

Food warms the soul, but how much is too much?

Abstract

In Western society, inadequate voluntary dietary satiety control, also indicated as satiety suppression during holiday and festive celebratory events, combined with ongoing poor daily dietary choices and continued caloric imbalance may contribute to a premature onset of the pathophysiologic changes often associated with aging and obesity, including metabolic syndrome. These nutritional factors are likely contributors to the growing trend of an increased prevalence of obesity and its pathophysiologic sequelae and culminating in decreased potential for attaining our optimal longevity. In some relatively remote cultures, however, where local populations consume predominately local foods high in nutritional content, in line with their actual caloric and nutritional requirements for a healthy lifestyle, many often survive to or beyond their 100th birthday and thus represent some of the greatest examples of longevity on the planet. The metabolic and pathophysiologic benefits of voluntary appetite control and satiety suppression in concert with a healthy lifestyle likely result in a greater individual potential to attain the optimal longevity conferred by our ancestral rights and origins.

Overview:

In much of Westernized society, the prevalence of obesity and its pathophysiologic sequelae have reached and alarming prevalence, and epidemiologic statistics indicate an increase in premature death and a decrease in projected life span for the first time in hundreds of years.¹⁻⁴ Some quasi-remote island populations appear to enjoy the greatest longevity however and those who live the longest report that they voluntarily stop eating when 80% full, and often live to 100 years or more as a perceived reward for their dietary control.⁵ This voluntary satiety suppression induced via appetite control measures likely benefits metabolism, such that intestinal absorption and assimilation of essential micronutrients and macronutrients can become optimized, while sparing undue stress on adverse pathophysiologic metabolic processes that likely occur while attempting to adjust to caloric over nutrition.

Keywords: food, obesity, over nutrition, satiety suppression, cultural norms

Volume 13 Issue 2 - 2023

Orien L Tulp

College of Medicine and Graduate Studies, University of Science Arts and Technology, Montserrat, BWI

Correspondence: Orien L Tulp, College of Medicine and Graduate Studies, University of Science Arts and Technology, Montserrat, BWI, Email o.tul@usat.edu

Received: March 30, 2023 | **Published:** April 14, 2023

Introduction

It has often been said by many generations that ‘food warms the soul’. However, with the alarming increase in the global prevalence of obesity now approaching epidemic proportions, perhaps we have inadvertently gone a bit overboard on that long held philosophy.^{1,2} Food clearly plays an important role in many cultures, where it contributes to communication and socialization, in addition to acculturation and psychological adjustment during some of life’s most memorable tragic or exhilarating events including marriages, the welcoming of a new member into the family, public events and celebrations, and even the sadness that may occur with the parting of a dearly beloved family member who has departed to pass through those pearly gates of the beyond.⁶ So, it seems indisputable that food remains at the top of the list of entities that help to warm the soul, and create good feelings and a renewed outlook on life itself. Moreover, our ancestors and forefathers likely were likely not incorrect in fostering such a welcoming statement as the interaction between food and socialization extends back for many generations. However, considering the state of the global nutrition impact on a burgeoning prevalence of overweight and obesity, we must now ask ourselves, how much is too much and how can we modify that welcoming tidbit to better suit our metabolism? Are we ultimately destined to view celery sticks and fat and sugar substitutes as the new totality of our emerging horizon? Where might we look to find a solution to this global dilemma?

We now have ample scientific evidence that eating certain kinds of foods and delicacies can bring about modest increases in our

metabolism via a mechanism known as diet induced thermogenesis, which occurs mostly in brown adipose tissue (Brown Fat) and other peripheral tissues.⁷⁻¹⁰ Seemingly all too often, however many of those excess calories seem to evade their only means of escape in those thermogenic tissues, only to sneakily find their way into our white adipose tissue (WAT) depots conveniently located around our waistline among other potentially more risky locations with regard to our overall health and wellbeing.² We also know that caffeine can assist in activating one’s brown fat, but really, is it plausible that a cup or two of morning or afternoon Joe or other caffeinated beverages could be enough to adequately excite our thermogenic tissues so that they can spring into action when caloric duty calls.¹¹⁻¹⁴ Coffee may well help to activate your brown fat, but will it be enough to neutralize the morning pastries, the munchies, or the lunchtime or late afternoon desserts?? Maybe not. We do know that adiposity and obesity bring insulin resistance, and that adds an additional impediment to triggering diet induced thermogenesis, in addition to additional pathophysiologic sequelae.¹⁰

It has recently been reported that during the past decade, that a burgeoning incidence of obesity and overweight conditions have developed, and the life expectancy for both males and females in Western cultures have decreased for the first time in a century or more.¹⁻⁵ However, the trend has not impacted all cultures to the same extent. In the quasi-remote volcanic Japanese island of Okinawa for example the projected life span often exceeds 100 years, and their culture reportedly boasts the greatest longevity on the planet.⁵ The scientific basis for their long held successful longevity remains unclear, but likely includes factors linked both to inheriting favorable

ancestral genetics in addition to moderation in their daily caloric intake in the present life. Celebratory events may still continue to represent and contribute an important aspect of their culture, but their day-to-day caloric restraint, in addition to typical nutrient rich food choices including freshly caught fish and local root vegetables comprise a large proportion of their diet and this may have attenuated or delayed the progression of numerous nutritionally- and age-related illnesses and are likely a vital element in their key to longevity.

Japan consists of a chain of volcanic islands, and has experienced hundreds of volcanic eruptions from many of its 100 or more volcanos throughout its islands over the past 1300 years.¹⁵ and recent studies indicate that such volcanic activity confers the transfer of abundant sources of nutritionally essential minerals from deep underground deposits to the surrounding soils, thereby acting as 'nature's fertilizer' and enhancing the vitality and nutritive value of agricultural produce and other vegetative, edible growths.¹⁶ In minimally industrialized societies, especially in uneven or hilly terrain, much of the agricultural produce is generated without the advent of the most modern agro-industrial farm machinery, and one's daily exercise regimen during their daily chores would typically include lots of walking and work related exercise. Accordingly, there would seldom seem a need to consider the necessity to add a gym or other exercise equipment to add to their daily routine, in order to provide a more favorable balance between daily energy and nutrient intake and daily energy expenditure. In such an environment, excess calories are less likely to find their way into those unsightly fatty depots or to other tissues where unhealthy pathophysiologic processes may be at the wait. Excess adiposity has long been associated with chronic low grade systemic inflammation, a likely contributor to the pathophysiologic changes associated with metabolic disorders and to a shortened potential for ones' genetic potential to attain their optimal longevity.¹⁷

On the Southern Japanese island of Okinawa, the local population is remarkable with respect to longevity, with a historic 40% chance of living past 100 than other Japanese people, and have long enjoyed the reputation as ranking among the greatest longevity on the planet for many generations.⁵ Medical experts have attributed their great longevity to a healthy combination of a nutritious diet, regular exercise and the support of a close-knit family and broader sense of community than occurs in much of Westernized society. With an influx toward a more Westernized diet and lifestyle since greater diversification in population dynamics evolving after World War II, however, the past four decades have seen a decreased in expected longevity of nearly 4 years for males and 3 years for Okinawan men and women, respectively.¹¹ Previously, Islanders who lived the longest reported that they stop eating when they believe that they sense that their satiety signals indicate that they are about 80% full, thereby intentionally curbing excess appetite, while ingesting adequate nutrition due to the high nutritional index and preferences of their regular dietary sources. Poor nutritional status was uncommon and many island residents often lived to 100 years or more with this regimen and lifestyle. This likely benefited their metabolism, such that intestinal absorption and assimilation of essential micronutrients and macronutrients might become optimized, while sparing undue stress on adverse metabolic processes while attempting to adjust to untoward, adverse metabolic effects of caloric overload or over nutrition, in addition to the social stress of westernized lifestyles. Following WW II, the influx of foreign influences, ranging from easy access to fast food to less exercise, and the stresses of modern lifestyle, as well as a loss of the traditional sense of 'ikigai' among younger generations, a long held Japanese philosophy and concept that translates into a person's reason for

being, and which can help to bring about joy and satisfaction in life. If Westernization of their youthful lifestyle is the fault of the decreased longevity, it may be time to look back on what worked in the past in order to regain the ancestral longevity of their culture and to recover the longevity of their forefathers.

Conclusion

In conclusion, there likely aren't enough treadmills on the planet to burn away the entirety of those excess calories left over from holiday, ceremonial, and everyday eating. So, we must ask, is it time to wave farewell to the socially accepted and time-honored traditions that food contributes to our culture? It probably will be a while before we wave that one farewell in this lifetime. However, as for the many entities we may encounter in life, celebratory or otherwise, moderation in all things caloric is the likely key to success. The holiday and ceremonial events were here as part of our collective cultures long before we arrived, and in all likelihood will still be here and remain as a significant presence in our collective life experiences long after we depart for the greener pastures that eventually await us all.

Acknowledgments

The author wished to thank the administration of the University of Science Arts and Technology, Montserrat for the resources to complete this research.

Conflicts of interest

The author declares that there is no conflicts of interest.

Funding

None.

References

1. Bulletin of the world health organization, overweight and obesity. 2021.
2. Aguilar M, Bhuket T, Torres S, et al. Prevalence of the metabolic syndrome in the United States, 2003–2012. *JAMA*. 2015;313(19):1973–1974.
3. National center for health statistics. Life expectancy in the U.S. dropped for the second year in a row in 2021. *Centres for Disease Control and Prevention*. 2022
4. Ellis R. COVID caused 4.6-year drop in NYC life expectancy. 2023.
5. <https://dw.com/en/japan>. In focus: what's behind Japan's failing life expectancy?
6. Le CB. What food tells us about culture. *Freely Magazine*. 2017;103.
7. Rothwell NJ, Stock M. A role for brown adipose tissue in diet induced thermogenesis. *Obes Res*. 1997;5(6):650–656.
8. Cannon B, Nedergaard J. Brown adipose tissue: function and physiological significance. *Physiol Rev*. 2004;84(1):277–359.
9. Himms Hagen J. Role of thermogenesis in brown adipose tissue in regulating energy expenditure. In: the adipocyte and obesity: cellular and molecular mechanisms (A. Angel, Ed.) *New York Raven Press*. 1983;259–270.
10. Tulp OL. Does insulin resistance and adipokine actions contribute to the naturally occurring 'unbrowning' or beigeing of brown adipose tissue in obese and obese-diabetic rats? *Academia Biology*. 2023;1(1):1–6.
11. Van Schaik L, Kettle C, Green R, et al. Effects of caffeine on brown adipose tissue thermogenesis and metabolic homeostasis: A Review. *Front Neurosci*. 2021;15:621356.

12. Tulp OL. Can caffeine activate your brown fat? Effects of caffeine, ephedrine, and norepinephrine on nonshivering thermogenesis in congenic lean and obese LA/Ntul/-cp rats. *Adv Obes Weight Manag Control*. 2023;13(1):1–6.
13. Boozer CN, Daly PA, Homel P, et al. Herbal ephedra/caffeine for weight loss: a 6-month randomized safety and efficacy trial. *Int J Obes Relat Metab Disord*. 2002;26(5):593–604.
14. Tulp OL, Einstein GP, Rizvi AAA. Can caffeine, ephedrine and norepinephrine activate your brown fat? an experimental study on the groups of lean and obese LA/Ntul/-cp Rats. *Current Overview on Pharmaceutical Science*. 2023;8:162–180.
15. Fujita E, Ueda H, Nakada S. A new Japan volcanological database. *Front Earth Sci*. 2020;8.
16. Tulp OL, Sainvil F, Branly R, et al. Micronutrient mineral and nutrient content of volcanic soils and creeks from the montserrat soufriere hills volcano. Nature's fertilizer: mineral nutrient content of volcanic soils. *European Journal of Applied Sciences*. 2023;11(2):143–156.
17. Tulp OL, Einstein GP. Contributions of visceral obesity and elevated BMI as risk factors for covid-19 illness. *Adv Obes Weight Manag Control*. 2022;12(2):57–61.