wiki/Vitamin
- http://kidshealth.org/teen/misc/vitamin_chart.html
- http://www.nutritionalmedicine.info
- Miracle sugars: the glyconutrient link to disease prevention and improved health (2003) by Rita Elkins, M.H. (Publisher: Woodland Publishing)

# Resources continued:

- Understanding fats and oils: your guide to healing with essential fatty acids (1996) by Michael T. Murray, ND and Jade Beutler (Publisher: Apple Publishing Company)
- Vitamins and minerals  demystified (2008) by Dr. Steve Black (Publisher:  McGraw Hill Publisher)

- Note: There are many more resources.