



Intermittent Fasting on the Ekadashiday and the Role of Spiritual Nutrition

M.R.SUCHITRA¹, S.PARTHASARATHY^{2*}

¹Department of chemistry and biosciences, SASTRA deemed to be university(SRC), Thanjavur, Tamil Nadu, India.

²Department of anesthesiology Mahatma Gandhi Medical college and research institute Sri Balaji Vidyapeeth, Puducherry, India.

Abstract

Intermittent fasting or a calorie restricted diet is being practised for many centuries with ancient Indian religious beliefs every fifteen days in Ekadashi day which is the eleventh day of a lunar cycle. This fasting has innumerable health benefits like providing antioxidant, antidiabetic and anti-obesity effects. This is customarily broken the next day with a mixture of amla-raita and agathi leaf intake. Amla (*Emblica officinalis*) with a minimal calorific value with better digestive actions has got anti-ulcer and anti-bloating effects. The curd has probiotic qualities with lactobacillus content. Amala curd raita forms an ideal recipe in such conditions. The agathi leaves (*Sesbania grandiflora*) have antiulcer effect and it improves gut motility. Yet this nutrition (cooked agathi leaves) if taken daily is injurious to health and therefore recommended for two to three times a month. This exactly matches the fortnightly occurrence of Dwadashi. Thus, fasting during Ekadashi day reaps the benefit of intermittent fasting on health and breaking it the next day with an ideal combination of gut friendly foods provide adequate calories. Such foods with religious and scientific backing can be termed spiritual nutrients which brings better health to humanity.



Article History

Received: 10 June 2020

Accepted: 05 December 2020

Keywords

Amla;
Agathi Leaves;
Fasting;
Intermittent.

Introduction

Intermittent Fasting(IF) has been practiced for centuries with the belief of wellbeing getting restored. The so-called restoration of internal milieu by calorie free periods is believed in many religions.

The Muslims practise the night-only-feeds of Ramzan, the Christians in a few selected days of a week and the Hindus fasting every fifteen days on the day of Ekadashi.¹ Ekadashi is a Sanskrit word, which literally means 'the eleventh'. It actually refers

CONTACT S.Parthasarathy ✉ painfreepartha@gmail.com 📍 Department of anesthesiology Mahatma Gandhi Medical college and research institute Sri Balaji Vidyapeeth , Puducherry, India.



© 2021 The Author(s). Published by Enviro Research Publishers.

This is an  Open Access article licensed under a Creative Commons license: Attribution 4.0 International (CC-BY).

Doi: 10.12944/CRNFSJ.9.1.12

to the eleventh day of a fortnight and hence there are two such days in a lunar month. After the full calorie free day, there are certain prescribed foods and nutrients to be taken the next day of Dwadashi among which amla fruit and agathi keera leaves are necessarily taken as a starter before actual full-fledged refeeding. There are a few specific ingredients in these foods which make them ideal to break a fasting session.² As these days are associated with the Hindu deities such nutrition can be designed as spiritual nutrition. Such additives to routine diet may help overcome the problems of refeeding. In this review we have attempted to define the scientific basis of fasting during Ekadashi and the reasoning behind the initial administration of agathi keera leaves and amla fruits before the intake of routine diet on the following day, i.e. Dwadashi. We tried to look for scientific evidences behind such fortnightly fasting and the specialized feeds on the next day and kept them as objectives of this special review

Intermittent Fasting

Intermittent restriction of calories has been described from time immemorial. Fasting on and off has been associated with various advantages and different health benefits. As soon as the fasting begins, there is a metabolic switch which causes the energy extraction from carbohydrates to triglycerides. A ketogenic phase is initiated. This may influence health and ageing. Periodic metabolic switch provides the ketones which are necessary to fuel the cells during the calorie free times. It also invokes systemic and cellular responses that continue into the fed state which comes later to improve mental and physical performance, as well as resistance to disease.³ It decreases the markers of oxidative stress and inflammation, thereby improves asthma-related symptoms like wheezing and nocturnal cough. A few fasting regimens impose a diurnal rhythm in food intake. This resulted in better circadian clock gene expression. This expression can reprogram the molecular mechanisms of energy metabolism and also weight regulation.⁴ This is possibly one of the explanations for weight control in persons with calorie restricted intermittent feeds. IF may influence the gut microbiota, which is the scientifically explored complex, diverse microbial community that is present in the intestinal tract. This influence improves both the obesity and the diabetic profile of patients.⁵ Caloric restriction/IF have been shown to better

the glucose homeostasis and insulinresistance in human beings. Fasting produces a modulation of lipid droplet protein composition, changes adipokine profile and confers cardiovascular protection.⁶ In a clinical trial, older adults on a short-term regimen of caloric restriction had improved verbal memory.⁷ A subtle reduction in the progression of polycystic kidney disease and control of hypertension was also achieved with intermittent fasting. In women, reproductive and mental health better with IF.⁸ A lot of studies have proved the beneficial effect of IF in the month of Ramzan.^{9,10} Hence, we can deduce that IF has beneficial effects in all human beings despite their differences by age, sex or chronic illnesses.

Ekadashi and Fasting

The Ekadashi day i.e. eleventh day of a lunar month is believed to be significant to Lord Vishnu and the followers of the Lord observe a full fasting on this day. The fasting on this day is called Ekadashi Vrat. As there are two such days in a month, devotees observe two such fasting days in a month. Ekadashi is when the distance between the Moon and Sun is in the range of 120-132 degrees or in the range of 300-312 depending upon whether the moon 's size is on the increase or decrease. The study of the Vedic astronomy has revealed the significance of the moon's position and the influence over the human mind. Ekadashi, the eleventh day of the lunar fortnight is said to be conducive for the mind to be in its natural state of wisdom. Hence, if we fast and orient the mind its likely to act better. Another explanation for Ekadashi fasting is that compared to any other day of the moon cycle, atmospheric pressure is supposed to be lowest on the coming days.¹¹ In Lieber's research on patients with manic depression, he noticed the recurrences of clinical psychiatric symptoms during extreme tidal days. It is his thesis that a range of manic attacks are more common on tidal days. Thus, Ekadashi fasting has multiple effects both on the body and the mind to balance such negative effects. The premier effect is to keep the balance of hormones and other bodily secretions in relation to the glands and cells. If there would be no food and water in the stomach on these days, the so-called linear attraction is unlikely to affect the gut, kidney and the liver. Hence, this is the ideal time to fast and cleanse the bowel system. As such these studies establish our observations that intermittent fasting once in fifteen days is likely to reap health benefits.¹² Still we have to be careful

in advising all the benefits as such; because IF may have adverse implications in the malnourished, pregnant women and children.

Post Fasting Health

Feeding behaviour has been shown to be modulated by hunger-state. Prolonging the inter-meal intervals or inducing weight loss can positively influence perceived taste pleasantness, a concept known as alliesthesia. Usually hunger ensues and an attempt to over eat to compensate for the IF occurs. Problems can arise after IF when someone who has been fasting for half a day begins to take too many liquids and binge eating carbohydrate-rich food within a short period of time.¹³ As a result, such people usually develop gaseous distension, gastritis, reflux (GERD) symptoms and can even have vomiting. There may be changes in the digestive pancreatic juice secretion. The liver phosphoglucosmutase and phosphor-hexoseisomerase activity after IF decreased significantly.¹⁴ Hence any avid refeeding as noted as alliesthesia is likely to cause digestive problems and more likely to cause decreased compliance towards IF among persons. A planned nutritional supplement ending the fast followed by calorie intake is likely to be better to reap the benefits of IF.

Spiritual Nutrition

Any nutritious diet which is likely to do good for the mind, body and the soul can be termed as spiritual nutrients. To be clear, any nutrient which has been detailed in ancient culture as an associate of God giving dietary benefits can be termed as spiritual nutrients. After a calorie restricted Ekadashi, usually on the next day i.e. Dwadashi, fast is broken by taking two important nutrients. These are the goose berry or the amla fruit and the agathi leaves.

Amla or gooseberry (*Emblca officinalis*) is widely used in the Indian traditional system of medicine and culturally believed to increase defence against disease in us. Amla contains many nutrients: it is abundant with vitamin C and is beneficial for us. It also contains many minerals like phosphorous, iron and vitamins like calcium, carotene and different components of the vitamin B complex. It also has tannoids which might counter the polyol pathway-induced oxidative stress and decrease such stress.¹⁵ Amla has a lot of potential and proved benefits against diabetes and cardiovascular

diseases.¹⁶ In our setting of its use after fasting, it is still to be explored. The Amla fruit normalizes digestion, reduces gastric acidity and rejuvenates liver. It relieves constipation by an improved colonic action. It also modifies the secretion of pancreatic and biliary juice. It gives 48 calories per 100 grams also. The amla fruit has a clear anti-ulcer and anti-helicobacter pylori actions. These actions exactly suit the post fasting gut state.¹⁷ Hence a nutritious food with some calories with normalization of gut and its acidity is the ideal one for breaking the fast.¹⁸ This exactly matches with amla fruit. Gut microbiota can significantly influence health and disease. Fasting has significant changes in the gut probiotics like Lactobacillus (LAB). LAB in curd had properties consistent with probiotic potential, but mildly inconsistent. LAB abundance in curd increased rapidly at 12 h of fermentation at room temperature. The results of a few studies indicate the beneficial potential of *L. acidophilus* in fasted and re-fed nutritional states by a reduction of harmful azoreductase and thereby it can improve colonic function.¹⁹ Hence it has been traditionally stated that amla curd combination as a raita-recipe is one of the time-tested combinations to break fasting. Apart from some calories, it's an antiulcer and digestive balancer with a probiotic potential. The mixture also makes amla tastier with less sourness. Amla is rich in vitamin C²⁰ which is easily digestible and one of the described food supplements for breaking the fasting.

Sesbania Grandiflora/Agathi

Sesbania grandiflora is the botanical name of Agathi which belongs to the family Fabaceae. It's also rich in vitamin C. The agathi leaves can also give 27 calories per 100 grams. A mild calorie supplier which can ease any problem of fasting hypoglycaemia, it has rich nutrients which can have potential benefits in fasting. The leaf extracts of agathi has a lot of therapeutic uses like antioxidant, anti-helminthic, immunomodulatory and cytoprotective effects.²¹ The most important effects are in the digestive system. It decreases acid production and causes better intestinal motility. The agathi leaves can be consumed in the form of either a juice, or a cooked spinach. The thin stem of the plant is used as an ingredient of medicines in siddha and Ayurveda. It is supposed to be a powerful herb. It will neutralize medicines and render them ineffective. Even though, it has many uses, a daily intake has been associated with gut problems. It is advisable to

take agathi leaves two to three times in a month.²² It's a spiritual coincidence that the 12th day of the lunar month (Dwadashi) falls twice a month. Hence it is very logical to name, a nutrient with a spiritual background with scientific explanations of its actions as a spiritual nutrient. Any fasting is likely to be ketogenic. Hence a diet with antoketogenic property like Agathi will be of immense help to fasting persons.²³ Hence a combination of amla-curd-raita and agathi leaves being depicted in the ancient Indian culture as a spiritual nutrient combination. Curd has got innumerable health benefits including anti gastritis properties.²⁴ Such combinations can smoothly overcome any hiccups during the process of breaking the fast. This spiritual nutrition mixture, taken in precise described amounts can be very effective to tide over any digestive problems with retention of health benefits of intermittent fasting. With the above scientific evidence, we can deduce that such fasting and breaking the practice with specific nutritive feeds is likely to reap rich health benefits satisfying our primary objectives of this review.

Conclusion

Intermittent fasting during Ekadashi is extremely useful with antioxidant antiaging and many other beneficial effects on health. Fortnightly fasting has been scientifically proved to produce hormonal changes. Breaking the fast every time with a combination of amla-raita and agathi leaves with a significantly positive effect on the digestive system is scientifically the near ideal nutritious food. These dietary supplements supply adequate calories having anti-ulcer properties with a probiotic additive. Even-though there are rich benefits. IF is not to be practised in children, malnourished and pregnant women.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Conflict of Interest

The authors do not have any conflict of interest.

References

- Patterson RE, Laughlin GA, LaCroix AZ, *et al.* Intermittent Fasting and Human Metabolic Health. *J Acad Nutr Diet.* 2015;115(8):1203–1212. doi: 10.1016/j.jand.2015.02.018.
- Kannan S, Mahadevan S, Seshadri K, Sadacharan D, Velayutham K. Fasting practices in Tamil Nadu and their importance for patients with diabetes. *Indian J Endocrinol Metab.* 2016;20(6):858–862. doi:10.4103/2230-8210.192921.
- de Cabo R, Mattson MP. Effects of Intermittent Fasting on Health, Aging, and Disease. *N Engl J Med.* 2019 Dec 26;381(26):2541-2551. doi: 10.1056/NEJMra1905136.
- Longo, Valter D, and Mark P Mattson. "Fasting: molecular mechanisms and clinical applications." *Cell metabolism* vol. 19,2 (2014): 181-92. doi:10.1016/j.cmet.2013.12.008
- Collier R. Intermittent fasting: the science of going without. *CMAJ.* 2013;185(9):E363–E364. doi:10.1503/cmaj.109-4451.
- Malinowski B, Zalewska K, Węsierska A, *et al.* Intermittent Fasting in Cardiovascular Disorders-An Overview. *Nutrients.* 2019;11(3):673.
- Li L, Wang Z, Zuo Z. Chronic intermittent fasting improves cognitive functions and brain structures in mice. *PLoS One.* 2013;8(6):e66069. doi:10.1371/journal.pone.0066069.
- Nair PM, Khawale PG. Role of therapeutic fasting in women's health: An overview. *J Midlife Health.* 2016;7(2):61–64. doi:10.4103/0976-7800.185325
- Rouhani MH, Azadbakht L. Is Ramadan fasting related to health outcomes? A review on the related evidence. *J Res Med Sci.* 2014;19(10):987-992.
- Beshyah SA, Hajjaji IM, Ibrahim WH, Deeb A, El-Ghul AM, Akkari KB, Tawil AA, Shlebak A. The year in ramadan fasting research (2017): A narrative review. *Ibnosina J Med Biomed Sci* 2018;10:39-53
- Chaitanya-CharanDas, -Spiritual Scientist,

- Bhagavad.<https://www.the-spiritual-scientist.com/2013/01/why-does-one-have-to-break-ekadashi-at-a-specific-time>.
12. Lieber, A. L., and C. R. Sherin. Homicides and the lunar cycle: Toward a theory of lunar influences on human emotional disturbance. *American Journal of Psychiatry*, 1972. 129: 101-106.
 13. Cameron JD, Goldfield GS, Finlayson G, Blundell JE, Doucet É (2014) Fasting for 24 Hours Heightens Reward from Food and Food-Related Cues. *PLoS ONE* 9(1): e85970. <https://doi.org/10.1371/journal.pone.0085970>
 14. Anton SD, Moehl K, Donahoo WT, et al. Flipping the Metabolic Switch: Understanding and Applying the Health Benefits of Fasting. *Obesity* (Silver Spring). 2018;26(2):254–268. doi:10.1002/oby.22065.
 15. Grover HS, Deswal H, Singh Y, Bhardwaj A. Therapeutic effects of amla in medicine and dentistry: A review. *J Oral Res Rev* 2015;7:65-8.
 16. Goraya RK, Bajwa U. Enhancing the functional properties and nutritional quality of ice cream with processed amla (Indian gooseberry). *J Food Sci Technol*. 2015;52(12):7861–7871. doi:10.1007/s13197-015-1877-1.
 17. Shubhi Mehrotra et al. Anti-Helicobacter pylori and antioxidant properties of Emblica officinalis pulp extract: A potential source for therapeutic use against gastric ulcer. *Journal of medicinal plant research*. 2011; 5(12):2577-2583
 18. Kroghdahl A, Bakke-McKellep AM. Fasting and refeeding cause rapid changes in intestinal tissue mass and digestive enzyme capacities of Atlantic salmon (*Salmo salar* L) *Comp Biochem Physiol A Moll Integr Physiol*. 2005 Aug;141(4):450-60.
 19. Mountzouris, Konstantinos C. Effects of *Lactobacillus acidophilus* on gut microflora metabolic biomarkers in fed and fasted rats. *Clin Nutr*.2009;28(3):318-24. doi: 10.1016/j.clnu.2009.01.009.
 20. Wegman MP, Guo MH, Bennion DM, et al. Practicality of intermittent fasting in humans and its effect on oxidative stress and genes related to aging and metabolism. *Rejuvenation Res*. 2015;18(2):162–172. doi:10.1089/rej.2014.1624.
 21. Zarena AS, Gopal S, Vineeth R. Antioxidant, antibacterial, and cytoprotective activity of agathi leaf protein. *J Anal Methods Chem*. 2014;2014:989543. doi:10.1155/2014/989543
 22. R. Ramasubramania Raja¹, K. Haranadha Baba. Hummingbird tree – Biological review *Res. J. Pharmacognosy and Phytochem*. 2019; 11(3):150-154. DOI: 10.5958/0975-4385.2019.00025.6
 23. Sangeetha, Prasath, Subramanaian , Antihyperglycemic and antioxidant potentials of sesbania grandiflora leaves studied in stz induced experimental diabetic rats *IJPSR*, 2014; Vol. 5(6): 2266-2275.
 24. Balamurugan R, Chandragunasekaran AS, Chellappan G, Rajaram K, Ramamoorthi G, Ramakrishna BS. Probiotic potential of lactic acid bacteria present in home made curd in southern India. *Indian J Med Res* 2014;140:345-55