

Nutrition and Eating Disorders 2019: Changes in sleep, non-exercise activity thermogenesis and food trend and its effect on health and longevity: A review - Abhishek Dhawan - Feelsofts

Dr. Abhishek Dhawan

Founder and CEO, Feelsofts, India E-mail: abhishek27099@gmail.com

Abstract:

Modern day lifestyle trend has been severe cause to many health issues and resulting in cardiovascular diseases, obesity, endocrine related disease and many others. Today people are familiarizing healthy way of life like engaging in improved food patterns, work styles and physical activity, but still the longevity is in lower range in many countries. We made a works review from different data accessible on sleep time and habits, food pattern and food trend to discuss the suggestive effect on factors like cortisol, non-exercise activity thermogenesis (NEAT), obesity, telomere, cardiovascular factors, change in circadian rhythm and others that cause increased mortality rate and decreased health index with compared to earlier century lifestyle. Increased consumption of processed food and sugar sweetened beverages resulted in high empty calorific consumption than RDA and resulting telomere shortening and obesity which may lead to early aging, weakened immunity and mortality. Lower NEAT affects the obesity as well as overrides the benefits of exercise. Thus signifying reduced health index and may be reason of reduced longevity associated to earliest life styles.

Keywords: Non-exercise activity Thermogenesis, Glymphatic system, Food trends, Circadian rhythm, Telomere, Cortisol, Obesity.

Introduction: Longevity is an important aspect of healthy living. Food, sleep and exercise are three most important parameters of a human body that decide the longevity or healthy life span. Today people are adapting healthy lifestyle like engaging in physical activity, improved food patterns, and work styles but still the longevity is in lower home in many countries. People are engaged in comfort sleeping products and devices for good sleep. There is much awareness about exercise and nutrition. But still the rate of mortality is not much difference with respect to non-effluent factors compared to earlier centuries. There has been susceptible change in modern day immune system decline and increased obesity than earlier centuries even though there are high personal regimes of food and exercise are maintained. In this study we tried to summarize and analyze the available literature and predict the changes that could be affected by the modern day life style and trend.

A. Non-Exercise Activity Thermogenesis: Physical activity is an important aspect to health. Physical activity ranges from aerobic activity to non-exercise activity thermogenesis (NEAT). Whenever the physical activity is indulged, it results in changes in many parameters including cardiac output, calorie burn, muscle hypertrophy, etc. depending upon type of physical activity. In current scenario we will classify physical activity in two types: Self-induced and NEAT. Self-induced activity can be running, working out, doing aerobic activity etc. non-exercise activity thermogenesis (NEAT) is that the energy expended for everything we do this is all activities excluding sleep and exercise.

Observations:

A. Sleep: Sleep is the important aspect of health. Most of the important functions like memory consolidation, waste clearance, etc.

happen during sleep. The hypothalamus, a peanut-sized structure deep inside the brain, contains groups of nerve cells that act as control centers affecting sleep and arousal. Within the hypothalamus is that the suprachiasmatic nucleus (SCN) – clusters of thousands of cells that receive information about light exposure directly from the eyes and control your behavioral rhythm. The pineal body, located within the brain's two hemispheres, receives signals from the SCN and increases production of the hormone melatonin, which helps put you to sleep once the lights go down. Sleep and impaired cortisol control and obesity: Cortisol is a steroid hormone that regulates a wide range of vital processes throughout the body, including metabolism and the immune response. The secretion of cortisol is especially controlled by three inter-communicating regions of the body; the hypothalamus within the brain, the pituitary and therefore the adrenal. This is called the hypothalamic–pituitary–adrenal axis.

B. Food Trends: The food is major aspect of health and longevity. Food has direct impact on structure, endocrine and metabolic aspects. According to total and free sugar content of pre-packaged foods and non-alcoholic beverages in Slovenia, cross sectional study aimed at assessing free sugar content for 10,674 pre-packaged food items available from major Slovenian food stores during data collection in 2015, Together, 52.6% of all analyzed products contained free sugar, which accounted for a mean of 57.5% of the entire sugar content.

C. Effect of SSB on Telomeres and Aging: A telomere is a region of repetitive nucleotide sequences at each end of a chromosome, which protects the end of the chromosome in a cell from deterioration or from fusion with neighboring chromosomes. They contain an equivalent sequence of bases repeated over and over. Finally all these suppressive factors may contribute to aging and low longevity. Another factor contributing to telomere shortening is oxidative stress. SSB's increase oxidative stress as well. The above literature and telomere research may be indicative in suggesting that in earlier time due to low consumption of SSB's can be one of the factors that supported stronger immune system and healthy as well as long-life.

D. Effect of UPF Obesity: As per they literature on the consumption of UPF, there is subsequent increase in UPF consumption and declined in micronutrient aspect. This is one of the major cause in increasing obesity and cardiovascular diseases.

Discussion: From the above literature analysis it's mostly co-relatable that the increased mortality and alter in trends of sleep, food and activity may have an immediate connection as compared to earlier centuries. Even when there was less consciousness and feast about health, their natural associated with nature life and through the day active life style maintained permanence. Thus signifying reduced health index and may be reason of reduced longevity associated to earliest life styles.

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