ECRONICON OPEN ACCESS

EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM

Review Article

The Perfect Storm-Longevity, Obesity, Lifestyle and the Planet

Avram M Cooperman*, Lillian B Wagner and Griffin Cooper

Emeritus Surgeon, The Pancreas and Biliary Center, NY, USA

***Corresponding Author:** Avram M Cooperman, Emeritus Surgeon, The Pancreas and Biliary Center, NY, USA.

Received: June 05, 2022; **Published:** September 28, 2022

Abstract

A perfect storm, adapted from a tragic 1991 storm characterizes the ongoing pandemic that adversely affects human health, behavior and concerns of extinction. Animals, the planet, climate, the oceans, atmosphere and environment are victims of our transgressions. Needed are selfless leaders and populations open to behavioral change, to limit and avoid the dire events. The pandemic needs to be addressed and modified by behavioral and lifestyle changes.

Keywords: *Longevity; Obesity; Lifestyle; Planet*

Foreward

This article was completed during the unprovoked Russian assault and destruction of Ukraine, and the mass killing of nineteen children and 2 teachers in Uvalde, Texas, the 213th mass shooting (4 or more victims) in the US this year [1]. We commiserate with the victims and families. We are confused and upset that leaders cannot find or enact solutions to senseless wars and mass shootings. Eighty years ago another despot brutalized Europe and tried to eliminate innocent ethnic groups. Resolution of senseless violence and the Ukraine crisis is overdue.

Introduction

On October 30, 1991 an improbable mega-storm struck the North Atlantic Ocean, New England and the east coast of Canada, creating large wind forces, waves, and havoc. Losses were great and included the Andrea Gail, a fishing boat and its 6 person crew [2]. The tragedy was detailed by Sebastian Junger in The Perfect Storm, a popular novel and film. Since then, the term "Perfect Storm" connotes a perfectly awful event where all has gone awry.

A perfect storm accurately and aptly applies today when health, lifespan, climate, peace, the planet and its resources are in peril.

Healthcare

The US has ample health care facilities, expertise, and resources. Yet among the 11 leading industrial nations the US is ranked last in health care, and in 9 of its ten determinate categories [3]. Less than 3% of Americans live a healthy lifestyle [4]. The US has the highest infant mortality, the lowest life expectancy, the highest rates of chronic disease, suicide, maternal mortality, preventable hospital admissions and deaths (20 - 40%) [3-9]. The US spends more than every country on health, 4 trillion dollars in 2020. Half is from the government, $1.3 trillion is from private health insurance and $405 billion from patients. Yet the staggering sums have not improved health or lifespan in the US which has declined from 78.8 to 77 years (excluding Covid) the past 2 years while increasing almost everywhere [5].

Aging, like many illnesses, can be blunted and delayed [10]. Four chronic diseases cause 80% of deaths in the US and developed world [11]. They are cardiovascular, diabetes, obesity, and cancer. 30 - 70% of cancers are lifestyle related while diabetes, obesity, and cardiovascular disease can be prevented, reversed or stabilized with a healthy lifestyle [11-14].

Obesity

Obesity is a chronic worldwide pandemic for children and adults [15,16]. In 2020, 39% or 6 billion people were overweight and 600 million were obese [16-21]. Expressed as Body Mass Index (BMI), obesity is determined by dividing weight (kg) by height (m) squared, BMI=kg/m^2. A BMI less than 25 is normal, 25 - 30 is overweight and > 30 is obese. In the US and Europe almost half of adults are overweight and 1/3 are obese. BMI may be less accurate in muscular individuals and some populations. Radioisotopes and cross-sectional imaging may differ and be higher than BMI, in the same individuals [22].

After smoking, war and terrorism, obesity is the worlds third highest medical expense, $2 trillion annually. Once a disease of affluence, obesity is now a pandemic due to the worldwide availability of processed and fast foods. In the US poor food choices, "couching" and inactivity facilitate obesity [15-22].

The planet

The planets woes; deforestation, warming, rising oceans, atmospheric CO_2, methane, shrinking coral reefs, species extinction, plastic and garbage contaminated oceans and uncontrolled fires, loom as catastrophic [23-31]. Garbage contaminated oceans are but one example of the magnitude of the problem. Every day approximately 8 million pieces of plastic find their way into the ocean. This is anticipated to triple by 2040 [31]. The great pacific garbage patch encompasses 1.6 million square kilometers between Hawaii and California, is increasing and is larger than Texas [31]. Follow the money explains why politics and greed impede resolution. Corrupt lobbying, politics and diverted funds keep self-interest above public need [32-35]. A documentary, The Power of Big Oil traces the research, public interest, business and political interests about greenhouse gasses and methane, its effect on the public and planet and how industry manipulates evidence [36].

Lifestyle

Lifestyle strongly influences health and lifespan, global warming, the atmosphere, oceans, and if unchecked animal and human extinction. Lifestyle is prevention and trumps early detection or management of chronic diseases. The chronic inflammatory changes that antedate screening and detection of disease are best and easiest prevented rather than stabilized or reversed [37-42]. Changing lifestyle is difficult and to become autonomous and habitual must override long held habits, customs, traditions, tastes and incorrect information [41]. Lifestyle and nutrition is neglected or minimized in medical school, residency and practice [43-46]. It is the causal factor in chronic inflammation and most diseases [42].

Adapting four healthy lifestyle (HLS) measures; not smoking, maintaining a normal body weight, exercising 30 minutes/day and eating a whole food plant based diet could annually prevent 1 million cases of both cancer and diabetes and one half million heart attacks and strokes. It could decrease chronic disease by 80%, diabetes by 93%, heart attacks by 81%, strokes by 50% and cancer by 36% [11-14,39].

Eating less and less often extends longevity [47,48]. The size, strength and lifespan of elephants, gorillas, rhinos and giraffes supports the value of plants, in supporting health and lifespan. The daily intake of roots, grasses, fruit and bark an elephant eats is 300 pounds, and 40 liters of water which provides sufficient nutrients and hydration to support their size and movement of 10 - 20 miles a day [49].

Three succinct pearls of dietary advice were offered by Pollan, Sinclair and Esselstyn. Pollan used 7 words "eat food, mostly plants, not too much" [47]. He defined food as something a great grandmother bought some years ago. Sinclair emphasized dietary wisdom in 3 words "eat less often". The preface was sage and longer [53]. "After 25 years of researching aging and having read thousands of scientific papers,….one piece of advice I can offer, one sure fire way to stay healthy longer,…… to maximize… lifespan…. it's this: eat less often". Esselstyn cautioned, "eat nothing with a face or mother" and rather than indict family ancestors for "legacy illnesses" cardiovascular, obesity, and cancer, stated "genes load the gun but lifestyle pulls the trigger" [39].

Lifespan and longevity

Adapting a HLS at age 50 can extend life by 14 years (79 - 93 years) in women, and 12.2 years in men (75½ to 87½ years) [11-14]. Aging should not be taken for granted and its inevitability is less certain as knowledge increases [50-53].

Lifespan is influenced by multiple factors, including longevity genes (MTOR, AMPK, Sirtuins), selfish genes, the epigenome, telomeres, proteostasis, mitochondrial dysfunction, senescent or zombielike cells, stem cells, and inflammatory molecules [52,53]. Longevity genes protect by DNA repair and are activated by stress, exercise, starvation, and extremes of temperature. In mice sirtuins combat chronic inflammation, osteoporosis, macular degeneration, diabetes and heart disease. Adequate levels of nicotinamide adenine dinucleotide (NAD) are necessary. NAD is involved in hundreds of reactions, depletes with age, but functions when replenished and suggests why serious illness develops more often in the elderly. Other longevity genes (TOR, AMPK) mimic sirtuins and signal cells to repair DNA breaks, decrease inflammation in senescent cells and digest old protein [52,53].

Stressed mice emit signals for repair and recovery (hormesis). Rapamycin, metformin, resveratrol, NAD, NMN (Nicotinamide Mono Nucleotide) and NR (Nicotinamide Riboside) are some of the recovery and healing molecules.

Why change in mid life?

There is reluctance to change lifestyle in midlife believing it unnecessary, misguided, and serves no benefit. Evidence supports the opposite, a better, longer and healthier life [53]. The Blue Zones describe 4 geographic areas where 10% of the population are healthy, alert, and live independently at age 100 or more [46].

A healthy lifestyle promotes health and lifespan. I believe the reasons it is not more popular are:

1. Public trust of industry and government: The marketing of food and beverages emphasize taste, ingredients and benefits, but not health. Many packaged foods are processed and unhealthy. Industry seeks sales and profit. The public needs to separate health from taste and understand food ingredients and labels.

2. Health professionals: The public has great faith in health professionals, most of whom have minimal knowledge of nutrition and lifestyle. This is taught briefly in 1/4 of medical schools and less often in residency. It explains why lifestyle is absent from most medical practices and why few physicians adhere to its tenants [42-45].

3. Family and tradition: Many families have ethnic or traditional foods prepared for family and special occasions. They are inherited by successive generations and are less harmful when modified or eaten infrequently. A HLS today differs from 50 years ago. In many families, heart disease, a leading killer, remains an unwelcome, uninvited and frequent visitor. Understanding lifestyle, not genes, is the likely culprit and adapting a newer and healthier tradition a whole food plant based diet, will be impactful, particularly when widely adopted.

4. Misinformation and false claims: To sell product, advertisements are made that are more imagined than truthful. Supplements and vitamins are a 151 million dollar annual industry that can be beneficial when there are documented deficiencies. These products are minimally regulated and most claims are invalid and the products of dubious value and most often not needed [54].

Conclusion

A long healthy life coexisting with a peaceful flourishing planet, atmosphere and oceans is an admirable goal, but it's man-made obstacles have created a perfect storm. Since the planet and its occupants are in peril and the leadership oblivious, the situation seeks urgent interventions. Individuals are a necessary and first priority. A healthier lifestyle, mindful of the environment, atmosphere, animals, and rain forests is a small but important starting point. Individual lifestyle change is long overdue with beneficial and far reaching effects. It becomes impactful when enough individuals adapt it. It has been time to universally replace the destructive perfect storm with a brighter, longer and healthier life.

Acknowledgement

The author acknowledges the efforts of Lillian B Wagner and Griffin Cooper who researched the literature and videos, and reviewed and made manuscript changes.. Address questions and comments to Avram M Cooperman MD, FACS.

Bibliography

1. Gun Violence Archive (2022).
2. Perfect Storm.
3. How does your state rank (2020).
4. Less Than 3% of Americans Live a Healthy Life Style (2016).
5. Comparing National Systems Just Facts, No Bias. https://healthsystems.
6. Common wealth Fund reports. https://www.commonwealthfund.org.
7. Reflecting Poorly/Common wealth Fund. Mirror (2021).
8. US Health System Ranks last Among High Income Countries. https://jamanetwork.com.
9. The List: The World's Worst Health care Reforms-Foreign Policy. https://www.ForeignPolicy.com
10. B Anton., *et al.* "Can We Delay Aging? The Biology and Science of Aging". *Annals of the New York Academy of Sciences* 1057.1 (2005): 525-535.
11. Ford ES., *et al*. "Healthy Living is the Best Revenge: Findings from the European Prospective Investigation into Cancer and Nutrition". *Potsdam Study* 169.15 (2009): 1355-1362.
12. Larricki JN and Mendelsohn RE. "Finally a regimine to extend human life expectancy". *Rejuvenation Research* 21.8 (2018): 273-282.
13. Li Y., *et al.* "Impact of Healthy lifestyle Factors on Life Expectancy in the US". *Population Circulation* 138.4 (2018): 345-355.
14. King DE., *et al*. "Turning Back the Clock, Adapting a Healthy Lifesyle in Middle Age". *The American Journal of Medicine* 120.7 (2007): 598-603.

15. Pieter HM Van Baal., *et al.* "Lifetime Medical Costs of Obesity: Prevention No Cure for Increasing Health Expenditure". *PLoS Medicine* 5.2 (2008): e29.

16. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

17. https://www.cdc.gov/obesity/data/childhood.html

18. R Dobbs and J Manyika. "The Obesity Crisis". *The Cairo Review of Global Affairs* (2015).

19. D Yach., *et al.* "Epidemiologic and economic consequences of the gl obal epidemic of Obesity and diabetes". *Nature Medicine* (2006).

20. R Mehrzad. "Obesity Global impact and Epidemiology". Obesity, Elsevier (2020).

21. https://www.hsph.harvard.edu/obesity-prevention-source/obesity-definition/how-to-measure-body-fatness/

22. Silver HJ., *et al*. "Imaging, Body Composition, Obesity, and Weight Loss: Challenges and Opportunities". *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy* 3 (2010): 537-547.

23. S Zielinski. A World of Water Woes/Science/Smithsonian magazine (2014).

24. Global Warming Myths vs truths – Facts on Climate Change.

25. Will Humans Become Extinct? The Four Most Critical Deadlines. https://www.joboneforhumanity.org

26. The Sixth Mass Extinction. https://populationmatters.org.

27. Cold Truths for a warm planet - Temperate thought on climate. https://www.economist.com.

28. Iberdrola.com/sustainability/most–important–environmental-issues.

29. Undo.org Environmental Destruction.

30. Plastic in the ocean. https://wwwcodorferries.co.uk

31. Great Pacific Garbage Patch/Nat'l Geographic Society. https://www.nationalgeographic.org.

32. Trust Us: Politicians Keep Most of Their Promises. https://fivethirtyeight.com. (2016).

33. Read my Lips: Politicians, Promises and Public Opinion-Forbes. https://www.forbes.com (2016).

34. Politics built on empty promises does not benefit anyone. https://www.ntdaily.com (2021).

35. M Mollin. "To adapt to Climate Change Comes to Gripes With Politics". *Nature* (2022).

36. The Power of Big Oil Part 1, 2 and 3 FRONTLINE_PBS.

37. Nutrition Facts.org. The Actual Benefit of Diet vs Drugs (2015).

38. B Hudson., *et al.* "Patients expectations of screening and preventive treatments". *Annals of Family Medicine* 10.6 (2012): 495-502.

39. CB Jr Esselstyn., *et al.* "A way to reverse CAD". *The Journal of Family Practice* 63.7 (2014): 356-364.

40. TC Hoffman and C Del Mar. "Patient expectations of the Benefits and Harms of Treatments, Screening and Tests A Systematic Review Clinical Review and Education". *JAMA Internal Medicine* 175.2 (2015): 274-286.

41. Sevild CH., *et al.* "Initiation and maintenance of lifestyle changes among participants in a healthy life center: a qualitative study". *BMC Public Health* 20 (2020): 1002.

42. Cooperman AM. "Is Lifestyle another Elephant in the Room Editorial". *EC Gastroenterology* (2021).

43. Nutrition, Education, Mandate Introduced for Doctors. Nutrition Facts.org (2011).

44. Doctors Know Less than They Think About Nutrition. Nutrition Facts.org (2011).

45. Lifestyle and Disease Prevention: Your DNA is Not Your Destiny. Nutrition Facts.org (2021).

46. Parker WA., *et al.* "They think they know but do they? Misalignment of perceptions of lifestyle modification knowledge among health professionals". *Public Health Nutrition* 14.8 (2011): 1429-1438.

47. D Buettner. The Blue Zones: Lessons for Living Longer.

48. M Pollan. The Omnivores Dilemna.

49. African elephants, facts and photos. https://www.nationalgeographic.com.

50. Lifestyle and Disease Prevention: Your DNA is Not Your Destiny 55 (2021).

51. Willett WC. "Balancing life-style and genomics research for disease prevention". *Science* 296.5568 (2002): 695-698.

52. DA Sinclair and L Guarante. "Unlocking the Secrets of Longevity Genes". *Scientific American Special Edition* (2006): 68-75.

53. DA Sinclair MD La Plante Lifespan Why we age and why we don't have to Atria Books chap1 3-22 (2019): 88.

54. The truth about supplements- five things you should know. https://wwwpenmedicinc.org.

Volume 9 Issue 10 October 2022