

How Food and Lifestyle of the global population change?

The human race evolved on the equator, the region of planet earth, where the intensity and bioenergy of the sunlight are the strongest. As the humans moved away from the equator to higher latitudes where the sunshine became less intense; the color of the skin became lighter (less of the dark pigment melanin in the skin), and the eye pigment becomes lighter. That allowed the migrating human, a capacity to absorb maximum energy of the sunlight. The preindustrial humans lived close to nature, mostly in an outdoor setting, being in close harmony with the sunlight/ daylight. Since there was no artificial light, they fed, fasted, slept, woke up, moved about according the circadian rhythms -the 24-hour daylight and night cues (signals). In the past, over 100 years, the human world has gone through four significant revolutions – Industrial, Agricultural, Economic, and Digital. These have moved humans away from their most important source of the bioenergy –The Sun, drastically affecting their food and lifestyle:

- **Industrial Revolution** – This revolution gave the humans an indoor works environment and added to it the nighttime work hours made possible by artificial light. Additionally, this revolution lured humans to the mass-produced nutrient-deficient commercial foods lavish in disease-producing elements - refined white sugar, refined milled wheat flour, hydrogenated commercially refined cooking oils, and highly refined salt.
- **Agricultural Revolution** – Chemical fertilizers, pesticides, chemical preservatives, and genetic modification of crops to enhance the crop yield for feeding the growing world population. Bumper crops are low in the nutritional value and carry additional risk of chemical contamination. Fortunately, public awareness is bringing about the global organic movement in agriculture to sustain soil health as well as human health.
- **Economic and the digital revolution** –These two most recent revolutions have had the most significant negative impact on human health by influencing the three essential survival behaviors of eating, sleeping, and activity. The current food and lifestyle diseases have affected primarily the urban city dwellers, who have lost touch with the basic principles of healthy living, such as:
 - **What to eat** – City dwellers have moved away from holistic nurturing plant-based foods grown under the bioenergy of the sun - vegetables, fruits, whole or coarsely ground grains with husk and endosperm, nuts and seeds, lentils and legumes, and cold compressed unrefined oils such as Coconut, Mustard, Sesame oil. Each nutrient has its unique function, and one cannot replace a particular nutrient for another. A good example is modern diet fads such as- a low carb/high fat Keto or a reduced carb/high protein diet plans and so on. All these plans eventually fail after a few weeks or months because these are attempting to replace one major nutrient for another.

- **What not to eat** – City dwellers frequently consume processed, synthetic pre-prepared boxed, packaged foods, and pre-cooked fast foods. These are zero in nutrients, and rich in disease-producing refined white sugar, refined wheat flour products, refined salt, trans-fats, and hydrogenated oils (the four white food poisons).

When to eat – Daylight hours are for eating and dark hours of the night for the Rest, Repair and Rejuvenate. That has been pre-determined by our brain circadian 24-hour clock. This natural clock controls all the activities of the body -digestion and digestive enzymes, metabolism, hormones, sleep, and activity cycles. During daylight hours, the body stays programmed for higher physical activity and a high energy production capacity to match it. Glucose is the fuel for energy, and Insulin is the hormone which helps transport glucose into the cells for energy synthesis. The body remains sensitive to Insulin during daylight hours to boost energy production. At night the body is in the rest and repair mode with minimal energy needs. During the dark hours, the body shifts gears, and Insulin converts glucose into reserve energy fat for later use. The stored fat gets used when the glucose from the food is unavailable. Late-night eating after 8 PM will invariably lead to fat storage and obesity, even if one eats a holistic, healthy meal.

- **How often to eat** – A meal of any size small (including snacks) or big, provides 2-3 hours with of glucose supply in the body for energy. After this time, the body has to fall back on its reserve energy stores (glycogen and fat in the liver, muscle, abdomen, and under the skin). Eating every 2-3 hours creates a vicious cycle of a constant stream of glucose coming from the digestive tract. That takes away from the benefit of using up the stored fat. Maximizing use of the stored fat energy requires a separation of 12-14 hours between the night meal and next morning meal and 5-7 hours between the day meals. Thinking back in time 50 years, this is precisely how our grandparents were eating their meals. One of the big problems with eating every 2-3 hours is that the quality of food suffers. Typically, meals consumed every 2-3 hours end up being unhealthy ready to eat processed snacks. Scientific research shows that increasing the meal frequency does not result in weight loss as has been recommended by widely practiced low- calorie diet programs. (*Cameron JD et al.; British Journal of Nutrition; 2010*).
- **When to sleep and when to wake up** – Lack of exposure to sunlight or bright daylight in the morning hours reduces the synthesis of the sleep hormone melatonin in the brain. Additionally, exposure to bright artificial light and blue light from digital appliances diminishes the release of melatonin at night. Lack of deep rejuvenating sleep leads to stress, overeating at night, obesity, Type 2 diabetes, and cancer. New medical research is showing that the sleep hormone melatonin plays a vital role in prevention, control, and spread of cancer. The sleep also gets

disrupted by late-night eating. The intestines slow down at night after 10 PM, so late-night dining leads to acid reflux and indigestion.

- **Exercise and activity** – Muscles use up to 70-80% of the glucose consumed in a day. Lack of muscle activity means more of unused glucose in the blood for making reserve energy fat leading to obesity.
- **Preparation of foods** – The body has a perfect mechanism to defend and repair itself from the disease provided it gets the nutrients it needs. The foods with the highest nutrient value are the holistic foods which grow under the energy of the sun. However, the nutrients in holistic natural foods can get destroyed because of several reasons:
 - i. Processing and refining of the naturally grown produce in the factories – Good examples are refined wheat and grain flours, white sugars, and hydrogenated vegetable and seed oils.
 - ii. Commercialization of foods – Ready to eat foods sold in packages and pre-prepared in the fast-food chains are cooked at high temperatures, in unhealthy oils and are rich in refined sugar and salt. These are devoid of life-sustaining nutrients and are significant contributors to the epidemic of obesity and Type2 diabetes amongst the urban city dwellers.
 - iii. Prolonged storage of natural foods such as fruits, vegetables – Longer the time between harvesting and consumption or between the cooking and eating, lower the nutritional value of food. Storage also adds to the risk of chemical preservation. Pre-cooked and pre-prepared fast meals are the primary cause of unhealthy chemical burden on the body. It is more sensible to eat seasonal locally grown fruits and vegetables rather than imported items which get preserved for weeks and months. Similarly, eat freshly prepared food and not preserved foods which have lost the nutritional value over time.

“For the city dwellers, the food has a chance of being contaminated from the soil to the plate. Eating smart, therefore, requires knowledge and diligence”.