The Heart of Nutrition

Workshop #1
Re-defining Nutrition

vitalis
nutrition designs

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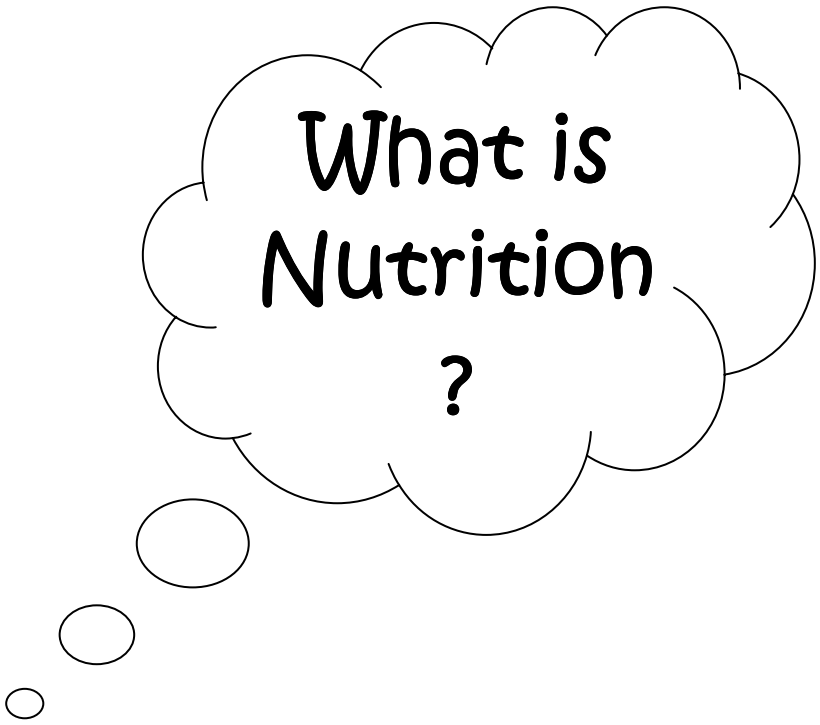


Perspectives on Nutrition

Western Science

Experimentation
Evaluation
Novel foods & synthetic food formation
Risk control and assessment
Biotechnology
Sponsored research (i.e.. Unilever sponsors fat research)
Sets standards (i.e. The Food Guide and RDAs)

Eastern Philosophies

Ayurveda
Traditional Chinese Medicine
Traditional Diets

Vitalis' Definition

Nutrition is the art of choosing food that nourishes the body. This art is flexible and follows the laws of nature. It requires a positive frame of mind and an active body. Nutrition is a dynamic and individualized equation that supports optimum health

Whole Foods VS. Refined Foods
The *quality* of food is what determines how health-promoting it is

Whole foods are foods that are closest to their natural state. Fresh, unprocessed foods such as vegetables, grains, fruit, beans, nuts and seeds are considered "whole". Animal foods can also be referred to as "whole" when the entire animal is used or when their milk etc. has not been processed

Refined foods are "partial" or fragmented foods that have been stripped of their nutrients and coarser elements (such as bran). This has been done in order to make foods more visually pleasing, convenient and to extend their shelf-life. The process of refining may involve chemicals, extreme heat, bleach and deodorants. Some of the most common refined foods are white sugar, white flour, white rice and vegetable oils

Macronutrients
Combined with micronutrients, macronutrients are the building blocks that create and sustain life. Since "macro" means large, these are the nutrients that our bodies need in the largest amounts

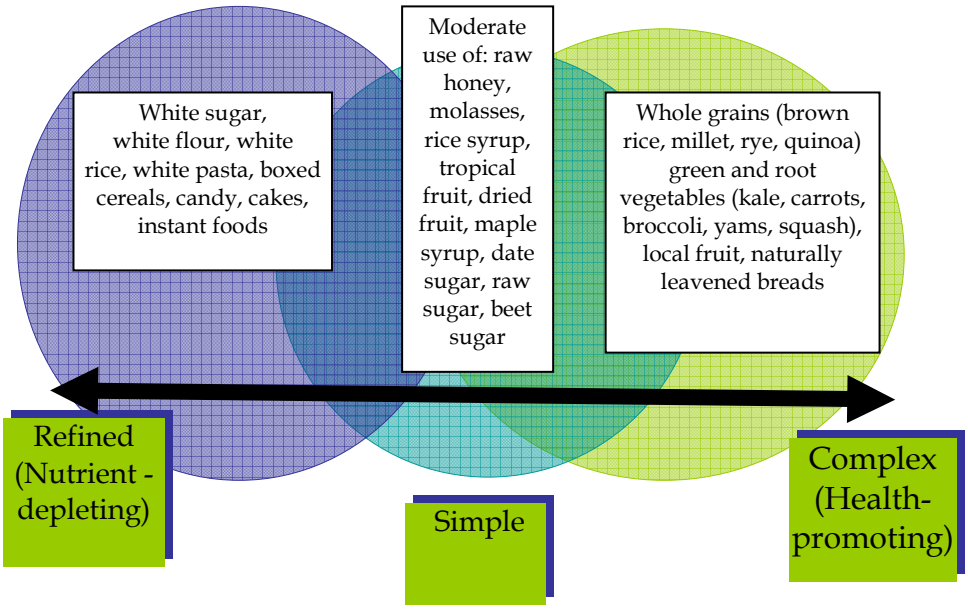
Macronutrients are **derived from food** and include:
Carbohydrates
Fat
Protein

Carbohydrates
- Carbohydrates are produced by photosynthesis of plants
- This is the main class of energy in the diet, constituting up to 50-60%
- Carbohydrates are needed to regulate protein and fat metabolism
- Carbohydrate molecules are made up of carbon, hydrogen and oxygen with a ratio or 1:2:1
- There has been a shift in this century away from fresh fruit and vegetables and complex carbohydrates towards a diet of more refined and simple sugars

Classes	Also referred to as	Examples
Sugars	Simple Carbohydrates	Fruit, sugar, glucose, honey
Starches	Complex Carbohydrates	Whole grains (brown rice, millet, rye) root vegetables, broccoli
Fiber	Cellulose	Skins of vegetables & fruit, grain coverings (bran) psyllium seed husks, ground flax

Functions of Carbohydrates:
- Energy
- Elimination
- Source of vitamins and minerals
- Regulate fat and protein metabolism

Choosing Carbohydrates



Protein

- Nearly 20% of our body weight is protein
- Protein is the primary element of our muscles (especially the heart and the brain), hair, skin, nails, and internal organs
- Like carbohydrates, protein contains carbon, hydrogen and oxygen. It also contains nitrogen
- The building blocks of proteins are called amino acids
- There are 22 naturally occurring amino acids, 8 of which are said to be essential. This means that they cannot be synthesized in the body and must be obtained from the diet

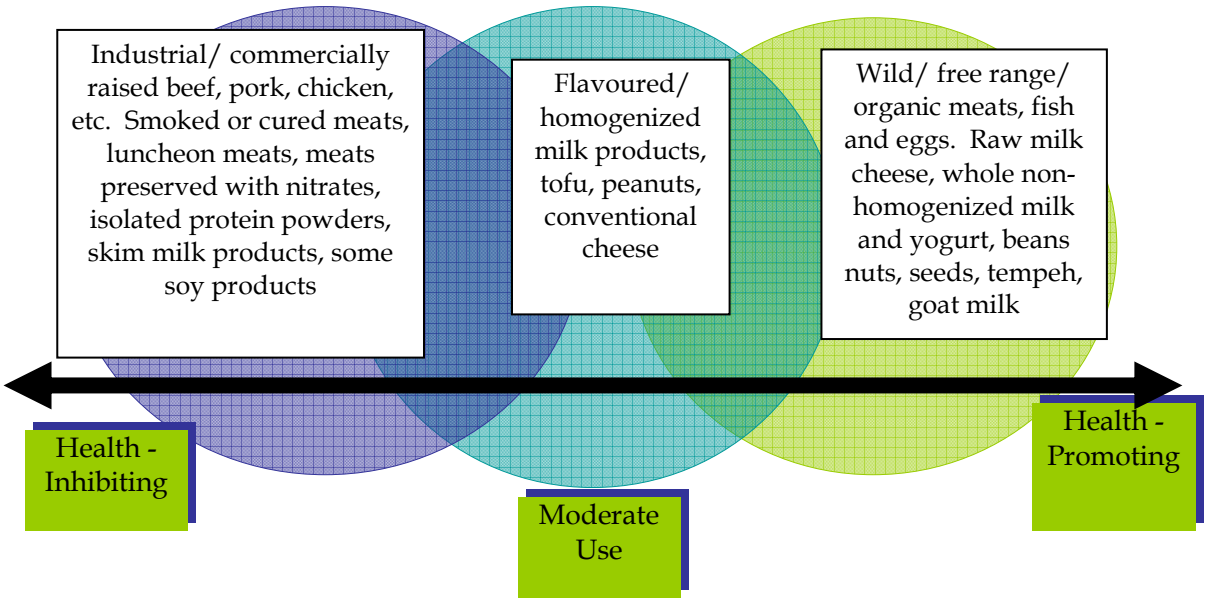
Protein	Definition	Examples
Complete	Contain all 8 essential amino acids	Most animal products, meat, eggs, dairy
Incomplete	Are low in, or missing some of the essential amino acids	Corn, rice, beans, nuts & seeds

Protein Complimenting
Each food has a different amino acid sequence. The body requires all amino acids to function in good health. Vegetarians or those who follow diets that limit certain foods are wise to be knowledgeable about combining foods in order to achieve a full range of amino acids

Here's how:
Eat complete protein combinations: Grains with legumes, brown rice with sunflower seeds, corn and beans
Consume a variety of different proteins in a 24-hour period: The body creates a 'storage pool' from which it can take amino acids to build proteins

Functions of Protein:
Building blocks for growth
Body maintenance
Hormone regulation (thyroid and insulin)
Immune System (formation of antibodies)
Hormones
Enzymes

Choosing Protein



Lipids: Fats & Oils

- Fats (lipids) are found in meat and dairy products. There are also many rich vegetable sources of dietary fat
- The chemical makeup includes carbon, hydrogen and oxygen, and in some cases, nitrogen and phosphorus
- The most distinguished component of a lipid is the fatty acid. Three fatty acids plus a glycerol molecule form what is called a triglyceride

FAT	**Saturated**	**Unsaturated**	
		Monounsaturated	Polyunsaturated (EFAs)
Temperature Characteristics	Solid at room temp	Liquid at room temp May start to solidify in Fridge	Liquid at room temp Liquid in fridge May start to solidify in freezer
Examples	Butter, coconut oil & lard	Olive oil & sesame oil	Flax oil, pumpkin seed & fish oil
Level of Stability	Highest level of stability	Moderate	Fragile-Highest risk for rancidity
Suitability for Cooking	Ok to cook with Can tolerate higher heat	Occasional use in cooking. Be sure to use medium to low temp.	Never use for cooking

Functions of Fat:
Energy reserves
Insulation
Transport of and source of fat- soluble vitamins (A, D, E, K)
Protection for Organs
Building blocks for cell membranes
Filling and Satiating

Essential Fatty Acids
Essential Fatty Acids (EFAs) must be obtained from the diet
EFAs are necessary for metabolism and favourably affect inflammation, heart disease, skin conditions, immune health, and hormone balance

O-3	**O-6**
Cold water fish (salmon, mackerel, trout, cod liver oil)	Safflower Sunflower
Flax	Primrose
Pumpkin seeds	Borage
Walnuts	

Trans-fats

- Trans-fats are created through a chemical process that makes liquid oils more solid and "stable."
- Consumed in high amounts in Western culture
- The digestive system cannot recognize them and instead of eliminating them, incorporates them into the cell membrane.

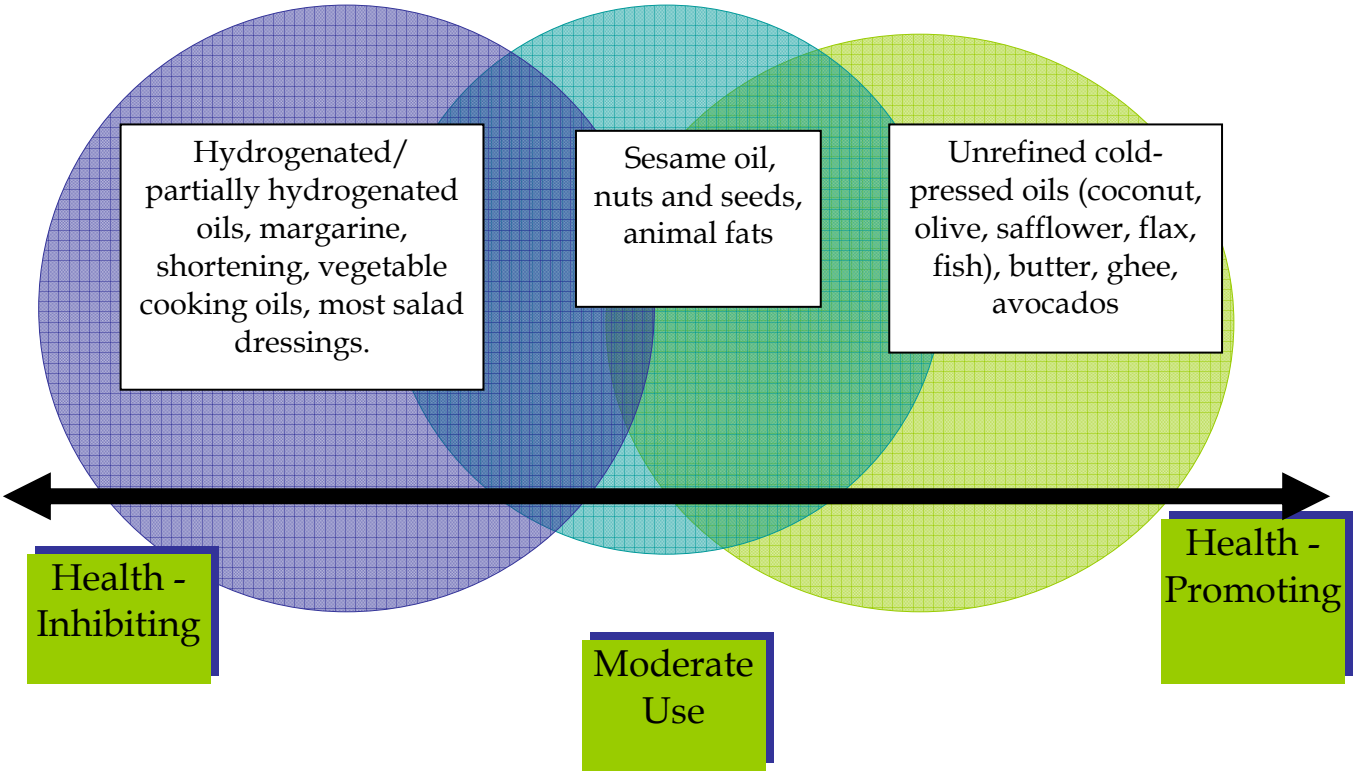
Impairs cell metabolism and has many negative implications:

Increased blood cholesterol
Impaired immune function
Cancer
Diabetes
Atherosclerosis
Obesity
Sexual dysfunction

Refined Fats vs. Unrefined Fats

Refined fats and oils have gone through a process of extreme heat, chemical solvents, bleaching and deodorizing.
Unrefined fats and oils have been through minimal processing and may considered "whole"

Choosing Fats and Oils



Shopping List Activity

Consider the following as your regular shopping list. Using the information from the macronutrient handouts and continuums, rewrite the list to reflect what you have learned. Some of the items may remain the same and others may just need to be qualified (hint: words like unrefined or whole grain…)

Bread	
Milk	
Margarine	
Cheese slices	
Kiwis	
Spaghetti sauce	
Honey Nut cornflakes	
White rice	
Apples	
Flavoured yogurt	
Canned peaches	
Granola bars	
Ground Beef	
Pasta	
Salad dressing	
Salmon	
Coffee	
Mr. Noodle	
Canned beans	
Cookies	
Pop	
Chips	
White sugar	
Pancake mix	

Micronutrients

Animals and plants need micronutrients (nutrients in small amounts) in order to grow, thrive and stay healthy. While neither vitamins nor minerals *contain* energy themselves, they do play a key role in vitality

Micronutrients include:
Vitamins such as A, B, C, D, E and K
Minerals such as oxygen, carbon, hydrogen, nitrogen, calcium, phosphorus, iron, zinc, selenium, iodine and chromium. (103 in total)

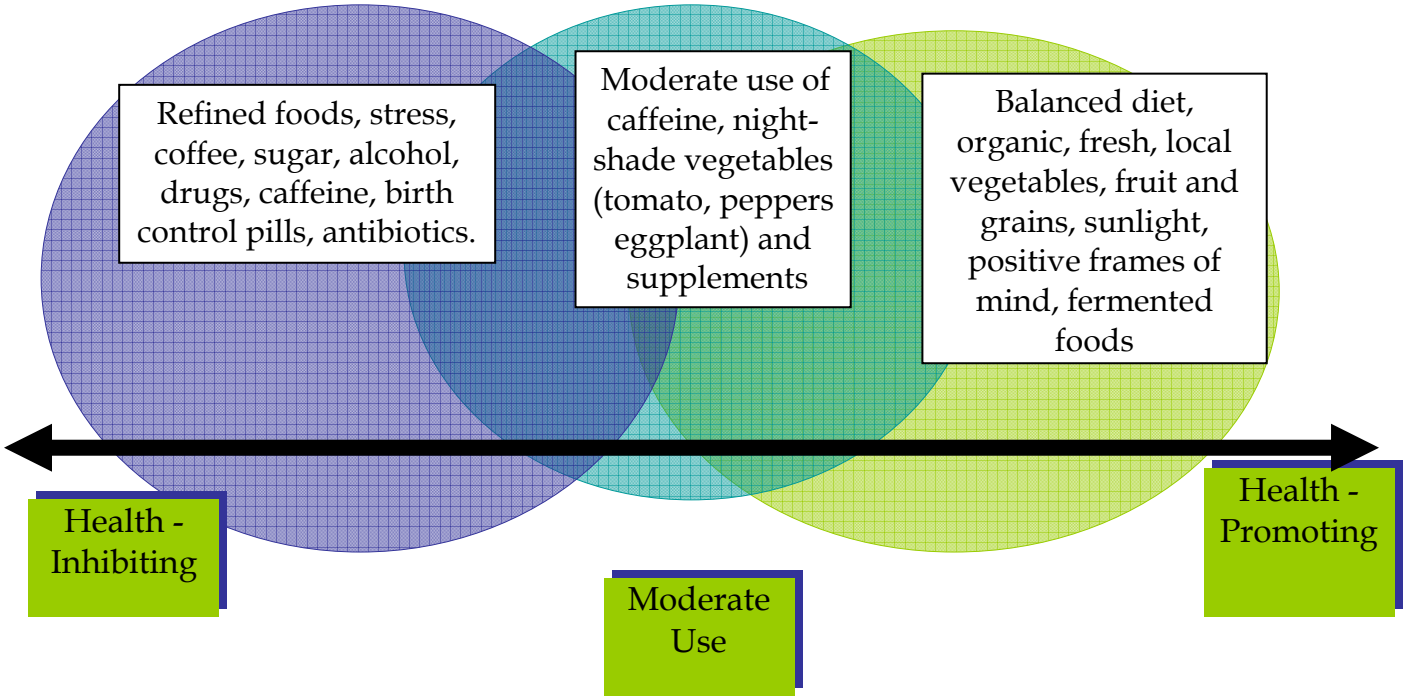
Vitamins
- Vitamins are found in plant and animal substances and are transferred to humans through water, food or supplements. An exception to this is some of the B vitamins
- Vitamins are classified by letter and by the medium in which they are carried, either water-soluble (B &C) or fat-soluble (A&D)
- Vitamins were primarily discovered through diseases caused by their absence or deficiency in the diet (i.e. scurvy)
- The Canadian government has set Recommend Daily Allowances (RDAs) to ensure minimum intake for nearly 40 essential nutrients

Characteristics of Vitamins
Help convert macronutrients to metabolically useful forms.
Function principally as co-enzymes (enzymes are catalysts, they speed up reactions).
Essential for growth, vitality, digestion, elimination, and disease -resistance
Depletion, deficiency, or excess of vitamins can lead to a variety of nutritional disorders

Minerals
- Minerals are the basic components of all matter.
- They are inorganic elements
- Animals and plants derive minerals through water and food. 4-5% of our body is weight in mineral matter, most of which is in our skeleton

Characteristics of Minerals
Assist the body in energy production
Cannot be synthesized by the body
The body fine-tunes the levels of most minerals to maintain optimum functioning
Minerals are harder to absorb than vitamins and often compete with each other in the body
Depletion, deficiency, or excess of minerals can lead to a variety of nutritional disorders

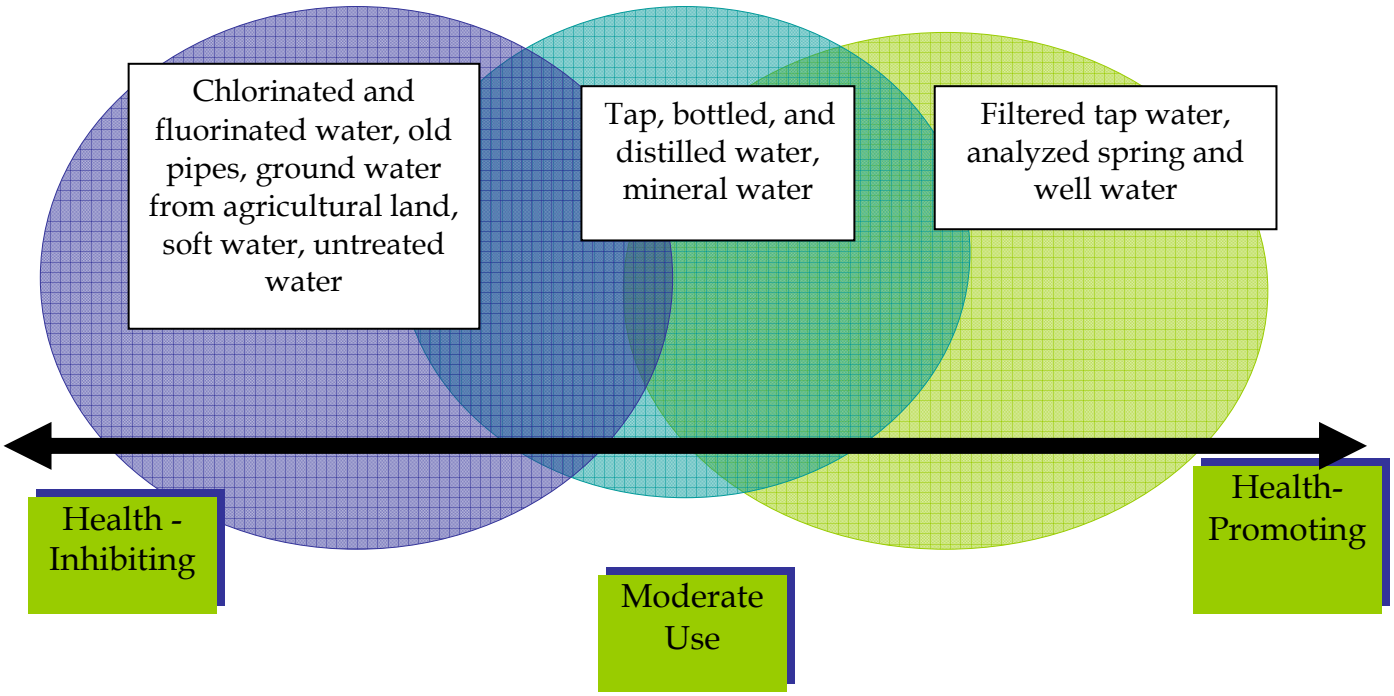
Ultimate Vitamin and Mineral Absorption



Water

- Water is the medium in which all other nutrients are found. It is fundamental to all life and makes up at least 60% of our bodies. Without clean water we cannot experience optimum health
- Water is best consumed at several intervals throughout the day. It should be minimized at mealtimes as it can dilute digestive juices, reducing food digestion and nutrient assimilation

Choosing Water



The Digestive System

Mouth
- Digestion begins with chewing
- Food is broken down mechanically and chemically
- Mouth secretes saliva which contains the enzyme amylase
- Important site for carbohydrate digestion

Esophagus & Stomach
- Chewed food (bolus) moves smoothly through the esophagus and enters the stomach
- The stomach is the site of (partial) protein digestion through the action of pepsin and hydrochloric acid (HCl)
- Acidic environment needed to break bonds of amino acids
- HCl is also responsible for keeping the intestinal tract free from bacterial growth

Small Intestine
- Receives food from stomach, whereby enzymes from the pancreas act on particles
- Digestion of starch, proteins and fat is completed
- Major site of absorption

Large Intestine
- Site of water absorption, electrolyte balancing as well as the production of Vitamin K, short chain fatty acids and biotin
- Bacteria break down what remains of the food
- These actions, combined with indigestible fiber, create a solid mass (feces), which is then eliminated
- Ideal transit time is 12- 18 hours. Average transit time is 8-24 hours

Pancreas
- Secretes three types of enzymes (amylase, protease, lipase), which in turn handle the completion of digesting starch, protein and fat

Liver
- Carbohydrate metabolism
- Bile production
- Detoxification

Gall bladder
- Secretes and stores bile for digestion of fat

Compromised Digestion
- When digestive organs are stressed, undo strain is put onto other organs in order to compensate.
- This may cause a host of difficulties throughout the digestive tract.

Vitalis Tool Kit

Eat in a relaxed environment- Create a space that is calm, warm and comfortable. Digestion is more efficient when your body is prepared through smelling, talking about the meal and taking time to eat it. These activities fuel the digestive fire.

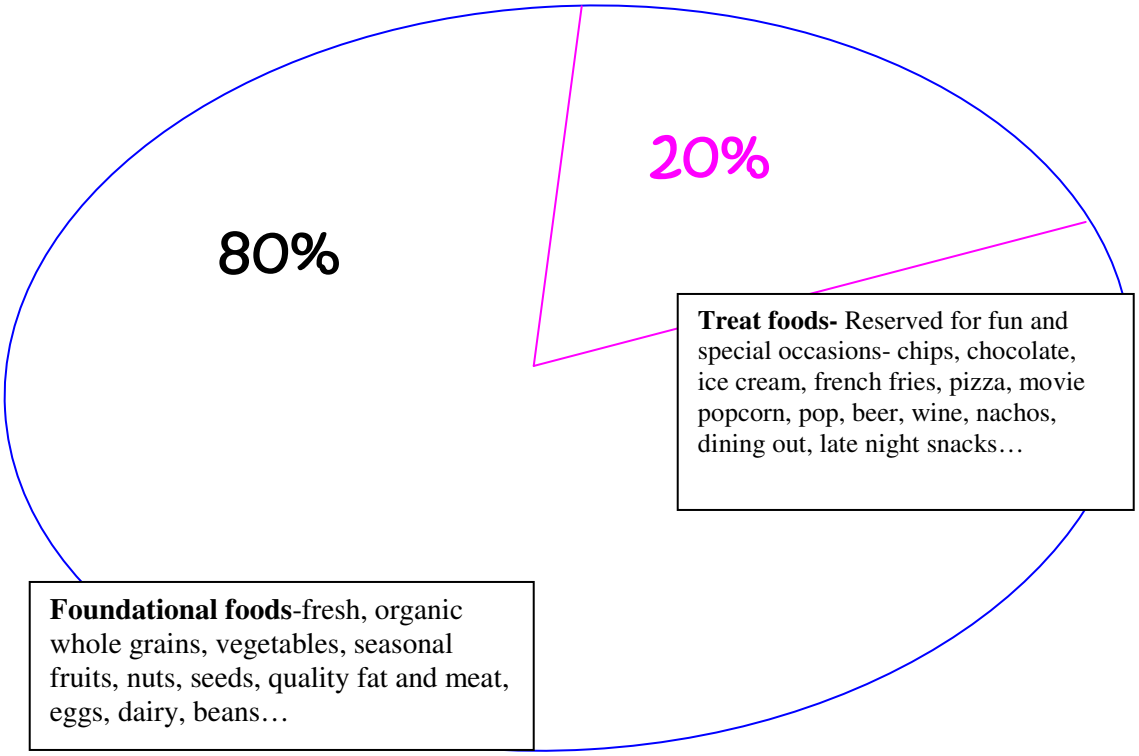
Read ingredients and ask what in your food- Food products can have additives and chemicals that can impair digestion and affect your health (MSG, sulfites etc). Know what is in your food, and if you are not sure ASK! Try as much as possible to eat whole foods (real, seasonal & fresh).

Chew- Chewing is a neglected but essential part of efficient digestion. Food needs to be chewed thoroughly so other organs do not become over stressed and may perform their many other assimilation tasks.

Food combining- The combination of certain foods stresses the digestion more than others. A simple rule is to avoid eating sugar with or immediately after a meal. Especially a protein meal.

Transition from:	Transition to:
Standard North American Diet	**Wholesome Living Diet**
Refined (oil, grains, sugar)	Unrefined, natural, whole state
Nutrient poor	Nutrient dense
Chemically treated food	Organic fruits and vegetables
Imitation food (margarine)	Real food (butter)
Added preservatives, color	Packaged by nature with no additives
Convenience foods accompanied by fast paced lifestyle	Home-made nutritious foods eaten with family and friends
Over indulgence	Moderation, balance, ease and enjoyment

The 80/20 Rule



Nutrient- Depleting	**Foods for Moderation**	**Health- Promoting**
Refined sugar	Unpasteurized honey, maple syrup, raw sugar, brown rice syrup, date sugar, agave	Small amounts of raw honey, organic blackstrap molasses
Refined oil	Olive oil	Unrefined & cold pressed oils
Margarine & shortening	Butter	Organic butter, ghee, organic coconut oil
Refined grains	Whole grains	Organic whole grains
Processed foods	Naturally prepared foods	Whole homemade foods
Additives & preservatives	Natural ingredients	Whole homemade foods
Soda/ commercial juice	Naturally sweetened fruit juice	Water
Convenience foods	Natural ingredients	Whole homemade snacks
Refined table salt	Sea salt	Organic unrefined gray sea salt

Some foods have the ability to aid digestion. These are some examples:

Sauerkraut- Organic & unpastuerized (stored in the fridge) - Enzyme-rich condiment traditionally eaten with meat.

Miso- Fermented soybean paste full of enzymes. Traditionally eaten before a meal to stimulate digestion.

Lemon- Stimulates the liver (the powerhouse of the body). Also aids in fat digestion. Consume before a meal in half a glass of room temperature water to kick start digestion.

Ginger- Added to meals or consumed in a tea as a digestive stimulant. Works well in aiding protein digestion.

Peppermint- Eases tension and anxiety and promotes smooth digestion.

Fennel- A digestive aid particularly useful for gas and bloating.

Turmeric- A spice that is beneficial as an anti-inflammatory and useful in the digestion of protein.

SMART Goals

Goal:_____
_____
_____

S= Specific
Define exactly what you want to accomplish in detail. Use positive language (i.e. create, design, deliver, finalize, improve).

M= Measurable
Decide how you will measure your progress and how you will know you've achieved your goal (use numbers, money, percentages).

A= Accountable
Make a full commitment to be personally responsible for achieving your goal. Identify a trusted person who will hold you accountable (friend, partner, classmate, colleague).

R= Realistic & Relevant
Set goals that are realistic and achievable. Check that your goals are relevant to your values and your vision of what you want to create.

T= Timeline
Create a specific completion date and increments along the way. It can feel overwhelming if the time frame is too close, and if its too far away it can lack juice and aliveness.

Disclaimer: The information provided in this workshop and in the handouts received during this workshop is intended for educational purposes only. It is not medical advice, nor is it a form of diagnosis or treatment for disease, or any licensed or controlled act, which may constitute as the practice of medicine. The educational services of this workshop were provided Vitalis Nutrition Design consultants on the topic of general health and well- being.

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