

Vegetarianism for Children: A Scenario

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Human beings have been experiencing different eating habits, improvising themselves from time to time in relishing more and more diverse tastes of their platter, by shifting from hunting and gathering style to culinary and gastronomic innovations at recent times. The famous saying—“you are what you eat and you eat what you are” dates back to ancient religious texts which are a source of building ethical framework in mankind. The oldest texts of Hinduism capture the ultimate goal of life of *atman* (soul) to connect with the Divine entity, which necessitates the cessation of the vicious cycle of birth and death, ending entanglements of *karmic* (good and bad actions) reactions and following different processes of *yoga*. The concept of *karma* spread to other branches of religions like Buddhism and Jainism and more stricter rules of liberation were set. The advent of vegetarianism is linked to the same framework of moral conduct where abstinence from violence is considered a means of maintaining inner and outer harmony and a way to come out of sinful reactions of atrocities that will be created by slaughtering animals for food [1]. A report states that India inhabits largest population of vegetarians (about 38%) in the world in 2023. Its religious inclinations, family and cultural traditions play a major role in shaping the dietary habits among the citizens generations after generations. However, today apart from religious wisdom, there are other reasons of people turning to plant-based foods – climate awareness, increasing prevalence of chronic health disorders, compassion and economic reasons to name some. This picture is not only relevant in India but throughout the world. More and more people are turning to plant-based diets are found to be affirmative in future because mindfulness in behavior towards reducing animal suffering, climate change and sustainable approach is evident among the population globally [2].

The Earth's climate is getting transformed throughout the decades affecting the environment in its worst. The Global warming happens when greenhouse gases, majorly CO₂, emitted in the environment by exhaustive processes like burning of fossil fuels, deforestation etc. get piled up in the atmosphere, hence trapping the heat and raising the temperature of the Earth. This results in recurring natural disasters and hence loss of properties which are frequent events throughout the world lately. Actions are recommended



at individual levels like turning towards cleaner electricity sources, opting for public transport, opting a greener diet and reducing food waste can save up to 500 kgs of carbon-dioxide emissions. The changing climate is more likely to affect the developing countries pushing them into the darkness of extreme poverty and in the situation of depleted essential resources by the next few decades under prevailing conditions. Hence the COP29 of the United Nations, in 2024, focused on assisting the weaker countries with about \$300 billion every year by the well-off countries to accelerate the task of reducing CO₂ emissions. The ongoing warming is undeniably affecting the children putting a question mark on their future security of life. Increasing episodes of heatwaves and consistent breakouts of daily highest temperature records have already manifested with more locking of schools in summers that harms the academic efficiency of children. Persisting poor air quality index scores also threatens children's health as they are more vulnerable towards infections and allergies due to immature immune responses during growth phases. The UNICEF reports in that the climate change makes the education attainment of about 40 million youngsters endangered, more than 700 million of them are exposed to water scarcity and more importantly malnutrition will be one of the most prominent problems due to food insecurity and crop failures. Despite of all these statistics and events, there are least efforts in action towards attaining a net zero environment for generations to come. Rather than keeping the children as victims, awareness among the youth by deliberate education, inspiring the young voices to raise opinions as been seen in some

countries like Sweden, Portugal, US, where the youth have endeavored to advocate legal significance in collective attempt in mitigating catastrophic scenario, etc. are in utmost need [3].

In terms of nutrition, the effectiveness of vegetarian diets in fulfilling the nutritional needs were on dais of research question since decades. It has been found that vegetarians also have different lists of dietary prescriptions, which classify them into categories like lacto-vegetarian (who say no to meat of all kinds and eggs but yes to milk), Ovo-vegetarian (who say yes to eggs only), ovo-lacto-vegetarians (who say no to meat but yes to eggs and milk), Pescetarian (who say yes to fishes and seafood but no to meat, eggs and milk), flexitarian (who say yes to animal based foods occasionally) and vegans (who only munch on plants). Although plant-based diets are suitable to reduce health risks but lack of proper planning due to inadequate knowledge can lead to multiple nutritional deficiencies. Major concerns are regarding vitamin B12, vitamin D, iodine, calcium, selenium and iron. Vitamin B12 is produced by microorganisms within the gut and is also available in animal food products including dairy. It is important to maintain functions of central nervous system, needed for formation of red blood cells and brain development in children and aids in DNA synthesis. However, eggs and





deficiency of calcium substantially. More than 70% of vegans also remain calcium deficient. Although leafy greens are good sources of calcium but high content of oxalic acid and phytic acid reduces the bioavailability of calcium to 20-30%

milk are inadequate to meet its daily needs, hence those who are vegetarians are more prevalent and vegans are the most prone towards vitamin B12 deficiency and must rely on supplementation under expert guidance. Vitamin D is another important nutrient that has its role in bone metabolism, it helps in calcium absorption from intestine and mediates in immune function. It is naturally produced subcutaneously under the Sun exposure but nowadays modern lifestyles restrict enough outdoor time hence become at risk to deficiency. Prevalence of vitamin D deficiency is considerably high, falling in the range of 70-80% among adults and 90-100% among vulnerable groups like pregnant and lactating women and infants across the entire Indian subcontinent. The degree of deficiency depends upon the kind of animal product restricted, vegans being 16 times more prone to deficiency than omnivores. Iodine is another vital nutrient essential for thyroid health and affects the associated functions of thyroid hormones like metabolic regulation, growth and neural development. Although vegetarians and vegans are at risk for developing iodine deficiency but almost 92% of Indian households has access to iodized salt marketed widely across the country which has successfully managed to prevent iodine deficiency among its citizens. However, precautions are necessary to ensure proper intake of iodine. Calcium is necessary for bone growth and muscle metabolism and vegetarians develop

only. Reliance on dairy, calcium fortified plant-based milk are solutions suggested to look for before opting any supplementation regime. Iron is the absolute component of hemoglobin and myoglobin, also helps in erythropoiesis, DNA synthesis and immune functions. Deficiency results in microcytic anemia, causes cognitive impairment and increases susceptibility to infections. Plant-based foods are rich in iron equally as in animal-based foods but vegetarians are more prevalent for anemia compared to meat eaters, as iron in plants are less bioavailable due to the presence of phytates and polyphenols. Iron in plants are in ferric (Fe^{3+}) form which gets converted to ferrous (Fe^{2+}) form to get absorbed in the gut. Whereas animal foods contain iron in ferrous form and hence easy to digest. Also, vitamin C aids in iron absorption hence people are advised to take vitamin C rich foods to assist in iron absorption [4].

It is obvious that vegetarian and vegan families are having children who grow with the above-mentioned dietary restrictions. As per NFHS 5 (National Family Health Survey 5) reports, more than 65% of the children under 5 years of age are suffering from anemia and the prevalence of underweight and stunted children is more than 30%. Nutritional status and thereby the growth outcomes of children is determined by the kind of food they have. Studies found that compared to omnivorous children, vegetarians

order to maximize the growth potentials of the youngsters as well as adopting a climate friendly life by holding back the ancient Vedic legacy. ♦

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