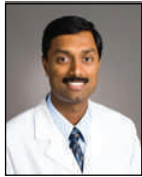


Perspective Article

Food as the Accelerator and the Brake of Human Progress

Anand C*

*Associate Professor of Clinical Medicine, Division of Cardiovascular Medicine, University of Missouri, Columbia.



Anand Chockalingam is an Associate professor of Medicine at the University of Missouri- Columbia since 2006. His major emphasis is cardiomyopathy, mental stress and holistic interventions with over 60 original publications. He gives invited lectures on stress cardiomyopathy and heart failure at several international conferences and cardiac centers world over. He regularly features in local TV, radio and print media to increase awareness about heart health. He has pioneered a unique 'Heartful Living' cardiac wellness program both in the US and India for improving health through deeper self-realization. Physician wellness, developing tailored programs to overcome the physician burnout, has gained him national recognition as he currently works with American College of Cardiology to develop resilience tools for doctors.

Corresponding author - Dr. Anand Chockalingam (chockalingama@health.missouri.edu)

Chettinad Health City Medical Journal 2019; 8(1): 2 - 4

God comes to the hungry in the form of food - MK Gandhi

Stay hungry; stay foolish -Steve Jobs, Apple

Introduction

Cardiovascular disease (CVD) is the biggest killer and now accounts for over a third of all deaths worldwide. Developing countries like India are simultaneously dealing with poverty related malnutrition and the obesity epidemic related CVD. Chronic diseases like CVD, cancer, obesity, diabetes, arthritis and dementia are increasing 5% annually and cost over \$3 trillion healthcare dollars in the US alone. While there are several reasons for these 'new' challenges plaguing modern society, the first place to look for a real solution may very well be our diet.

"Healthy" Diets

Scientific literature offers conflicting solutions which oftentimes appears to contradict itself. Physicians are not trained formally in nutrition yet have to guide patients' diet to overcome illness and achieve long-term health. DASH (Dietary Approaches to Stop Hypertension) and Mediterranean diets appear to improve CVD and mortality. Vegan and plant-based food is gaining popularity to deal with all chronic diseases. Leading research institutes promote the Keto diet, featuring low carbohydrates, to control diabetes and obesity. The developing world continues to embrace western fast food culture. With increasing pace of life and urbanization, processed food consumption is increasing. Overall calorie and meat consumption has significantly increased over the last few decades. Is alcohol healthy? Are we naturally designed to consume meat? Is dairy inflammatory? How do we make sense of all the challenges and conflicting evidence to optimize our nutrition?

Food was accelerator for our growth for 200K years

Our ancestors for millions of years lived on a primarily vegetarian diet composed of fruits, nuts and leaves. The earliest evidence for mankind dates back to about 200,000 years. Food, or more precisely hunger, fueled

human innovation and growth. We ascended to the top of the food pyramid rapidly despite not being the strongest or the fastest.

This accelerated dominance came about because of our superior intelligence allowing us to employ novel weapons to hunt effectively in groups with newly acquired control over fire. Importantly, just like the rest of the animal kingdom, throughout most of our history, we still expended a lot of physical energy acquiring enough food for self-sustenance and to provide for young ones.¹ Average male likely walked and ran 10-20 km daily as hunter gatherer while women covered about half that distance- the primary motive being to acquire food. Meat could be cooked with fire now and this allowed us to expand beyond the warmth of Africa. Human population began thriving in hostile climates and spread across the entire world. Chronic diseases were rare and contrary to what we may think, adult life expectancy was probably over 70 years!

Food allowed civilization

Agriculture allowed us to gain more control and resilience from natural forces and weather related calamities. Over the last 10,000 years of growing rice, wheat and corn we have changed the entire face of the earth irreversibly.² Human populations began to live in increasingly larger cities where language, art, culture and recreational sport flourished. Man increasingly specialized and success became determined by intellectual pursuit. The high society enjoyed abundance of food and wealth whereas the majority remained poor and hungry, working physically in the fields or serving in the cities. Acute infections and illness from unhygienic living conditions increased as did the fields of medicine and philosophy.

Food is now the Brake

In the last 200 years, human ingenuity has revolutionized life once again! In 1800AD, about 85% of mankind worldwide was in extreme poverty earning less than

\$2/day. It took over 150 years until 1966 for this to drop below 50%. Thanks to the increasing cumulative gains of science, and real progress within the last 50 years, by 2017 extreme poverty dropped to 9% and soon we will eradicate extreme poverty altogether. The world is shrinking - with humans traveling more, connecting easier, trading across far corners and eagerly embracing the ways of the affluent West. Unfortunately, indigenous cultures are disappearing with traditions being lost, languages forgotten and ethnic foods abandoned in this frenzy of globalization. The modern Western diet, aptly called the standard American diet (SAD) is high on red meat, processed meat, pre-packaged foods, fried foods, high-fat dairy products, eggs, refined grains, high-fructose corn syrup and high-sugar drinks. Every aspect of this diet may contribute to the US leading the worldwide obesity epidemic with already over a 1/3 of the population being obese. Hunger for food is no longer driving human innovation and growth. After the millions of years of our evolution driven by hunger, for the first time food surplus has arisen to threaten humanity!

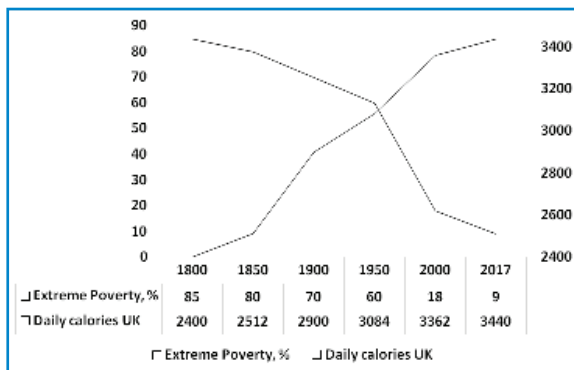


Table 1. Graphs the dramatic decline in extreme poverty over the last 200 years from 85% down to < 9% now along with per capita calorie intake using UK as example where a 1000 calorie/day increase is seen in the same time period.

Tips for eating healthy - therapeutic window

We are ultimately what we eat and studies show that within months people give up on 'diets' returning to old eating habits and regaining all the weight back as well. We have been emphasizing the crucial role of diet in preventing and curing chronic diseases, regaining

health and dealing with CVD through our 'Heartful Living' self-realization based cardiac wellness initiative. We emphasize mindfulness methods for eating healthy and dealing with stress and anxiety.

We encourage a DASH or Mediterranean style diet high in fruits, vegetables, nuts and whole grains. We discourage red meat, processed meat, sugar added snacks, beverages and soda. Okinawa in Japan, recognized for its many healthy hundred year olds, reminds us the value of being hungry- by eating only unto 80% full.³ Within the last few years, we have started encouraging intermittent fasting- consuming only water without any food/drinks with calories- for 16-24 hour periods every week. This may have several benefits in addressing chronic illnesses especially insulin resistance and obesity.

Regaining health eating right

Lets face it- food slows us down. We avoid sports, any form of exercise, even mentally challenging tasks after a heavy meal. Industry makes money off us by advertising 'fun' drinks and 'festive' snacks, with gullible humans having 6 instead of 2-3 meals a day and paying with our health for the ever increasing daily calorie consumption. Religions across the world encourage fasting for spiritual growth. Hunger brings us energy, sharpens our mind and stimulates our creativity. Our ancestors were constantly faced with starvation, and hunger has formed the very basis for all our progress. Despite our population exploding, science has for the first time ensured that our generation will have sufficient food globally. The body can thrive on a diverse diet that may have been dictated by geographic and cultural reasons. We have attempted to shift the focus away from "which type of diet is healthy?" and highlight the crucial importance of moderation and self-control.

Fasting is trying to postpone the next meal while the food is at hand - it is humbling and gratifying experience - healthy for the body, energy for the creative mind and strength for the spirit! We now have to avoid the temptation of using food for 'comfort,' to deal with psychological stresses; we have to seek the really nutritious real whole foods suited for our biological needs instead of the addictive 'fast foods' and 'cultural meats'. By avoiding snacks and sweet beverages, we limit calories that bypass natural mechanisms of satiety. Most importantly, by choosing to stay hungry for longer periods each day, we choose to live truly like our bodies were designed to be hungry, to be fully alive in the constant quest to be our very best.

Tips for eating healthy

Celebrate food - don't take it for granted- relish it with gratitude
Eat slow- take time to chew, pause before each bite, each meal should take > 20 minutes
Plant based whole food diet may offer the best health benefits- this is our diet from pre-historic times ⁴
Whole grain bread, brown rice and quinoa instead of white rice and white bread
Reduce processed meats and red meat consumption to once a month
Completely avoid snacking between meals- nuts and fruits are key parts of each meal
Absolutely avoid sugar added drinks (Gatorade, Powerade, cola products and soda)
Feeling 'hungry' is natural and does not need food/snack/drink to 'fix' it right away! Cultures where people don't fill stomach, stopping when 80% full, may live longer! ³
Hunger is a vital sign of good health. It is initially unpleasant, but it is fine to remain hungry for several hours; drinking 1-2 glasses of water if hungry between meals helps.

Avoid 'Keto diets'! Natural ketosis occurs by metabolizing our fat reserves when we are fasting longer than 16 hours. This rejuvenates our mind
Intermittent fasting - with only water for 18- 24 hours, weekly 1-2 times - may be very effective, especially in controlling diabetes and obesity without medications. Starving is searching for food uncertain of success- it induces stress and anxiety. Fasting is trying to postpone the next meal while the food is at hand- it is humbling and gratifying experience- healthy for the body, energy for the creative mind and strength for the spirit!
'Fasted cardio' & 'fasted resistance training' involve various exercises after fasting for over 12-20 hours. Ensure adequate water intake. This directly burns fat for energy requirements, is safe when started slowly and may offer the most efficient way to tackle obesity, metabolic syndrome and diabetes. ^{5,6}
Sample diets: 1. After dinner at 6pm, don't have any food overnight. Have 1-2 glasses of water on waking up. Engage in all routine activities, work and stay busy all day long. Try drinking 1-2 glasses of water when hungry.
After work, have healthy dinner starting with fruits, enjoying over 30 minutes your favorite home-cooked dishes. First few times are the hardest! You have now mastered the weekly '24 hour fast'!
2. After dinner at 6pm, don't have any food overnight. Have 1-2 glasses of water on waking up. Exercise by walk/run/workout starting at 8am. You have done a '14-hour fasted cardio' where energy comes from the body's fat reserves! Have a protein rich breakfast at 9.30 am, lunch at 1pm and dinner again 6pm.
These methods will get to a healthy weight! 'Healthy' waist circumference for Indian Men <35 inches, women <32 inches. ^{7,8}

திருக்குறள் 944 / Thirukkural 944:

அற்றது அறிந்து கடைப்பிடித்து மாறல்ல
துயக்க துவரப் பசித்து.

முன் உண்ட உணவு செறித்த தன்மையை அறிந்து மாறுபாடில்லாத உணவுகளைக்
கடைப்பிடித்து அவற்றையும் பசித்த பிறகு உண்ணவேண்டும்.

Recognize how well the last meal agreed with your body, identify foods that are nutritious and suitable for your health and have the next meal only when you are hungry again.

References

- 1) Pontzer H, Wood BM and Raichlen DA. Hunter-gatherers as models in public health. *Obes Rev.* 2018; 19(1): 24-35.
- 2) Thrall PH, Bever JD and Burdon JJ. Evolutionary change in agriculture: the past, present and future. *Evol Appl.* 2010; 3: 405-8.
- 3) Mishra BN. Secret of eternal youth; teaching from the centenarian hot spots ("blue zones"). *Indian J Community Med.* 2009; 34 (4): 273-5.
- 4) Crittenden AN and Schnorr SL. Current views on hunter-gatherer nutrition and the evolution of the human diet. *Am J Phys Anthropol.* 2017; 162(63): 84-109.
- 5) Aird TP, Davies RW and Carson BP. Effects of fasted vs fed-state exercise on performance and post-exercise metabolism: A systematic review and meta-analysis. *Scand J Med Sci Sports.* 2018; 28 (5): 1476-93.
- 6) Vieira AF, Costa RR, Macedo RC, Coconcelli L and Kruegel LF. Effects of aerobic exercise performed in fasted v. fed state on fat and carbohydrate metabolism in adults: a systematic review and meta-analysis. *Br J Nutr.* 2016; 116 (7) : 1153-64.
- 7) Misra A, Vikram NK, Gupta R, Pandey RM, Wasir JS and Gupta VP. Waist circumference cutoff points and action levels for Asian Indians for identification of abdominal obesity. *Int J Obes (Lond).* 2006; 30 (1) : 106-11.
- 8) Behl S and Misra A. Management of obesity in adult Asian Indians. *Indian Heart J.* 2017; 69 (4): 539-44.