A report has just been unveiled by the World Health Organization on healthy living, covering approximately eight of the 12 top health risk factors. Nutrition accounts for 42% of the world's 55 million deaths each year [1].

In the case of homeostasis related to metabolic diseases in men, the micro biota has a major impact on the host, but it continues to be difficult to demonstrate its causality [2]. People like hosts have evolved in millions of years with micro-organisms and each body's environment is formed by a special group of micro-organisms. These bacteria occur in the skin, the eyes, under the fingernails, orally and, most commonly, within the kidneys.

It leads to intestinal dysbiosis due to the various antenatal determinants like caesarean section delivery, feeding technique, antibiotic use, gestational age or climate as these determinants affect the bacterial colonisation patterns. The establishment of the gut microbiota and its growth during the lifecycle shift from the previous accepted dogma of a germless, non-germ-free mammalian placenta and foetus, to the actual awareness that in utero humans' specific prenatal microbiomes have now been harboured, which is important for the developing immune system in new-borns.

Amniotic fluid might cause by conditions, increase foetal microbiota complexity and have long term health effects as well as disease sensitivity, as placental microbiota can cause foetal immune responses. The early intestinal settled baby's immune system and consequently health affects the maturation, although some scholars consider extremely poor evidence with respect to the 'in-utero colonisation hypothesis'. The health authorities are well aware of the "forgotten organ" as well as the essential role of diversified and stable intestinal micro-biota in maintaining host health and well-being in the future. An unbalanced micro-biota composition in the gut cannot be considered good for health [3]. Indeed, though we have commonly stated that our bodies have ten times as many cells as human cells from microorganisms, it has been claimed that bacteria are close in their numbers to those of human cells; others have estimated this to occur [4,5].

A variety of functional organisms and strains in human metabolic diseases have been reported in recent years. Beneficial bacteria can exhibit a range of bioactive metabolites that can damage the health of the host such as cytotoxic, genotoxic or immunotoxin, changing the paradigm of knowing the radical cause and progression of multiple human metabolic diseases [5]. In the human intestinal tract, gut micro-biota modifies the expression of multiple genes, including immunity genes, absorption of the nutrients, cell proliferation, and intestinal block functioning. When using accurate nutritional methods, it becomes very vital to know the genomic diversification of considerable components of the intestinal micro-biota. In addition to the health benefits of naturally fermented products, isolated commercial probiotic supplements are more studied in the oral use of live bacteria because this type of study is not given financial help by major companies [6]. Several studies have proved that probiotics can cause diarrhoea or symptoms of bowel syndrome. In most sepsis patients, but good evidence supports their use, and proboscis is not paramount.

The fact that microorganisms in the gut have an abundant and normal range can boost optimal health [7]. Great and healthy bacteria improve the digestibility of food through enzymes, vitamin synthase, nutrient maintenance and sweet cravings, immune system maintenance and the general well-being. The host metabolic phenotype is modulated by the micro-biome, which consists of microorganisms and their grouped genomes. The truth is that the guts bacteria are closely correlated with immune system's function are now well-established. The intestine's micro-biota controls the metabolism of L-tryptophan and identifies the molecular mechanisms that form the basis of these interactions [8]. The gums and intestines contain a large proportion of the system and when the gut health is unbalanced, the immune system cannot function correctly [9]. Also, in modern life a variety of common factors, such as processed food and antibiotics, are able to kill human gut bacteria. And use of medicines has both minor and major effects on ecological effects of natural microbiota and intestinal motility. A number of similar factors in modern life, including processed foods as well as the antibiotics, can also kill bacteria from the human intestines and the use of medicinal products also has a long and short-term impact on natural micro-biota and gut motility ecologically.

The health benefits of eating vegetables cannot be linked to just one type of vegetables, nutritionists and health professionals believe that a balanced diet involving a variety of vegetables. All plants will safeguard individuals from chronic diseases. In most other vegetables, phytonutriceuticals consist primarily of polyphenolics (carotenoids and flavonoids), vitamin C, fibre, selenium, as well as folate except that of glycosylates and thiosulphates, which are specifically for the cruciferous substances and alliums. Primary distinction is that group of the plants has a specific composition and quantity of this plant nutraceutical which differentiates it from other groups and plants within a particular group [20]. For e.g. flavonoid, carotenoid, vitamin C and vitamin E are abundant in the a piaceae family (e.g. celery, parsley). For example, Several of the better flavonoid apigenin including vitamin E origins is celery & petsley, with the carrots having three specific flavonoids: *luteolin, quercetin* and *kaempferol* [10]. In the last four decades, carotenoids overall, traditional breeding has dramatically increased to 1,000 ppm in the past four decades in terms of fresh weigh carotenoids.

In conjugation with *quercetins*, flavonoids and *tocopherols, Asteraceae's* or composites (e.g. lettuce, chicoria) are rich [22]. Significant variations in flavanol content, also observed by these authors with lettuce cultivars, were observed by Crozier et al. The typically consumed small round salt was just 11 μg/g fresh in weight and this quantity is much lower intake in case of the iceberg salt. The outer leaves of the red lettuce culture 'Lollo Rosso' contained, by contrast, 911 micrograms/g. The rottenness of this salad is because of the high levels of anthocyanins that are phenyl-propanoid products, like *quercetin*. As a pathway end-product has been increased, other related compounds, even flavanols, may also be found at higher levels. Lutein is richer in roman salad than *lettus*; and *quercetin* is richer in leafy and roman lettuces.

Vitamin C, carotenoids and tocopherols are rich in *Cucurbitaceae* (such as pottery, squash, melon, cucumber), among others [11,24]. Burger et al. found that the content varies from 7.0 mg per 100 g to 32.0 and 4.7 g/100 g in sweet melons, respectively [12]. Ascorbic acid and β-carotene were respectively. These have anti-diabetic assets and are ideal for reducing the effect of diabetes-2 type-2. Diet is the standard therapy for such heart disease and bitter gourds are especially critical if pharmaceutical products are not available, as is the case in much of the developed countries [13]. A strong supply of folate throughout the human hepatic adenocarcinoma cells was portrayed to suppress DNA synthesis *Chenopodiaceae* family (e.g. Beet Greens, spinach and Swiss chard,) [14].

The vegetables of *Chenopodiaceae* are one of the highest density oxalate plants if oxalates are too concentrated in bodily fluids, they can crystallise as well as contribute to health problems such as kidney stones. Legumes are a good source of both mature and immature grains of dietary and isophlavonoid fibres (*fabaceae*, legumes such as beans, peas, soy beans) [15]. Soluble as well as the insoluble fibre and fermentable aspects of 10 mature legumes (mung beans, peanuts, green peas, soybeans, kidney beans and pigeon peas) were determined. According to Mallillin et al., quantity of fibre in the diet varies between 20.9-46.9 g/100 g and is the excellent source of human faecal inoculum's in vitro fermentation [16]. High-Flavanol legumes are 98 and 145 mg quercetin/g which encompasses sugar snap peas as well as the mange-tout, respectively. Some iron-rich legumes still exist. Trinidad et al. identified calcium minerals, in vitro zinc and iron in 10 local legumes (soybeans, sitao polishes, kidney-bohemians, green fish, lima beans and pigeon pea)[17].

The richest sources of glycosylates in human consumption include: *crustaceans* or *Cruciferae*, like, chocolate, broccoli, china chalk, kailan, china, turkeys, radish, horseradish, rocket, watercress, moose and other plants. Crucial vegetable consumption is correlated with wellbeing by most consumers. They had grounds since the World Cancer Research Fund in the U.S., concluded that a crucifier-containing food for the prevention from the colon, thyroid and the rectum cancer in the human beings, as well as to protect them against cancer in other species when eaten with vegetables that are abundant in other phytonutriceuticals [18]. Gluco-rich *cruciferanes*, such as broccoli and kale, have proved to be healthy against pulmonary, prostate, breast and chemical cancer. Epidemiological evidence shows that a crossbreeding diet may lead to the reduction in the risk of various types of the cancer and reduce the risk in a considerable amount by using at least 10 g/day. The risk is extremely substantial. Epidemiologic studies have proved that the diet of broccoli may decrease the chances of progression of one or multiple portions of broccoli on weekly from local to severe prostate cancer [19].

Out of the 22 samples of the vegetables the 2nd highest is vitamin-rich cruciferous vegetables also contains kale. The vitamins β-carotene, C, E are present in large percentage in Brussels and broccoli. The assessment of broccoli alpha and beta, alpha, and beta-tocopherols and vitamin C revealed major differences between and within these *crucidians* [35] sprouts, colds, cauliflowers and kale. In all five crucifers tested, vitamin C is the most abundant vitamin. These vitamins were most commonly found in Kale, followed by broccoli, sprouts, chocolat and coliflora from Brussels. The analysis indicated that genetic factors were associated in broccoli with 56% of vitamin C, 80% of β carotene and 83% of *α-tocopherol* variability [20]. Crucifiers are also a very good folate source. Brussels germs, broccoli and folate, ranked by 112-136 and from 71-92 μg/100g respectively as one of the highest vegetable sources for folates.

Significant amounts of dietary fibre are also present in crucifers. The dietary cauliflower fibre content, or roughly 51% of total dry weight of some 41%, was estimated to be approx. Nonstarch polysaccharides of 5% of the total fresh weight [21]. Concentrations of Brussels cellulose and lignin were estimated at 36% and 15.5%, with cauliflower measured at about 17% and 14%, respectively, of the total dry matter.

Flavonoids are included in other antioxidants in crucifers. The flavonoid content of 63 vegetables was examined by Miean and Mohamed and it was found that between 149 and 215 mg/kg of flavonoid broccoli, chocolate, Chinese cabbage and kalian [22]. Broccoli had *myricetin*, *quercetin* and *luteolin*; *myricetin* and *quercetin* were present in the coliflora; *quercetin* and *apigenin* were found in the kailan; but *myricetin* alone was in the chalk. Such a study has found that in edible areas of most vegetables, *quercetins* are under 10 mg/kg, except for broccoli, onion and the kale with the methanol extracted flavonoids are less than 10 mg/kg. Kale, broccoli and turnip encompassed kaempferol at a concentration of 48, 72 and 211mg per kg. Kaempferol was also discovered in chalk leaves, though Kaempferol was not found in any of the cruciferous vegetables that were examined by Miean and Moamed [22].

DEFINITION OF THE FUNCTIONAL FOOD

The "functional food" term had been coined in the '80s by the Japanese to describe processed foods that, in addition to being nutritious, help in the performance of certain bodily functions. Until now, Japan has been the only country to create a regulatory approval scheme for functional foods. The term FOSHU was invented by the Japanese and was introduced for a particular health benefit. In this way, the word FOSHU was coined. Worldwide research has been conducted in accordance with the recommendations made by different authorities, universities and industries to identify different functional food concepts, from very simple to complex [23].

Foods perform certain roles in one way or another, but there is no legislative concept of feasible foods. However, there are a number of meanings, and the general consensus is that functional foods are healthy foods taken as part of a daily course of meal puts a physiological benefit beyond the basic nutrient supply feature, such as the promotion of the health or disease prevention. There are other words, in addition to the meanings above, which are sometimes related or shared with functional food.

MARKET OF FUNCTIONAL FOOD

Consumers are very much interested and welcomed the functional foods worldwide, leading to vibrant markets in New Zealand, Europe, Asia, North America and Australia which are rising steadily at around 7-53 billion by 2010. It is estimated that it will hit a value of at least US$ 90.7 billion by 2013. Moreover, Japan and Europe combined account for more than 91% of overall sales in the largest functional food markets of the United States. In the North American market, the rate of introduction of functional foods has risen from 200 in 2006 to over 800 in 2008. The market is introducing new products containing nutrition, probiotics, antioxidants and herbal sweetening agents, including stevia [24].

In the North American market, the numbers of functional food introductions grew from 210 in 2006 to over 803 in 2008. New products such as stevia are added to the market with nutrients, probiotics, antioxidants and herbal sweetening agents. The number of operating food manufacturers in Canada, e.g. Harmonium International Ocean Nutrition Canada Ltd, Lassonde Industries inc. (food juices), CV Technologies Inc. (natural medicines) etc. has experienced substantial growth in this sector. This prompted the United States of Manitoba to contribute towards further research into the health claims of various foods at the research institutes, for example, and at the St Boniface General Hospital. Starling estimated that by 2015, a large amount of energy and enhanced milk products such as probiotic yogurts will continue to grow on the US market by 21 percent. Japan is the world's second largest market [25]. Menrad investigated the introduction between 1988 and 1998 in Japan of more than 1800 functional food items. In Japan, the number of features that are sold is perhaps the most revolutionary in the world, with FOSHU accounting for over 500 licenced products for $18 billion (2005) and $5.9 billion for FOSHU.

Among Europe, Germany, France, Great Britain and the Netherlands, 306 goods were launched in Germany in 1999 and 2000 and serve the largest countries on the functional food market. Functional milk products have been shown to be the largest commodity market, with sales in Europe amounting to approximately US$ 1.45 billion in 1999. In the last twenty-five years, the European market for functional food has been under the control of Unilever (Royal University), Nestlé (Switzerland), Danone (France), Iparlat (Spain), Raisio Food Group (Finland). New aspects were introduced to the market in this area by creative items like 'Flora Pro-Active' and 'Petit' drinking yoghurt (Nestle). Under the latest EU guidelines, manufacturers are expected to supply empirical evidence in support of their product statements which has hindered the launching of practical foodstuffs.

SCIENTIFIC DISCIPLINE EVOLUTION OF NUTRITION

Nutrition is the research sector which involves processes through that living organisms feed and utilize for life support, development, the functioning of tissue and organisms and energy production. The compounds in Dietary components like fatty, amino acids as well as the vitamins and minerals were essential (Bender & Bender), nutrition are nutritious and energies are essential. Non-starch polysaccharide and carotenoids, which cannot be categorized as nutrients instead have increased understanding of the significant effects on human health, include non-starch polysaccharides and carotenoids, are included into the bio-active dietary components called phytochemical or dietary fibre and protective factors (Complex Carbohydrates) [46].

Nutrition is a genuinely multidisciplinary science that addresses scientific problems in a variety of ways. Many different disciplines, such as biochemistry, genetics epidemiology, food science, physiology, need a common understanding and assessment. It is a clear example of integrative biology and the list of nutritional Nobel Prize winners is impressive [26]. However, Achilles' heel may tend to be the very large and complex essence of nutrition. While nutritional scientists recognise the value of the research of nutrition in the age of post-genomic, it is important to take on a broader role in nutrition in order to optimise its capacity.

Food science and nutrition have evolved in the past 151 years, even though the interaction between the diet and health has been recognised very early like Hippocrates (460–377 BC) has reportedly advised on what to eat for his patients. Atwater has been said to be the father of dietary recommendations and a pioneer in nutritional requirements, in food composition and use as well as consumer economics 100 years ago [27]. In the 20th century, the main focus of a study was the discovery of 'accessory factor foods,' of minerals (later called vitamins) as well as the essential amino acids and the conduct of analytical experiments. In cooperation with Sir Robert McCance, Elsie Widdowson worked on a variety of key topics in the early 1930's until nearly the end of the 20th century including magnesium, calcium, child psychology, normal and delayed development, as well as body building [28]. The first food composition tables were also set up by McCance and Widdowson (1940).

PALAEOLITHIC MAN: DIET AND NATURAL SELECTION

Anatomically modern human beings grew up around 200,000 years ago, historically splitting up with chimpanzees roughly. Earlier, six million years. It's unclear why modern people have an evolutionary advantage. The latest hypothesis is based on a 'speech gene' known by FOXP2, which is the cause of a broad range of language as well as the speech impairments [29]. The gene codes for a 715-amino-acid protein that is linked to other members of the embryonic development regulatory family. FOXP2, the human version may have lived for less than 200,000 years, allowing it to engage in modern humanity's natural selection process. The ability, majorly the ability to survive a varying food supply, to utilise resources and to adapt to the environment was probably more significant. Oral communication skills may also have enabled early humans to evolve.

The ultimate cause of variability for which natural selection operates is a genetic mutation (chromosome recovery, loss, or rearrangement of chromosome components, as result of chromosome break-up; alteration of individual genes or small areas of DNA). Forty thousand years ago. Favourable mutations in the genome of the human beings, including physical strength and fertility, were selected at that time but health-related characteristics in the post-reproduction period may not have constituted a significant part of natural selection. Natural selection for the successful elimination of mutations has been significantly reduced in modern times excluding prenatal mortality. Crow maintains that adverse mutations have accumulated over the last few centuries but have been compensated for by the rapid changes in the environment that have kept the efficiency of selection far ahead of them [30]. Eaton et al. have argued that human beings can be viewed from a genetic point of view as Stone Age hunters – collectors travelling in time to an environment that is far different from what was chosen in our genetic makeup; personals in industrialised nations now only "forestry in the supermarkets" [31].

Future findings/studies in programming can generate mechanisms of environmental effects for phenotypes, including diet. Genome changes contribute to an increased risk of chronic diseases as well as the cancer, and suggest disruption, should cause variations between genetically identical twins. The epigenetic mechanisms are central, but also involve an altered risk of certain types of cancer for ageing, stem cell therapy, complex traits as well as the cloning in the animals [32]. Hypermethylation of CpG is a gene silencing mechanism that can be used to inactivate defective genes in neoplastic cells. Hypermethylation in the colon also occurs as a feature of age in the normal mucosa and is significantly increased in cancer. The field defect that represents a benefit in colorectal neoplasia is age-related methylation, and there is currently investigation into the protective functions of dietary components such as folate or selenium.

FRUIT BESIDES VEGETABLE FEEDING: HEALTH AND PREVENTION OF DISEASES

Coronary heart illness prevention

Various tests have demonstrated how fruit and veggies interact with coronary heart illness. The research found an inverse correlation to the threat of coronary heart illness between connecting fruit with vegetable fibre. The reverse association between frequencies has been found in meta-analyses by previous studies of strokes and fruits fastened by the hypothesis that fruit and vegetables intake has the protective capacity. The risk for acquiring a heart attack has been reduced by 5% per additional portion of fruit / vegetable intake in a single day, while the risk of fruit consumption has decreased by 8%, suggesting a more protective impact on fruit intake as stated by Daucher et al. Clinical and biological research has helped to preserve the defence from coronary heart disease by eating fruit and vegetables. Of particular interest, there is a link between several clinical and laboratory evidence that shows that fruit and veggy micro and macro constituents perform well to boost risk factors for coronary heart disease such as diabetes, dyslipidaemia and hypertension. A correlation between enough fruit and vegetable attachment and more healthy lifestyles was shown in various studies, which is responsible for the lower incidence rates of coronary heart disease for people who take enough fruit and vegetables. It is commonly believed, as stated by Joshipura et al. that fruit or vegetable consumers smoke lower, train more and receive more education rather than non-consumer [33].

Higher blood pressure prevention

The threat of illness of the heart and the stroke, as stated under Chobanian, is increased by high blood pressure. Fruit and vegetable intake insufficient blood pressure decreased according to studies Alonso et al. The addition of more fruits and plants to a balanced diet is one effective method of reducing the hypertension.

Prevention of diabetes

While evidence has shown that a diet rich in vegetables is less obvious than cardiac disease, results from several studies have demonstrated a better monitoring of glucose levels in the blood as an association with increased vegetable consumption. In the following two years, the fruit and vegetable consumption was reduced by at least five servings daily, was around 20%, compared to vegetable that had not been eaten, as per Ford, Mokdad and others [34]. Greater leafy & yellow legume concentrations have also been linked with a major decreased threat of over mass type 2 diabetes. The cross-sectional study conducted in the UK by 6000 non-diabetic adults who eat more fruit and vegetable amounts, shows significantly lower levels of glycosylated haemoglobin and postulates that fibre and magnesium as stated by Sargeant et al. (2001) are possible compounds of fruits and vegetables that can boost glucose control [35].

Prevention of stroke disease

The study revealed that an increase in stroke consumption per day of 600 grimes of individual fruit and vegetables. The cumulative pressure on the frucht and veggies with maximum intakes of vegetables and fruits could be lowered by 19 % also the chance of CHD through 31% specifically (Lock et al.).

Prevention of pulmonary disease

Romieu and Trenga have documented a beneficial link between lower risk for development of chronic obstruct ant pulmonary disease and the intake of vegetables and the fruits [36]. Studies in epidemiology in Europe have revealed that increased fruit consumption (particularly apples) can be linked to increased volume expiratory values and better functioning of the lungs. Over 20 years, 2917 patients were subject to a German trial, followed by an increase in daily fruit intake with 24 percent reduction of the risk of chronic obstruction pulmonary illness based deaths. While it is unclear why fruit antioxidants such as vitamin C and flavonoids protect from chronic obstructive pulmonary diseases, increased fruit intakes and a reduced risk of development of chronic pulmonary obstruction.

FACTORS THAT AFFECT NUTRITIONAL PROPERTIES

The nutritious quality of fruit and vegetables is greatly influenced by climatic conditions, particularly temperatures and light intensity. Soil types, fruit trees, mulching's, fertiliser, irrigation, fertilisation, and other cultural activities have an effect on plant water and nutrients that can impact on the mixture and quality attributes of the harvested plant component (as stated by Goldman et al. (Appearance, Texture, Shake and Aroma) The quality and degree of physical injury of the product are determined by maturity at harvest and harvest process. Delays from harvest to consumption or treatment can lead to flavour loss and nutritional quality. The extent of such losses increases over the expected areas for each product during the whole post-harvest process with exposure to relative humidity, temperature, and/or ethylene, carbon dioxide as well as oxygen. According to Mozafar, environmental conditions such as heat and the intensity of light have had a direct effect on the quality of nutrition obtained from the vegetables.

It is assumed that low temperatures favour sugar and vitamin C synths while short-term ascorbic acid oxidation rate is reduced. The maximum amount of beta-carotene in tomatoes can be found at 15-21 °C. The content of beta-carotene is decreasing when the temperatures of lycopene, which is the precursor of beta-carotene and lutein are lower or lower than this, primarily as a result of its temperature sensitivity. B vitamins contribute to the temperature sensitivity of particular plant species. Hot seasonal crops such as beans, veggies, peppers and melons harvest additional B vitamins on higher temperatures (27 °C to 30 °C than low temperatures (10 °C to 15 °C). There was no effect on brightness on B vitamins, however as brightness increases, vitamin C increases and the cumulative reports of carotenoids besides chlorophyll declines.

CONCLUSION

Worldwide diets must be more nutrient-dense, providing all the required nutrients and plant chemicals without the excess energy of high calories such as fats and ethanol. Fibbers and energy needed to maintain health and body weight should also be included in diet. Diets do not rely on additives for vital nutrients to obtain. Additional foods do not replace the meal. The fact that all food intakes are better than isolated food components and it was checked steadily and consciously. Increased intake of rich carotenoids, for instance, was more useful than the supplements of the carotenoid for raising the power of LDL oxidation, reducing effect on the DNA as well as promoting the repair of human metabolism. Future nutrient metabolism studies on other fruit and vegetable ingredients should be carried out to optimise the possible advantages of plants and the availability of nutrients as dietary supplements or food containing beneficial nutrients in the human intestine. The research should take place in the future as well.. Various food components can add to the overall health value.

Precise avoidance of food consumption is still difficult and cost efficient fruit and vegetable estimating methods are crucial to confirm the fruit and vegetable relationship. The proof from the study helps to reduce fruit use, the prevalence and mortality due to the chronical conditions such as obesity, multiple carcinomas such as cardiovascular diseases. To the correlation of these disagreements. The wide availability in the world of fruit and vegetables provides a better scope for reducing diseases and disorders through daily consumption according to the prescribed dietary schedule and availability in the vicinity of population.

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