BNHC E-MAGAZINE

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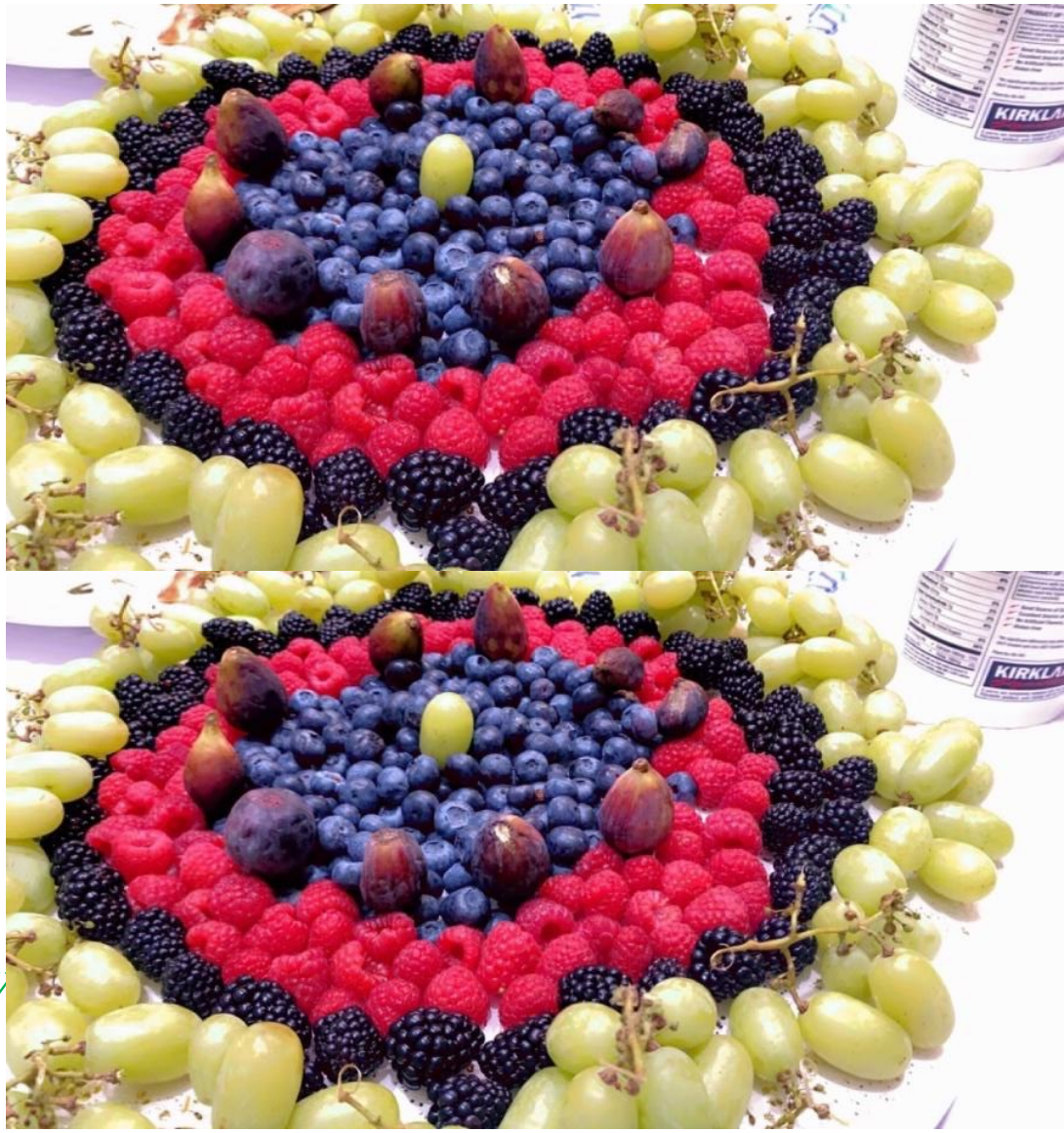

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Message: from the President of BioNatural Healing College (BNHC)

Greetings!

First and foremost, I am extremely thankful to Almighty God for granting me this opportunity to present the BioNatural Healing College (BNHC), BNHC E-Magazine to our dear readers. Also, I would like to thank you all, especially the dear readers who send us their valuable feedback and support. The information in this magazine is solely for educational purposes.

We hope this BNHC- E-Magazine will be useful to you based on the contribution and dedication of many other respected researchers and colleagues around the globe. Thanking and wish you all the best health and prosperous life.

Best regards,

Dr. Nadir Sidiqi Ph.D.

BioNatural Healing College

BioNatural Healing College Hope you and your loved ones are staying healthy and safe during this pandemic (COVID-19). What we need to do especially during this uncertain time as follows:

1. Vaccination, Sanitation, and Isolation from Social Interaction.

2. Positive Attitude will Increase the Power of Mind and Immune System.

3. Healthy Diet and Drink Plenty of Water (Honey with green tea, vitamin D_3, vitamin C), and Get Enough Sleep.

4. Exercise (any type of physical activity for 30 minutes daily).

5. A Lot of Prayer to Almighty God (be patient, calm).

May Almighty God bless, guide us all (Humanity) and grant us the ability to find a cure for the elimination of COVID-19.

Understanding BioNatural Nutritional: Link to Health and Wellbeing

By: Dr. Nadir Sidiqi Ph.D.

Introduction

The chemical composition of human beings is almost like the composition of molecules that exist BioNatural environment. Major elements of life are oxygen (O), Carbon (C), Hydrogen (H), and Nitrogen (N) which are the primary elemental ingredients for life. For instance, air, water, and soil are the essential elemental and nutritional sources that the human body depends on, and is oxygen derived from the air and water, and carbon comes from plant foods or meat. Calcium, magnesium, zinc, and sulfur come from the soil which ultimately is absorbed into plant and animal foods that humans consume for survival. The human body cannot make any elements or minerals; therefore, it must obtain those from food sources or natural supplements[1].

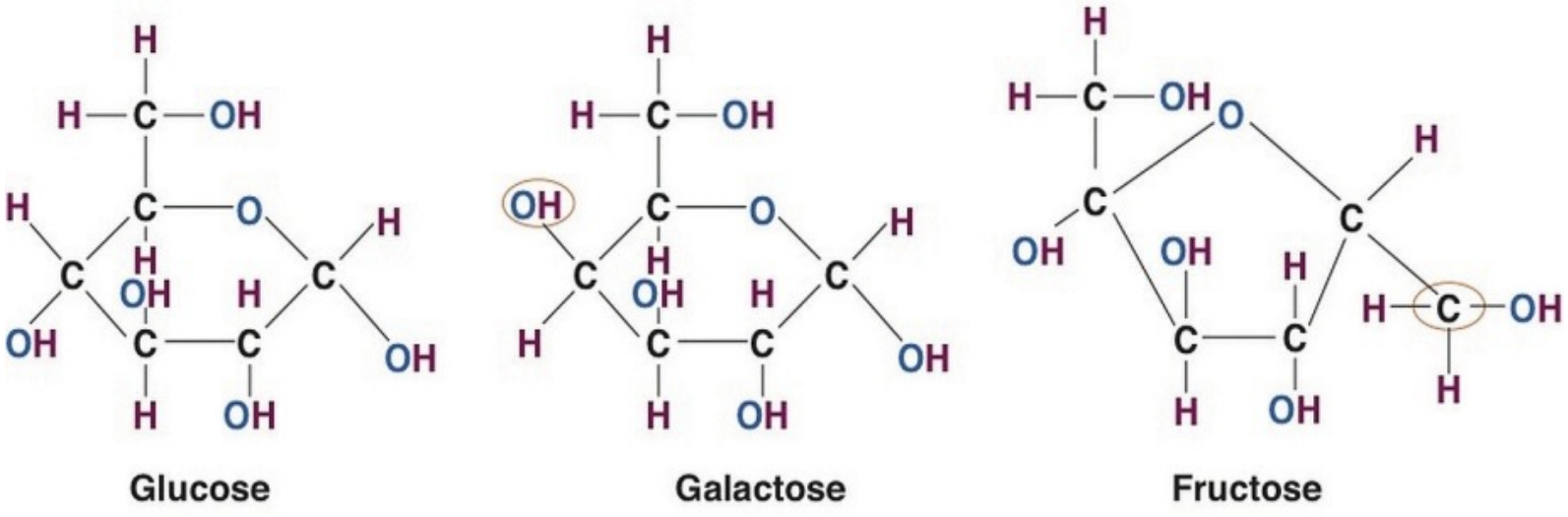
Nutrients present in food are used as a BioNatural healing treasure that has been used in the past many human generations and still current human generations continue to be used also to find a cure in the prevention of many diseases. Based on the core views of biology, chemistry, mathematics, and physics, math can be used as a scientific tool to solve biological, chemical, and physical science problems. To maintain good public and environmental health one must use the combination of three sciences such as biology, chemistry, and physics as well as other related sciences, especially from the BioNatural healing viewpoint to a cellular point of view in the preservation of good health.

However, western diets analyze food and nutrition based on only chemistry, which plays an important role, but if it is selected apart from biology and physics sciences, it would be partial and incomplete. According to recent studies, diet-related diseases are some of the leading causes of death and disability in the U.S., including 19 states and two territories with an obesity prevalence at or above 35% more than double the number of states in 2018[2]. And, more than 4 in 10 Americans have hypertension (high blood pressure)[3], which is linked to the leading causes of death for Americans: heart disease and stroke[4] (White House National Strategy On Hunger, Nutrition, And Health September 2022). However, one of the important issues to understand is why nutrition is required for human health, describing their functions at the cellular and molecular level will lead to a subsequent discovery or enable an understanding of the physiological mechanisms of various nutrition-related processes. Thus, each viewpoint provides information, and connectivity to each other on how or why biological living systems function: At the cellular level, at the tissue level, at the organ level, at the organ system level, and as the whole organism that possesses the characteristics of living organisms with the abilities to consume food and process energy, responds to environmental changes and reproduce offspring. As such, living organisms can be divided into two main groups: humans and other animals in the Animal kingdom and plants in the Plant kingdom. Therefore, living systems can be addressed from various points of view such as the planet Earth down to the minute particle of atoms and quarks. **Quark, atoms, molecules, ions, and bonds:** The basic constituents of atoms are protons, neutrons, and electrons, however, even protons, and neutrons are made up of more elementary and very tiny particles, even more than atoms called quarks.

An atom consists of a nucleus that contains positively charged (Protons), as well as neutrally charged (Neutrons) inside the nucleus, and negatively charged (Electrons) that are arranged outside the nucleus. When a person eats food, the body revamps the atom's chemical bonds together to form molecules (e.g., $C_6H_{12}O_6$) that body needs to survive. Molecules are made up of one or more atoms held together by chemical bonds. To form new molecules, molecules must either share their electron or give some away[5]. Indeed, the human body uses these molecule bonds for energy, growth, defense systems, and other necessary repair molecules in the body. However, in 2011, 165 million children under the age of 5 years old were stunted and 52 million had acute malnutrition, while 43 million were overweight or obese. Among adults, 500 million women were anemia, and 500 million people were obese. Childhood malnutrition is the underlying cause of more than one in three deaths among children under the age of 5 years old, and negatively affects cognitive development, school performance, and productivity according to World Health Organization "Global Nutrition Policy Review: What does it take to scale up nutrition action? (2013)". In addition, about 200 million children are unable to attain their full development potential because of stunting and micronutrient deficiency[6]. We must consider the relationship between nutritional biochemistry and physiology which displays that human life depends on major food groups:

Carbohydrates: These are a major energy source to the body and can be divided into three main groups: 1. Monosaccharide 2. Disaccharides 3. Polysaccharides. There are six naturally occurring carbohydrates of interest in foods:

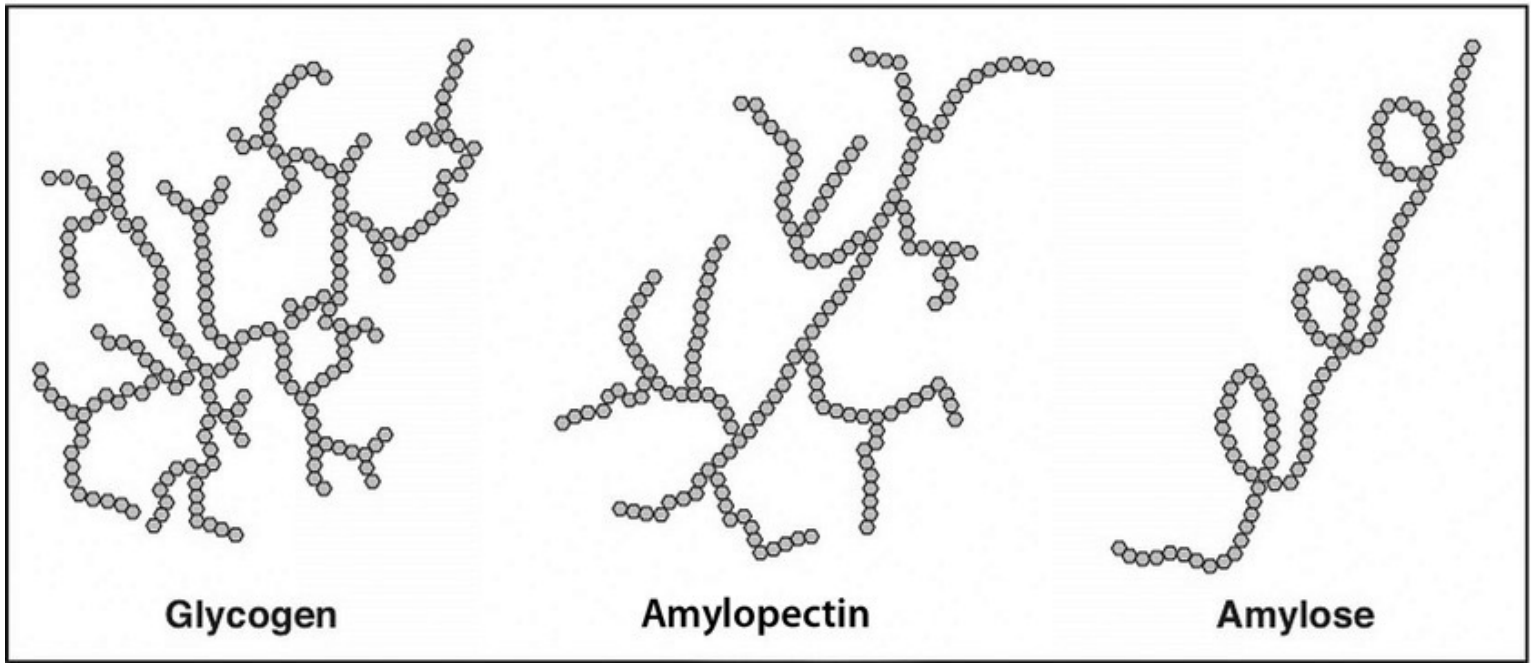
1. **Monosaccharides:** These are the simplest forms of carbohydrates. They are composed of one sugar molecule and cannot be hydrolyzed further, for instance, glucose, and fructose.



Structures of the Three Most Common Monosaccharides: Glucose, Galactose, and Fructose. Red circles indicate the structural differences between the three. Source: http://chemwiki.ucdavis.edu/

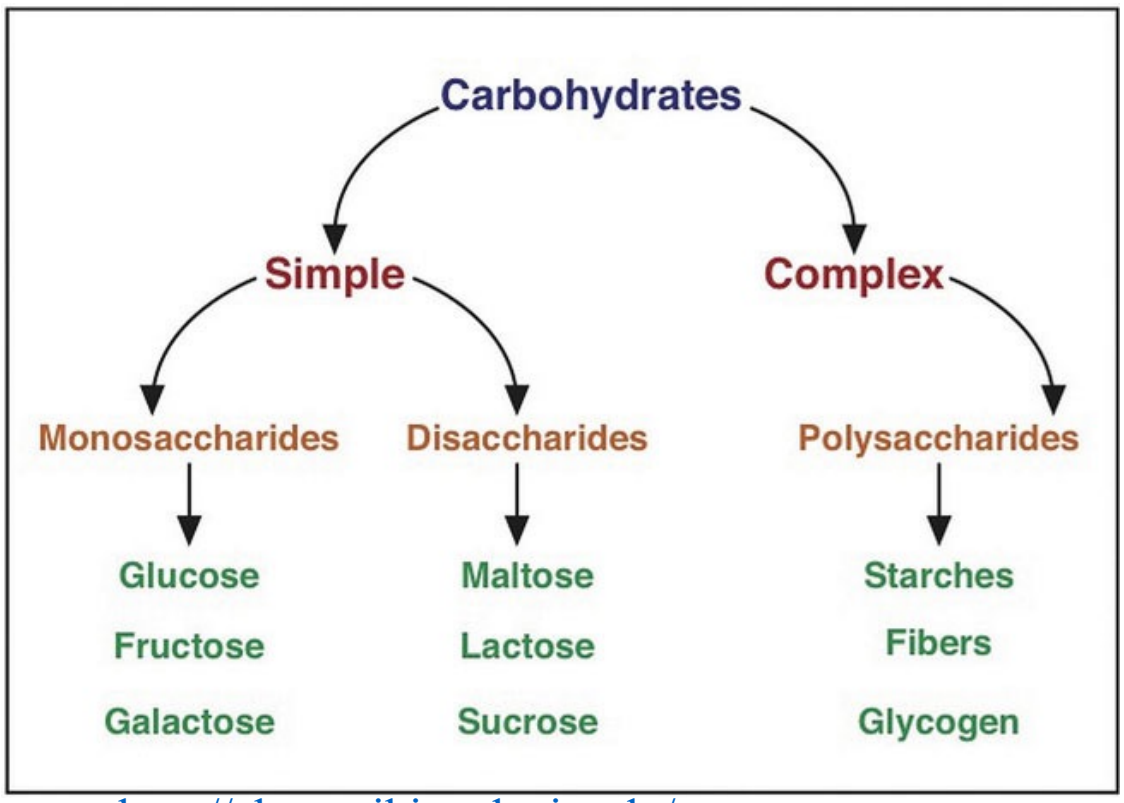
2. **Disaccharides:** Are composed of two molecules and the major disaccharides are sucrose (white sugar: composed of one molecule of glucose and one molecule of fructose), maltose (composed of two molecules of glucose), lactose (composed of one molecule of glucose and one molecule of galactose).

3. **Polysaccharides:** These are multiple monosaccharides joined together by chemical bonds and are also known as complex carbohydrates such as starch and glycogen. Most polysaccharides are plant-based for instance, pectin found in soft fruits and plant cell walls (cellulose) is a mixture of polysaccharides[7,8].



Structures of the Plant Starches and Glycogen: Humans and animals store glucose energy from starches in the form of the very large molecule, glycogen. It has many branches that allow it to break down quickly when energy is needed by cells in the body. It is predominantly found in the liver and muscle tissue in animals.

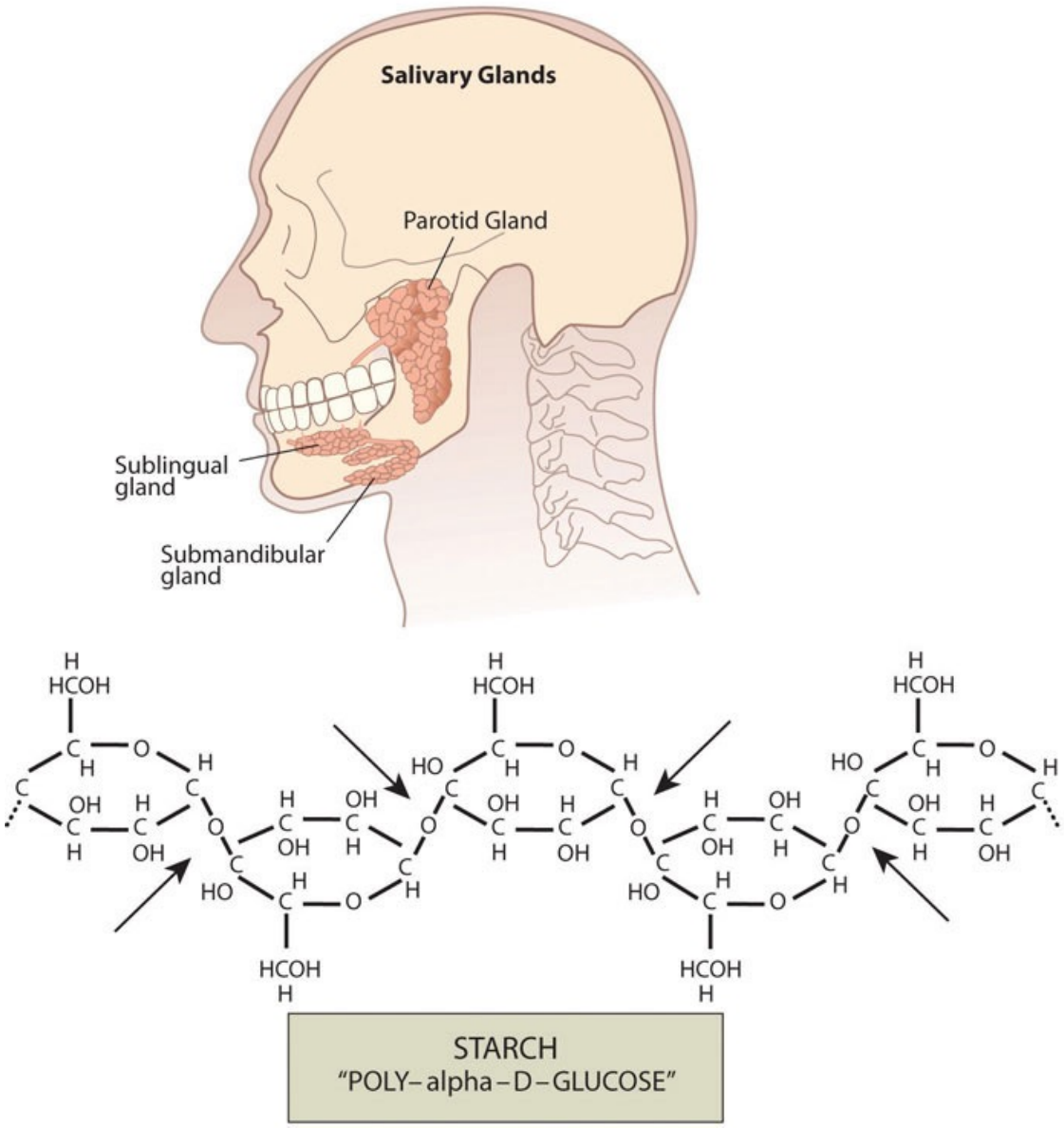
Source: http://chemwiki.ucdavis.edu/



Source: http://chemwiki.ucdavis.edu/

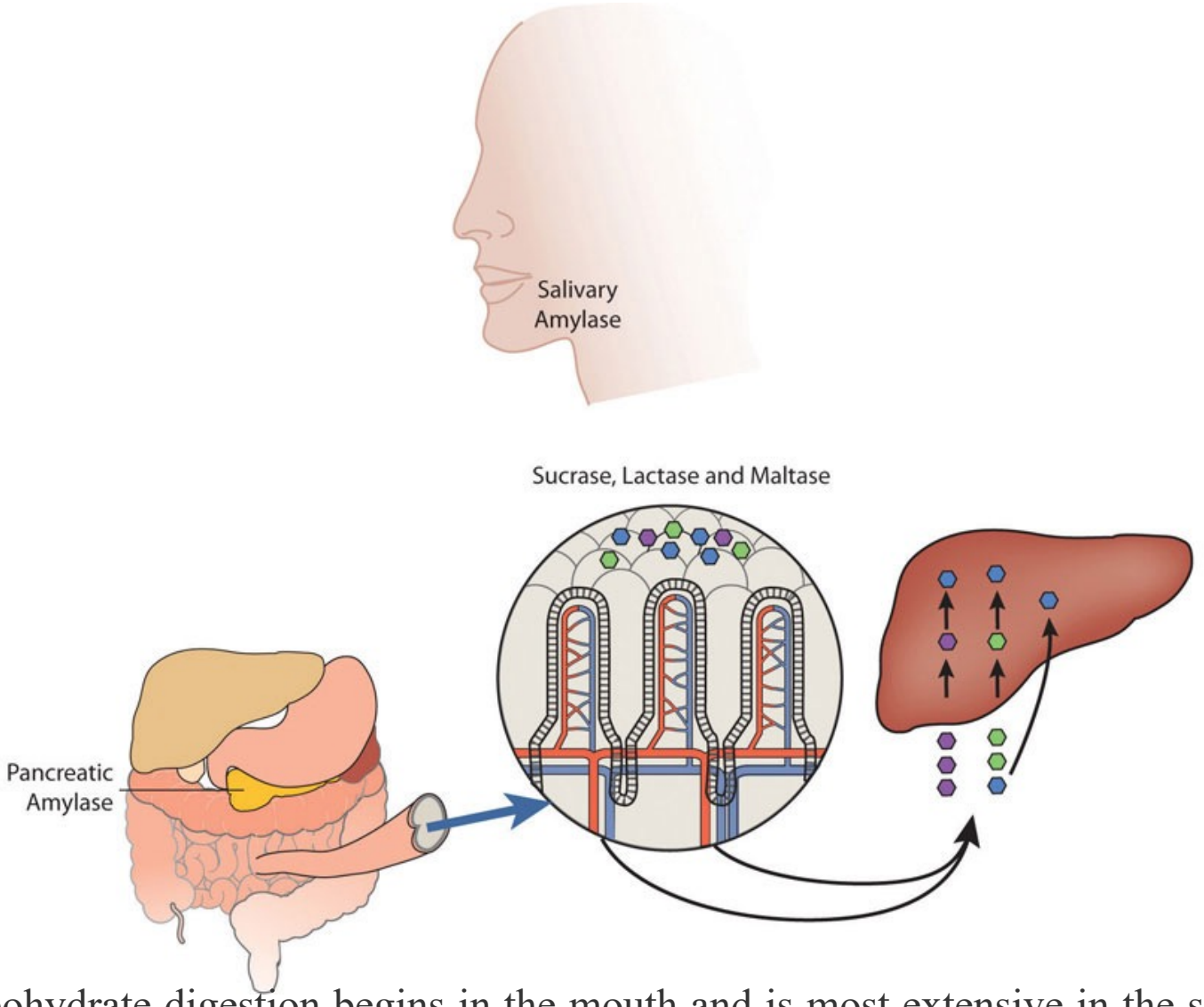
Metabolism: These are the biochemical processes after food consumption that takes place within the cells of the body for the conversion of carbohydrates into energy. However, the metabolism process consists of a series of reactions such as assimilation, and utilization of glucose by the body, which is controlled by the hormone insulin[9].

Carbohydrates From the Mouth to the Stomach



Salivary glands secrete salivary amylase, which begins the chemical breakdown of carbohydrates by breaking the bonds between monomeric sugar units.Source: http://chemwiki.ucdavis.edu/

Carbohydrates From the Stomach to the Small Intestine: Absorption: Going to the Blood Stream



Carbohydrate digestion begins in the mouth and is most extensive in the small intestine. The resultant monosaccharides are absorbed into the bloodstream and transported to the liver. Source: http://chemwiki.ucdavis.edu/

Functions of carbohydrates in the body:

- The main role of carbohydrates is to supply energy to all of the cells in the human body.
- Many cells prefer glucose as a source of energy versus other compounds like fatty acids. For instance, red blood cells are only able to produce cellular energy from glucose.

- The brain is also highly sensitive to low blood glucose levels because it uses only glucose for energy to function (unless under extreme starvation conditions).
- Cellular respiration is a controlled burning of glucose versus an uncontrolled burning.
- Energy storage, if the body already has enough energy to support its functions, the excess glucose is stored as glycogen (the majority of which is stored in the skeletal muscles and liver).
- In building macromolecules, the most absorbed glucose is used to make energy, for instance, some glucose is converted to ribose and deoxyribose, which are essential building blocks of important macromolecules (such as RNA, DNA, and ATP).
- The presence of adequate glucose in the body spares the process of breaking down glucose when energy is needed by the body[10].

Deficiency of carbohydrates in the body:

- Loss of energy that the body needs to function
- Lack of coordination and energy supply between the body processes such as breathing, maintaining body temperature, as well as the contraction and relaxation of the heart and muscles.
- If the total energy requirement is not supplied by the diet, especially in young infants and children, and adults then malnutrition can be a consequence[11].

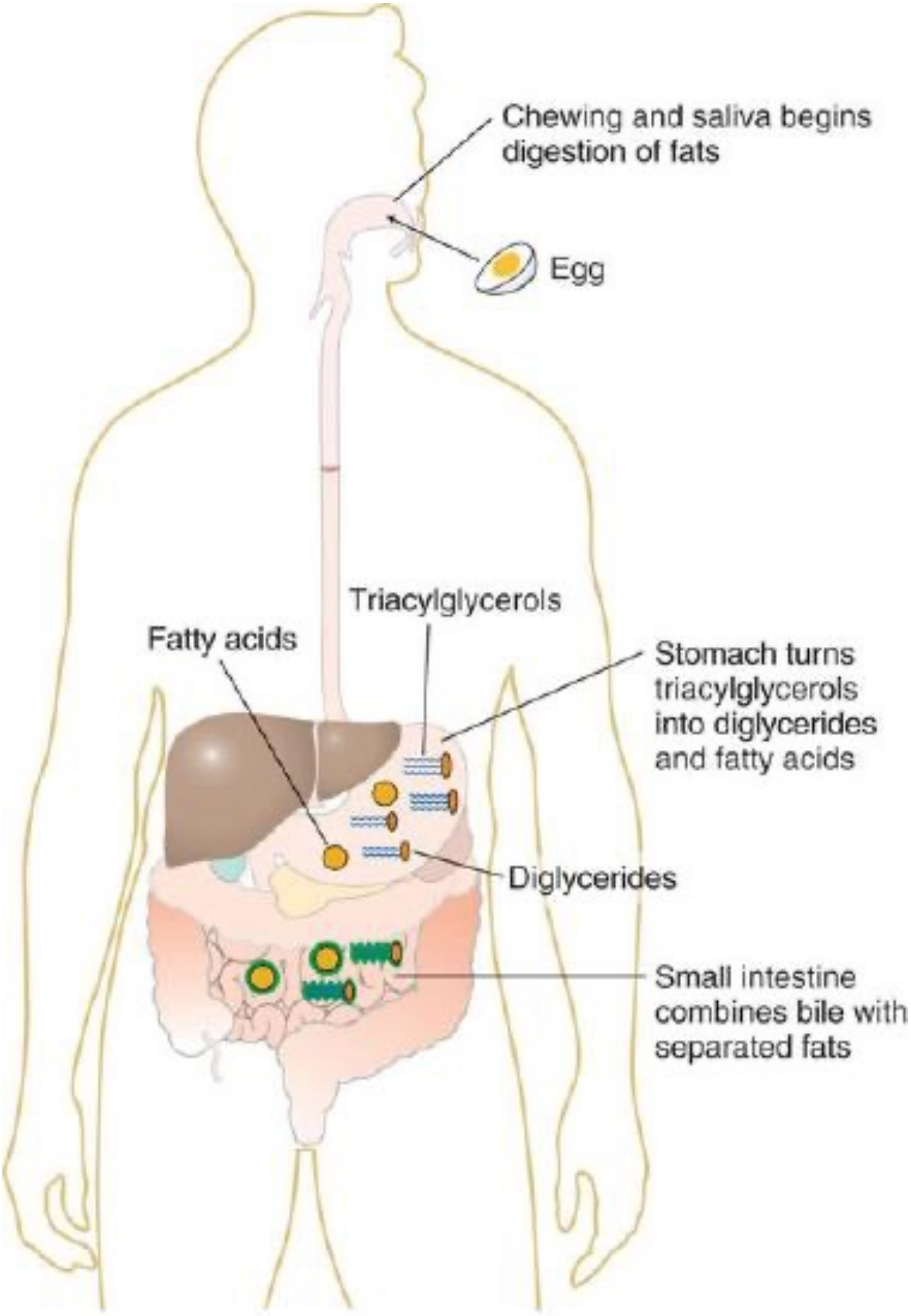
Recommended carbohydrate intake: It has been recommended for young children aged 1-3 years old 45 to 65 percent of their daily intake, older children and adolescents 4 to 18 years old 45 to 65 percent, and adults 19 years and older 45 to 65 percent respectively[12].

Dietary sources: Whole grains, vegetables, fruits, and beans are rich sources of carbohydrates which promote good healthy amounts of fiber and phytonutrients.

Lipids: Lipids are a group consisting of three main types such as triglycerides (triacylglycerols), phospholipids, and sterols that contain fats and oils, lipids are biological chemicals composed of carbon (C), hydrogen (H), and oxygen (O) that unlike carbohydrates do not dissolve in water, however, it can be dissolved in some organic solvents such as benzene, chloroform, and ether. The difference between fats and oils is that fats that are from animal sources remain solid at room temperature and saturated, while oils usually come from plants that are liquid at room temperature and are unsaturated which is considered a healthy fat.

Metabolism: The first step in the digestion of triacylglycerols and phospholipids begins in the mouth as lipids encounter saliva. Next, the physical action of chewing coupled with the action of emulsifiers enables the digestive enzymes to break down the lipids further. The enzyme lingual lipase, along with a small amount of phospholipid as an emulsifier initiates the process of digestion. These actions cause the fats to become more accessible to the digestive enzymes. As a result, the fats become tiny droplets and separate from the watery components[13].

Fats From the Mouth to the Stomach



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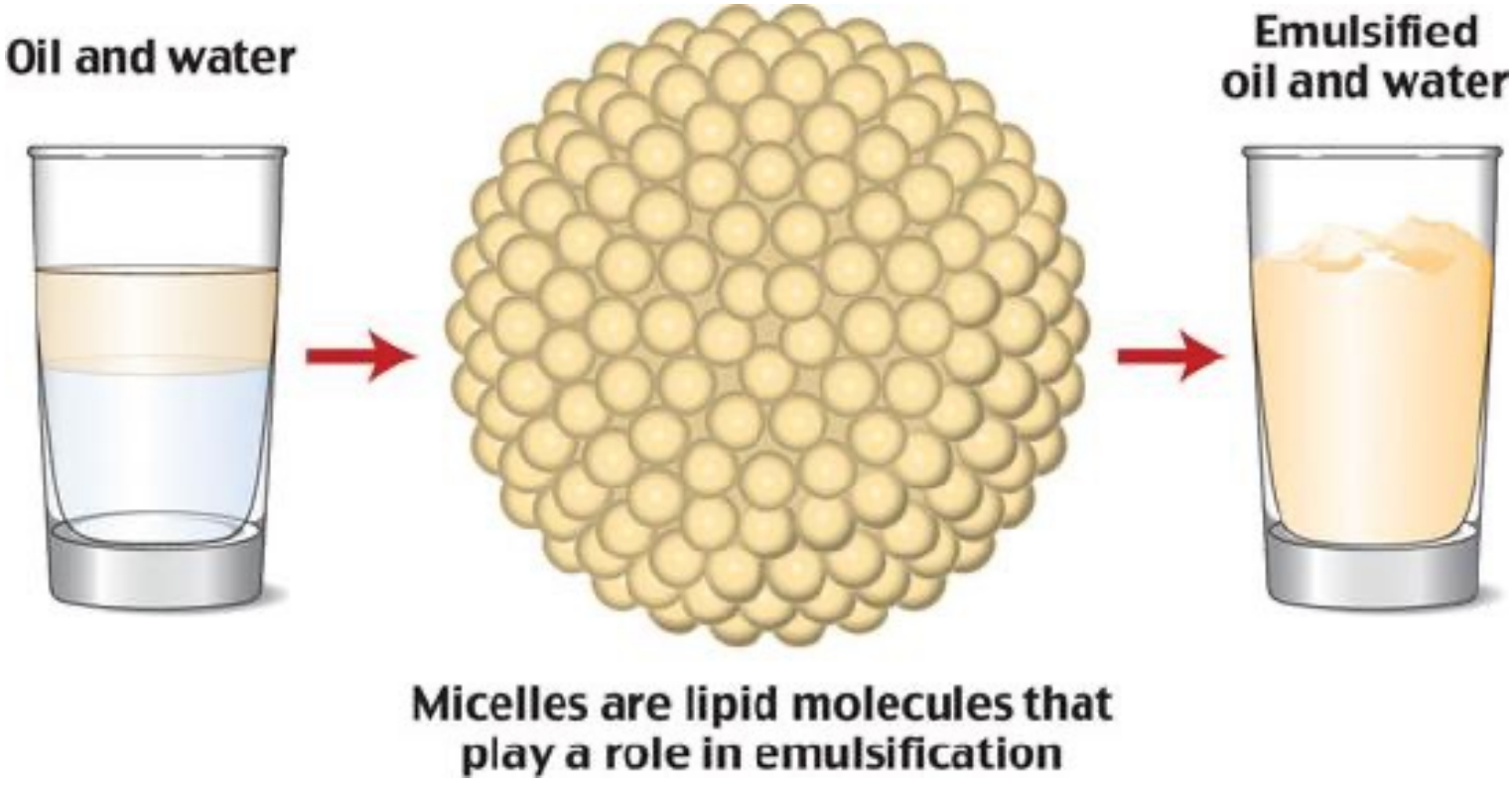
Going to the Bloodstream



Fats can travel through the watery environment of the body due to the process of emulsion. Source: http://chemwiki.ucdavis.edu/Wikitexts/

The function of lipids in the body:

- Energy storage, mobilization, and utilization
- Prostaglandin (a hormone-like compound manufactured from essential fatty acids), cytokine synthesis
- Cell differentiation and growth
- Cell membrane structure, myelination
- Signal transmission
- Hormone synthesis
- Bile acid synthesis[14]

Deficiency of lipids in the body:

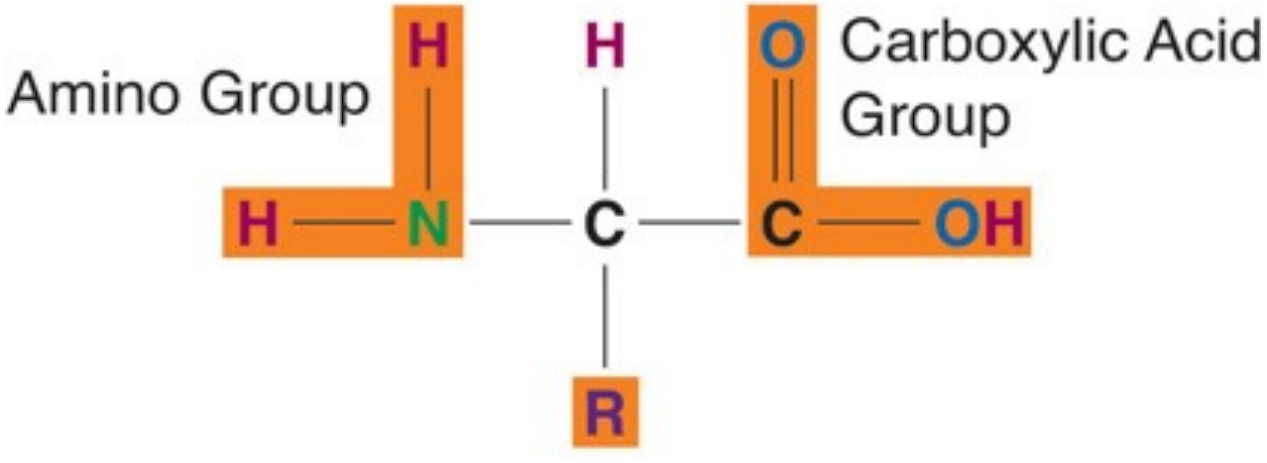
- Fat should comprise a minimum of 3% of total calories to prevent fatty acid deficiency
- Fatty acid deficiency syndrome
    - Dry scaly skin, dermatitis (Linoleic acid deficiency)
    - Hand tremors (Prostaglandin deficiency)
    - Inability to control blood pressure[15]
- The essential fatty acid deficiency known as phrynoderma is seen along with malnutrition[16].

Recommended lipid intake:

- Fat calories should be limited to 20-35 percent of total calories with most fats coming from polyunsaturated and monounsaturated fats such as those found in fish, nuts, and vegetable oils
- Consume fewer than 10 percent of all calories from saturated fats. Some studies suggest that lowering the saturated fat content to less than 7 percent can further reduce the risk of heart disease.
- Keep the consumption of trans fats (any food label that reads hydrogenated or partially hydrogenated oil) to a minimum, less than 1 percent of calories.
- Think lean and low fat when selecting meat, poultry, milk, and milk products.
- For children between ages four and eighteen years, between 25 and 35 percent of caloric intake should be from fat.
- For all age groups, most fats should come from polyunsaturated and monounsaturated fats such as vegetable oils, fish, and nuts according to http://chemwiki.ucdavis.edu/Wikitexts/ and "Dietary Reference Intakes: Macronutrients." Accessed October 5, 2012, www.iom.edu

Dietary sources: It is important to consume healthy fats such as monounsaturated and polyunsaturated fats which are found in higher concentrations in olive oils, peanut, canola oils, avocados, nuts (almonds, hazelnuts, and pecans), seeds (pumpkin and sesame). Polyunsaturated fats are found in higher concentrations: in sunflower, corn, soybean, flaxseed oils, walnut, and fish[17].

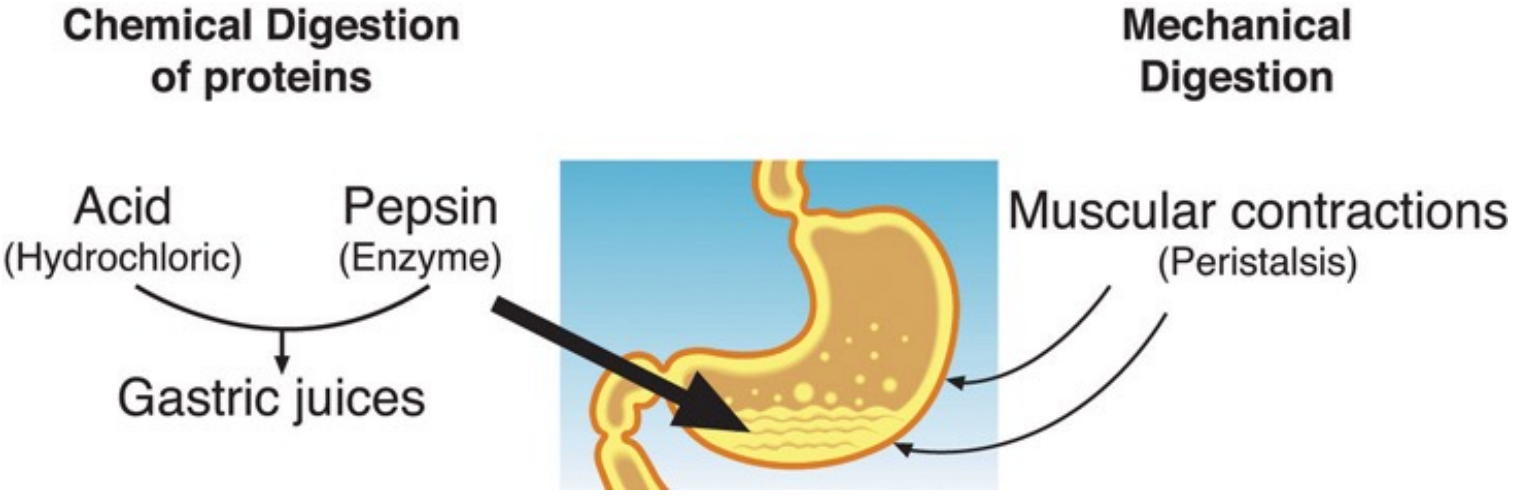
Protein: A complex nitrogenous compound made up of amino acids in peptide linkages. Dietary proteins are involved in the synthesis of tissue protein and other special metabolic functions[18]. Amino acids are commonly called protein's building blocks and contain the elements carbon (C), hydrogen (H), and oxygen (O) similar to carbohydrates and lipids. Each amino acid consists of a central carbon atom connected to a side chain, hydrogen, a nitrogen-containing *amino* group, and a carboxylic *acid* group—hence the name "amino acid." Amino acids differ from each other by which a specific side chain is bonded to the carbon center[19].



Amino acids contain four elements. The arrangement of elements around the carbon center is the same for all amino acids. Only the side chain (R) differs.

Source: http://chemwiki.ucdavis.edu/Wikitexts/

Metabolism: Food contains protein such as eggs or fish. Mashed pieces enter the stomach through the esophageal sphincter. The stomach releases gastric juices such as hydrochloric acid and the enzyme, pepsin, which initiates the breakdown of the protein. Protein digestion in the stomach takes a longer time than carbohydrate digestion, but a shorter time than fat digestion. Eating a high-protein meal increases the amount of time required to sufficiently break down the meal in the stomach. Food remains in the stomach longer, making you feel full longer[20].



Protein digestion requires the chemical actions of gastric juice and the mechanical actions of the stomach. Source: http://chemwiki.ucdavis.edu/Wikitexts/

The function of protein in the body:

- Performs a vast range of functions such as enzymes and hormones balance
- Proper protein intake enables the basic biological processes of the body to maintain the status quo in a changing environment, especially acid-base balance.
- Transport, protection, wound healing, tissue regeneration, and energy production.
- Without adequate intake of protein containing all the essential amino acids, all protein functions will be impaired[21].

Deficiency of protein in the body:

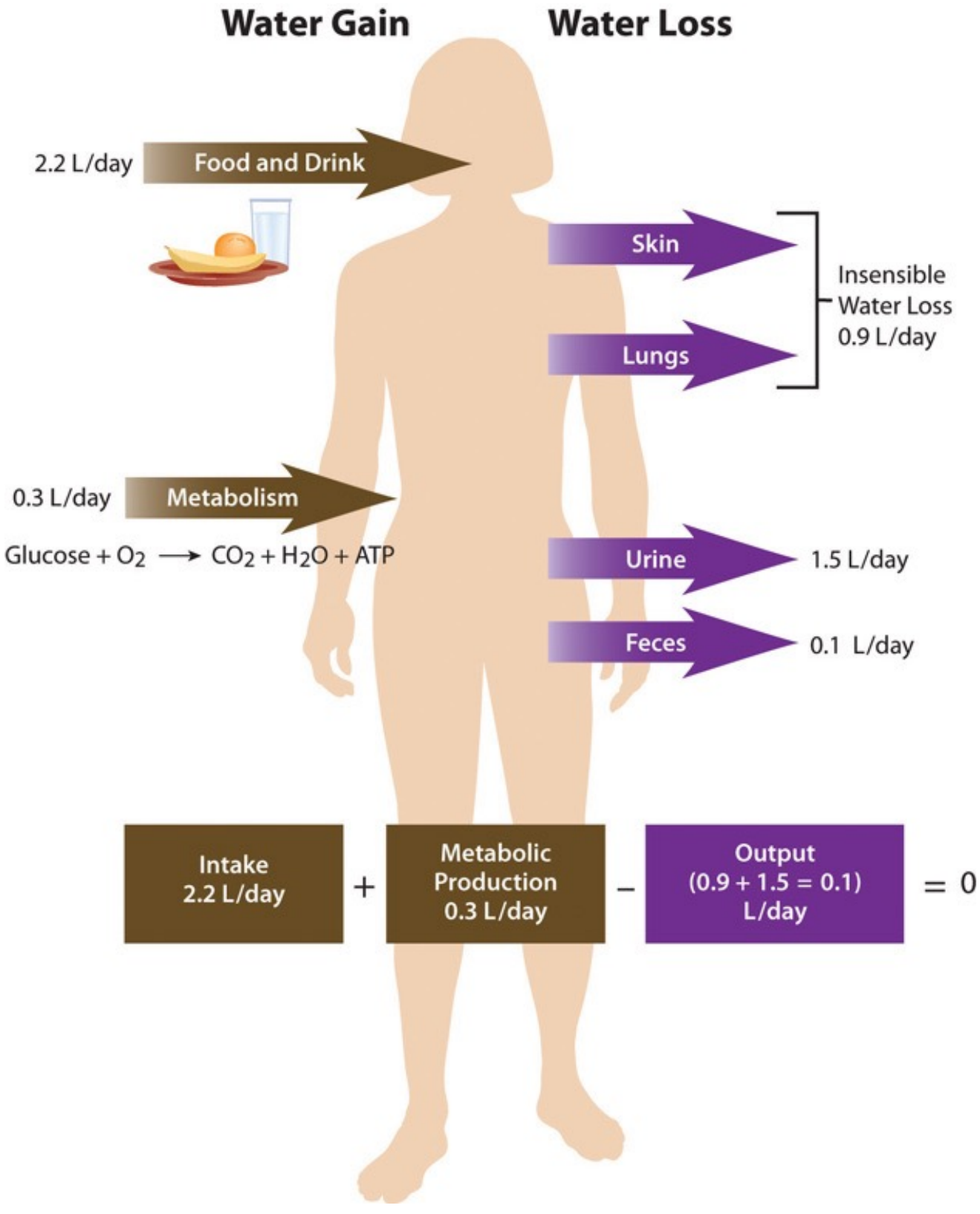
- There are two main syndromes associated with protein deficiencies: Kwashiorkor and Marasmus. Kwashiorkor (is characterized by swelling (edema) of the feet and abdomen, poor skin health, growth retardation, low muscle mass, and liver malfunction) affects millions of children, especially in developing countries worldwide[22].

- Protein deficiency is generally observed with calorie deficiency and this condition is called 'protein calorie malnutrition'. Some studies have suggested that deficiency or imbalance of essential amino acids in the diet may produce a profound depression of immune responses[23].

Recommended protein intake: Protein requirements for adult males age (19+) 56.0 (g/day RDA), adult females (19+) 46.0 (g/day RDA), males age (14-18), 52.0 (g/day RDA), Females age (14-18) 46.0 (g/day RDA), children age (9-13), 34.0 (g/day RDA), children age (4-8), 19.0 (g/day RDA), children age (1-3) 13.0 (g/day RDA), infants (7-12 mo) 11.0 (g/day RDA) and infants (0-6 mo) 9.1 (g/day denotes adequate intake RDA)[24].

Dietary sources: Essential amino acids must be obtained from food. Animal sources of protein tend to deliver all the amino acids that the human body needs. However, other protein sources, such as vegetables, grains, nuts, and seeds, lack one or more essential amino acids. In addition, vegetarians need to be aware of this. People who don't eat meat, fish, poultry, eggs, or dairy products need to eat a variety of protein-containing foods each day to get all the amino acids needed to undergo protein synthesis according to the Harvard School of Public Health[25].

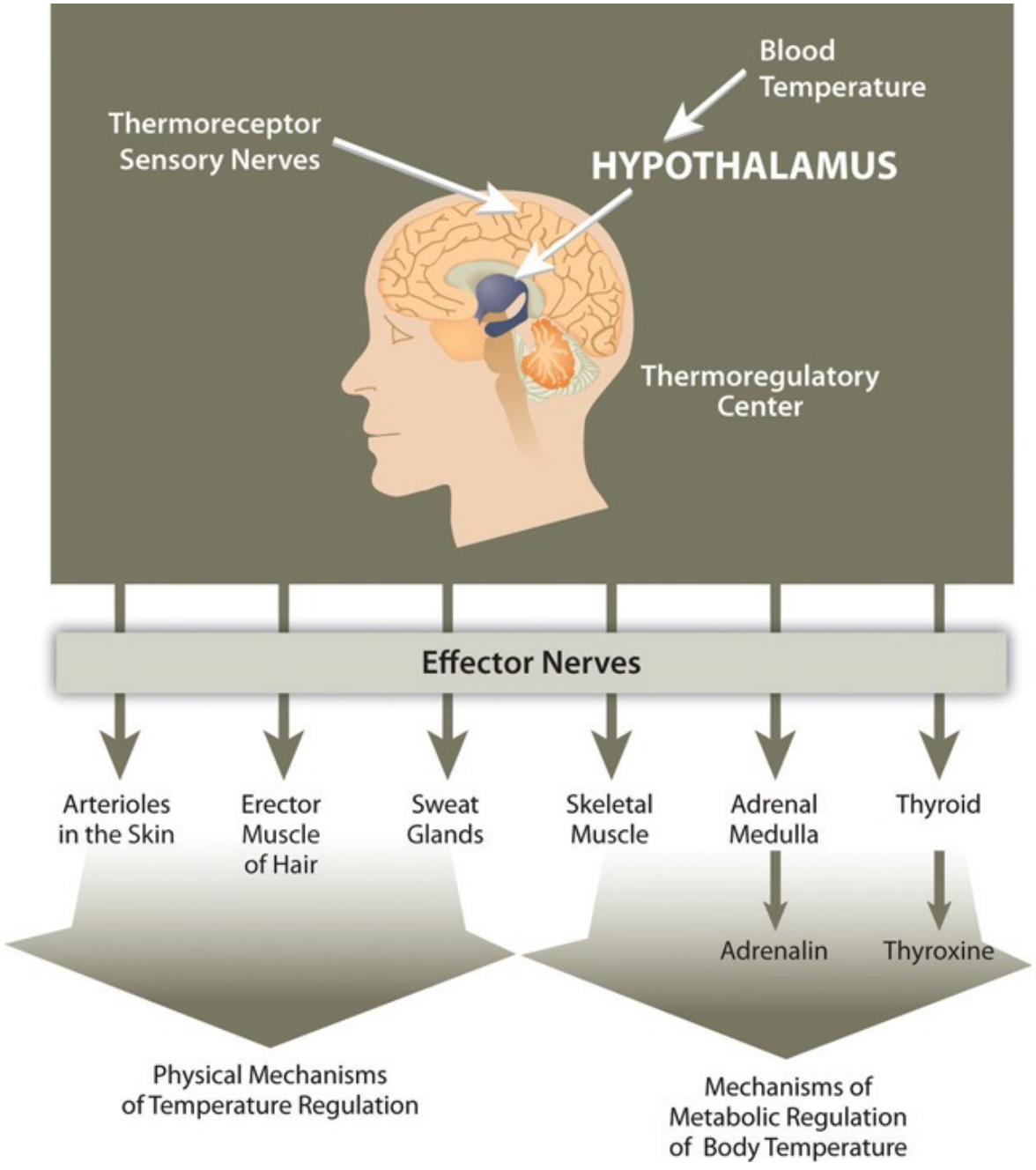
Water: The most essential nutrient (H_2O) for every living organism after oxygen (O_2). An adult human consists of about 37 to 42 liters of water or about eighty pounds. It is not pure water but rather a mixture of cells, glucose, proteins, lipoproteins, electrolytes, and other substances that when dissolved in water, disassociate into charged ions.



Source: http://chemwiki.ucdavis.edu/Wikitexts/

Functions and vitality of water in the human body:

- Water as a transportation vehicle
- Water as a medium for chemical reactions
- Water as a lubricant/ shock absorber
- Water as a temperature regulator



Thermoregulation is the ability of an organism to maintain body temperature despite changing environmental temperatures. When body temperature rises, as what occurs during exercise, the hypothalamus detects an increase in blood temperature. In response, the hypothalamus sends a signal to the smooth muscle of blood vessels causing them to dilate so that more blood flows to the body's periphery. Once on the skin, extra heat exits the body via perspiration (sweat), which is 98 to 99 percent water. Water on the skin's surface evaporates, a process that takes energy and results in the loss of heat, thereby cooling the body. Perspiration is a process that intertwines temperature homeostasis with fluid and electrolyte homeostasis. Water and electrolytes lost in sweat need to be replenished in order to maintain fluid and electrolyte balance. Source: http://chemwiki.ucdavis.edu/Wikitexts/

Vitamins and Minerals: Vitamins are chemicals the body needs in small amounts, eating a diet high in fresh foods with plenty of fruits and vegetables will provide most of the micronutrients that the body needs. The following is a supplementing diet recommended by the author of the book: "Eating Well for Optimum Health".

- Vitamin C, 100 mg twice a day
- Vitamin E, 400 to 800 IU of a natural form (d-alpha-tocopherol together with other tocopherols)
- Selenium, 200 mcg of a yeast-bound form
- Mixed carotenoids, 25,000 IU
- A B-complex vitamin providing at least 400 mcg of folic acid
- Calcium, 1,200 to 1,500 mg as calcium carbonate (for those under sixty-five) or calcium citrate (for those sixty-five and over)[26].

Optimum health components cannot be complete without the mention of the fiber, protective phytochemicals, and water which is the most essential component of optimum health approach to drinking six to eight glasses of pure water a day at the right time before the organs of the body dehydrate.

Researchers are trying to extend the life expectancy of humans to 120 years, but most of humanity cannot live to this age. Many factors are involved with that, but the main reason is that we harm our bodies through our unhealthy food consumption especially lifestyle having the wrong diet, eating at the wrong time, and not getting enough sleep and exercise. **Food triangle:** The value of food medicine is not only nutrition because nutrition only deals with chemistry in the view of Western society. However, in the view of natural medicine food value is based upon the analysis of the food triangle, which consists of three important fields: chemistry, biology, and physics. Therefore, BioNatural healing takes into consideration the entire scope of each component of nutritional biochemistry and not just one isolated component such as chemistry. BioNatural and traditional medicine informed past generations and involved research in the current generation about what we are eating, and we must be educated with this natural and traditional medicine knowledge that has been researched and used on humans for over 4000 years[27]. For instance, in our meals, we cannot only count calories, and measure fats, proteins, and carbohydrates and not consider other crucial values such as the biological aspects of food, the physical aspects of food, and the chemical aspects of foods. Let us analyze each one of them: **Biological aspects of foods:** Using the science of biology to analyze the food's biological properties: Shape, size, age, sex, lifespan, nature, where it grew, how it grew, when it grew, and the fresh or preserved status of food is very important. In addition, category: kingdom, phylum, class, order, family, genus, and species. Furthermore, environmental characteristics that attribute to growth and development or withering and death: sunny, shady, mountain, desert, lake, sea, ocean, dry, wet, etc., as pointed out by the authors Drs. Timothy Yeh and Pearl Yeh in their “Book: Seasonal Food Medicine (2006)”.

Physical aspects of foods: Using the science of physics to analyze food's physical properties that include motion, work, energy, impulse, momentum, temperature, elasticity, fluid mechanics, waves, vibrating bodies, thermodynamics, acoustic currents, electrodynamics, optics, nuclear and high energy physics. These physical properties of food describe that food will see that it reflects the color, flavor, taste, internal temperature, effect on different organ systems, and seasonal value of each food[28].

Chemical aspects of foods: Using the science of chemistry to analyze the chemical properties as it has been mentioned of carbohydrates, fats, proteins, water, vitamins, minerals, and fiber in the first part of this study. However, chemical properties display how food is broken down into simpler components. Food medicine philosophy is based on the value of food that uses the food triangle in combination with the three sciences of biology, physics, and chemistry rather than nutrition which is based solely on chemistry. It is important to understand that chemical aspects play an important role to keep our body's chemical environment in an optimum condition which the science of chemistry provides knowledge to maintain balance in the body, but nutrition without biology and physics is only a partial science. Food medicine is an important part of natural medicine. Let us consider the food triangle from above: Biological aspects, physical aspects, and chemical aspects all are essential components put together as food medicines and their effects on cell biochemistry and pathophysiology in the prevention of diseases according to Cristina Angeloni et al., the publication "Dietary Polyphenols and Their Effects on Cell Biochemistry and Pathophysiology:

Phytochemicals and their effects on cell biochemistry and pathophysiology: Polyphenols (are phytochemicals compounds found abundantly in natural plant food sources that have antioxidant properties) occur in fruit and vegetables, tea, extra virgin olive oil, wine, chocolate, and other cocoa products, have been demonstrated to use beneficial effects in a large array of disease states such as cancer, cardiovascular disease, and neurodegenerative disorders[29]. Polyphenols may protect cell constituents against oxidative damage and have been reported to limit the risk of various degenerative diseases associated with oxidative stress, including cardiovascular diseases, diabetes type 2, and cancer. However, researchers suggest that the classical hydrogen-donating antioxidant activity is unlikely to be the sole explanation for their cellular effects in vivo. Therefore, recently it became clear that, in complex biological systems, polyphenols can exhibit several additional properties which are yet poorly understood. Let us review the articles that summarize the current knowledge of BioNatural healing on the beneficial effects of polyphenols in food medicines' prevention of diseases.

BioNatural remedy of polyphenols in cancer: Researchers are involved in the chemo preventive and anticancer effects of tea polyphenols, there is an increasing trend to employ these substances as conservative management for patients diagnosed with less advanced prostate cancer. According to Cimino et al., and Davalli et al., the most recent observations related to tea polyphenols and human prostate cancer risk, in an attempt to better outline their potential employment for preventing prostate cancer. Similarly, Oleaga et al., show that polyphenolic extracts from coffee, as well as the single constituent caffeic acid, decrease cyclin D1 in HT29 colon cells, thus suggesting chemo preventive properties for both substances are useful. Furthermore, Baumeister et al., presented data regarding the antimutagenic effects of curcumin and epigallocatechin-3-gallate in human oropharyngeal mucosa cultures exposed to cigarette smoke condensate indicating that dietary polyphenols are capable of preventing tobacco-related genotoxicity in the mucosa of the upper aerodigestive tract.

Two other groups Zhang et al., and Widen et al., reports indicate regarding other cancer types that the antioxidant and growth-inhibiting effects of flavonoid extract on erythrocyte and an erythroleukemia cell line, respectively. Caffeic, syringic, and protocatechuic acids are phenolic acids derived directly from food intake or generated following gut metabolism of polyphenols as Zambonin et al., explore the antioxidant activity of these compounds in membrane models and leukemia cell lines, HEL.

BioNatural remedy of polyphenols in cardiovascular diseases: Quercetin, naturally occurring flavonoids, has been shown to decrease and regulate inflammatory responses and exert cardioprotection. As the authors, Angeloni and Hrelia present a study on the protective effect of quercetin on rat cardiac dysfunction during sepsis and demonstrate that this flavonoid is involved in the inhibition of cell growth as well as the induction of apoptosis. These results suggest that quercetin might serve as a valuable protective agent in cardiovascular inflammatory diseases. Vascular protective effects and antiatherogenic properties of anthocyanins have now been recognized.

BioNatural remedy of polyphenols in neurodegenerative diseases: Natural remedy of different dietary polyphenols on hippocampal cell proliferation and differentiation, models of anxiety and depression. Dietary polyphenols appear to exert positive effects on anxiety and depression, possibly in part via the regulation of adult hippocampal neurogenesis (AHN) as mentioned by Dias et al. Therefore, further research on the effects of dietary polyphenols on behavior and AHN may play a significant role in the approach to use diets, especially with polyphenols as part of the therapeutic interventions for mental health and whole-body health improvement. Let us analyze some of the essential phytochemicals in the prevention of diseases according to the authors of the "Book: Prescription for Natural Cures (2011)"[30].

BioNatural remedy of phytochemicals in the prevention of diseases:

Allylic sulfides: can be found in garlic and onions with properties of detoxification to support the prevention of cancer.

Bioflavonoids: In fruits and vegetables, having properties antioxidant, cancer prevention, arthritis, and circulatory diseases.

Catechins: In berries, tea (especially green tea), with properties antioxidant, detoxification for high cholesterol, cancer, and heart disease prevention.

Chlorophyll: In green plants and other colored vegetables, antioxidant, contains vitamin K for anemia, detoxification, burns, wounds, and cancer.

Curcumin: Turmeric with properties anti-inflammatory, and antioxidant for prevention of arthritis, inflammatory bowel disease, and cancer.

Ellagic acid: In berries, grapes, apples, and tea with detoxifying properties for cancer prevention.

Flavoglycosides: In ginkgo, black tea with properties antioxidant, improved blood flow in the prevention of heart disease, varicose veins, depression, and poor memory.

Fructooligosaccharides (FOS): Main sources are Jerusalem artichoke, chicory root, garlic, bananas, detoxification, and increase beneficial bacteria for the prevention of digestive conditions such as irritable bowel syndrome, Crohn's disease, ulcerative colitis, yeast overgrowth, cancer, and vaginitis.

Gallic acid: In green tea, red wine is sourced, with the properties of antioxidant, and immune enhancement for the prevention of infections and heart disease.

Glucosinolates: Cruciferous vegetables (broccoli, cauliflower, kale, brussels sprouts) have the properties of detoxifying for cancer prevention and general detoxification.

Indoles: Cruciferous vegetables (broccoli, cauliflower, kale, brussels sprouts) have the properties of detoxifying, and hormone balancing for cancer prevention (especially hormone-dependent, such as breast and prostate).

Isoflavones: Soybean is the main source with properties of hormone balancing for the prevention of Premenstrual Syndrome (PMS), menopause, and cancer.

Isothiocyanates: Broccoli, cabbage, cauliflower, and horseradish have the properties of detoxification in the prevention of cancer.

Lignans: Flaxseeds, and walnuts to build immune enhancement, and hormone balance in the prevention of cancer and cardiovascular diseases.

Limonoids: Citrus fruits and peels have detoxification properties in the prevention of cancer and cardiovascular diseases.

Lycopene: Tomatoes, red grapefruit, antioxidant for cancer prevention.

Organosulfur compounds: Garlic, onions, and chives have antioxidant immune-enhancing detoxification properties for the prevention of cancer, cardiovascular diseases, and immune enhancement, general detoxification.

Phenolic acids: Broccoli, berries, tomatoes, cabbage, and whole grains have antioxidants in cancer prevention.

Sulforaphane: Cruciferous vegetables (broccoli, cauliflower, kale, brussels sprouts) have the properties of detoxifying, and hormone balancing for cancer prevention.

Terpenes: Citrus fruits have anticancer properties in the prevention of cancer and hormone balance.

Conclusion: The human body is a minute universe; it looks simple from the outside, a simple structure but inside it is so complex and mysterious biologically, chemically, and physiologically. Running this vital engine with proper fuel requires the knowledge of how these tiny cells, tissues, organs, and whole-body systems function and operate. Therefore, the need for the body is based on proper nutrition and biochemistry of major groups such as carbohydrates, fats, proteins, water, vitamins and minerals, and fiber with the right diet and right time and exercise are most important for vitality and optimum health. Food triangles such as biological aspects, physical aspects, and chemical aspects should be a major part of humans to run the body engine with a healthy fuel of food as medicine and medicine as food. Every human being has a responsibility individually and collectively in understanding and collaborating in assistance through research and partnership in reducing malnutrition throughout the world in a sustainable way for a better and happy life for everyone around the world. The author is extremely thankful to Almighty God for the opportunity and time availability in preparation of this research article for our dear readers. **References**

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On behalf of BioNatural Healing College (BNHC), I would like to Congratulate Dr. Tanveer Alam and his colleagues at the Unversity of Nizwa Oman for their very hard work and great accomplishment Australian Innovation Patent on Anthocyanin Food Color: BNHC is very pleased with this dedicated achievement to Dr. Tanveer Alam which is also a faculty member of BNHC. Wishing you all much success and happiness.
Best regards
Dr. M. Nadir Sidiqi Ph.D.

By Dr. Tanveer Alam

Australian Innovation Patent on Anthocyanin Food Color:

The work drew attention from the Food Industry. When I was working on natural colors and found that synthetics colors used in FD&C (Food, Drugs & Cosmetics) are having more toxic effects, sometimes develop cancer and hyperactivity in children. In US and Europe, synthetic colors are totally banned for FD&C products. Keeping this thing in mind, I started my work on natural food colors for food industries. Recently I developed a new technique for the production of anthocyanin (purple-pink color) from black carrot. The main problem with anthocyanin color is its transparency and stability. The transparency of anthocyanin color depends on the purity of anthocyanin. I used macroporous polymer (Translucent beads) having high surface area and got the high purity anthocyanin. The novelty of this technology is to enhance the transparency, solubility and stability of the anthocyanin (purple-pink color). Anthocyanin are the polyphenols and having the antioxidant activities. Food products available in the markets which contain the anthocyanin (purple-pink color) are nutritious and good for health.

Australian Government
IP Australia

CERTIFICATE OF GRANT
INNOVATION PATENT

Patent number: 2021104833

The Commissioner of Patents has granted the above patent on 4 May 2022, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

TANVEER ALAM of UNIVERSITY OF NIZWA, PO BOX 33, PC 616 AL-DAKHLIYA 616 Oman
SHAH ALAM KHAN of NATIONAL UNIVERSITY OF SCIENCE & TECHNOLOGY, P O BOX 620 MUSCAT 130 Oman
LUBNA NAJAM of DAV(PG) COLLEGE, CCS UNIVERSITY MUZAFFARNAGAR UTTAR PRADESH 251001 India
AHMED SULAIMAN FADHIL AL-HARRASI of UNIVERSITY OF NIZWA, PO BOX 33, PC 616 AL-DAKHLIYA 616 Oman
AHMED BIN KHALFAN AL-RAWAHI of UNIVERSITY OF NIZWA, PO BOX 33, PC 616 AL-DAKHLIYA 616 Oman

Title of invention:

SIMPLE AND RAPID COMMERCIAL METHOD FOR THE PRODUCTION OF ANTHOCYANIN PIGMENT FROM THE BLACK CARROT (DAUCUS CAROTA) JUICE BY RESIN COLUMN CHROMATOGRAPHY

Name of inventor(s):

ALAM, TANVEER; KHAN, SHAH ALAM; NAJAM, LUBNA; AL-HARRASI, AHMED SULAIMAN FADHIL and AL- RAWAHI, AHMED BIN KHALFAN

Term of Patent:

Eight years from 2 August 2021

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.

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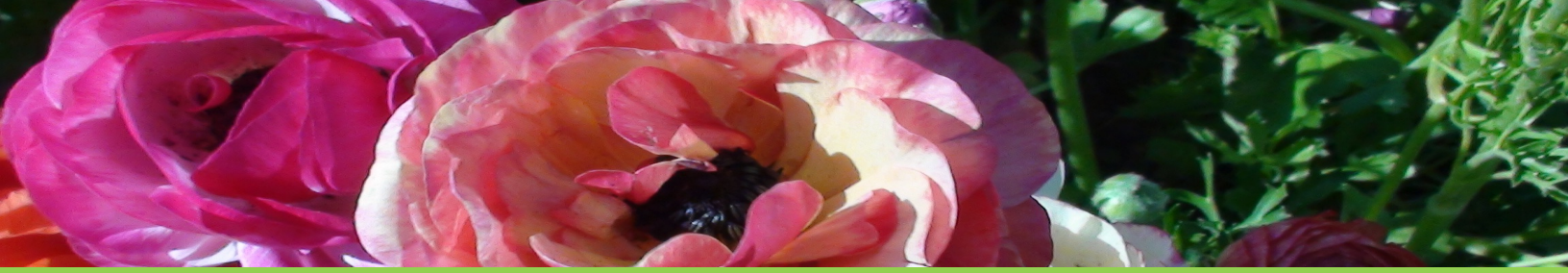

Mission: BioNatural Healing College is a non-profit public benefit institution that has tax-exempt status under the Internal Revenue Service, Section 501(c)(3) of the United States of America. Our goal is to offer a high-quality education a diploma program as well as holistic health and nutrition conferences, seminars, workshop, and continuing education. The focus of these educational programs is to offer healing and holistic nutrition science through online distance learning. These dynamic online education programs will provide diverse adult learners throughout the world the experience of enhancing their quality of life, their health, and their happiness.

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