

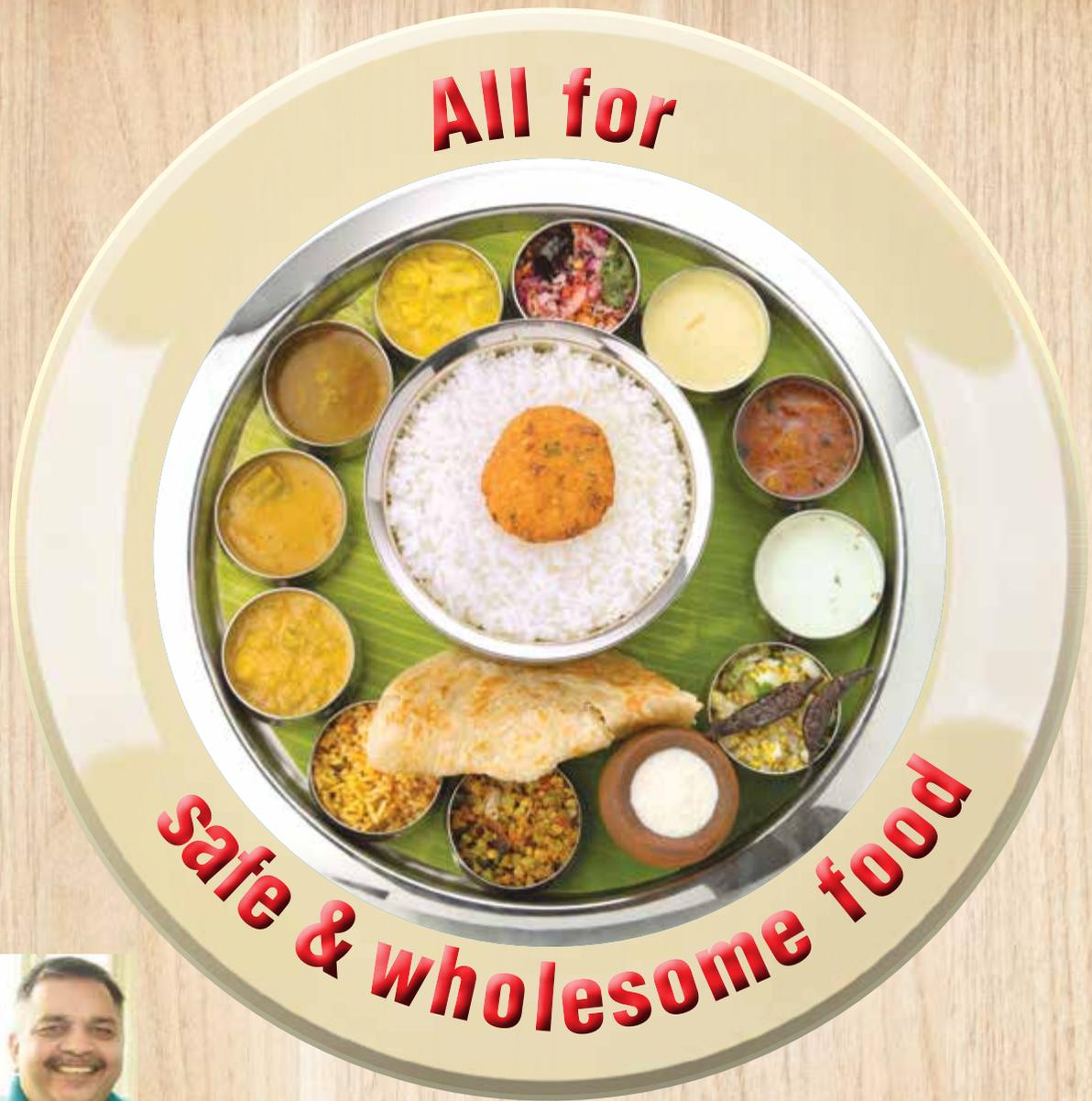
Nutritionals Nutraceuticals Functional Foods Dietary Supplements

NuFFooDS

perspectives on science & business
Spectrum

Volume 3 | Issue 9 | May 2016 | ₹100
www.nuffoodsspectrum.in

68 pages including cover



Pawan Kumar Agarwal
CEO of FSSAI

'Consumers have a right to safe food'



Dr Sanjay Agrawal

Pharmaceuticals Consultants and
Editor-in-Chief of IJMToday

Antioxidant overdose may cause more harm than wellness

Becoming older is a natural phenomenon and also it is part of the life cycle. Our lifestyle influences how quickly we age and how we deal with becoming older. Ageing also generates concerns about ongoing health and vitality. The decline in physical and mental function due to ageing are caused partly by lifestyle and partly by the normal processes of ageing. Nutrition plays an important role in maintaining health in vulnerable older people that it has the potential to ease the load that ageing populations place on healthcare systems.

Normally people are aware about the benefits of antioxidants. They can help to prevent cancer and cardiovascular disease and even slow the signs of ageing. Antioxidants

are natural cell protectors, neutralising free radicals by pairing an electron to the outermost shell of radical oxygen molecules, rendering them harmless. Antioxidants are nutrients such as vitamins, minerals, and enzymes that are capable of counteracting the damaging, but normal, effects of the physiological process of oxidation in bodily tissues. Antioxidants work in way of chain breaking and in way of prevention. A chain breaking antioxidant such as Vitamin A, Vitamin C and Vitamin E, stabilise free radicals or cause them to decay into harmless atomic structures. A preventative antioxidant resists process of oxidation by scavenging free radicals. Vegetables and foods such as carrots, green leafy vegetables like kale, collards and spinach, berries, cherries and grapes, green tea, cit-

rus fruits, apples and pears contain large quantity of antioxidants.

Nutrition's role is vital in keeping the human body running smoothly and preventing age related health problems. Staying mobile is very important for getting the most out of life as one ages. Mobility affects how easily we can get around, independence, and quality of life. The general decline in muscle mass with ageing is partly responsible for reduced mobility, but conditions such as painful joints, weak bones and general endurance play a role. Vitamin D3 helps preserve mobility. Not only it is a key nutrient that can reduce the risk of osteoporosis, it is recommended to reduce the risk of bone fractures due to falls. This reduction in fracture risk is likely to come from Vitamin D's positive influence on improving muscle strength and reducing body sway. Thus Vitamin D3 is an important nutrient for older people and is recommended for bone health.

Advantages

Most people prefer natural antioxidants as they believe there were no chemicals. The advantage of many natural antioxidants, which have been components of human diet for several thousands of years, is that men have become adapted to them. Those, which are common components of food, are not sub-





ject to any legislative restrictions. Another advantage is that there are many substances of antioxidant activity in human diet. Their choice is thus not restricted to a few compounds as in the case of synthetic antioxidants. Natural antioxidants are, however, complex mixtures of many compounds of different activities, which may influence one another. Their composition differs according to the origin and year of crop, so that each batch should be tested for its activity. If the active substances are isolated and added as pure substances, their safety should be tested in the same way as in case of synthetic antioxidants. The best way for the application of natural antioxidants is their direct addition as ingredients without any fractionation.

Determination

Determination of the antioxidant activity is one of the ways how to biologically and nutritionally evaluate the quality of the fruit. It has been proved that antioxidant activity depends on the type of phenolic present in the fruit, as some phenolic compounds exhibit higher antioxidant activity. It is assumed that the ability of plant polyphenols to scavenge reactive oxygen radicals participates in the protective mech-

anism of plants. Due to the chemical diversity of antioxidants present in fruit, their strictly defined content is unavailable. In spite of the fact that total amount of antioxidants in various fruit types need not to represent the total antioxidant capacity, almost all phenolic compounds in fruits demonstrate some antioxidant activity.

Disadvantages

The excess use of some of the antioxidants in diet may cause more harm than good. Examples are oxalic acid, tannins and phytic acid, which are high in plant-based diets. In addition, there may be calcium and iron deficiencies in persons who take too much phytic acid from beans, legumes, maize and unleavened whole grain bread. Similarly oxalic acid is present in cocoa, chocolate, spinach, turnip and rhubarb and tannins are present in cabbage, tea and beans. Surplus use of these in diet may prevent mineral absorption.

Although antioxidants aren't proven to treat any conditions, research has shown that antioxidants have also been implicated in the prevention of a number of degenerative, age-related diseases such as cancer, cardiovascular disease, cognitive impairment, immune dysfunction, cataracts, and macular degeneration.

Eugenol, an antioxidant present in oil of cloves, also possesses toxic effects in high levels. Toxicity associated with high doses of water-soluble antioxidant like ascorbic acid is less of a concern since this can be excreted rapidly in urine. Very high doses of some lipid soluble antioxidants may have harmful long-term effects.

Vitamin E is also known to cause a multitude of side effects if it is taken in overdose, and it is inconclusive

how much most people can consume before they are likely to experience negative effects. Side effects that may occur include nausea, intestinal cramping, weakness, headache, blurred vision and gastrointestinal bleeding. Most worrying is the fact that it can increase the risk of a stroke.

While most of this might seem quite dramatic and serious, it is important to remember that Acai berry side effects, and side effects associated with other high antioxidant fruits and vegetables, only become apparent when excessive quantities of the food is consumed. The Acai berry has no known side effects when consumed in recommended doses, and so is perfectly safe to consume along with a healthy diet that incorporates a mixture of fruits and vegetables.

Beta-carotene is considered an antioxidant and is also a precursor to Vitamin A. This compound helps maintain healthy skin and also plays a vital role in eye health. Individuals who consume the necessary levels of beta-carotene can lower their risk for coronary artery disease, stroke, macular degeneration, and other age-related diseases. It protects the body from free radicals. Free radicals damage cells through oxidation. Eventually, the damage caused by free radicals can cause several chronic illnesses. Many studies have shown that antioxidants through diet help people's immune systems, protect against free radicals, and lower the risk of developing cancer and heart disease. Some studies have suggested that those who consume at least four daily servings of beta-carotene has a lower risk of developing cancer or heart disease.

Overdose's risk

The risk associated with overdose of beta-carotene is a yellowing of the skin called carotenemia. Even

though it is harmless, it is important to distinguish it from jaundice - a yellowing of the skin which may indicate a serious underlying health problem. Presently smoking people and earlier who were smoking, and those exposed to asbestos may have an increased risk of lung cancer from supplementing with isolated beta-carotene. Despite the possible link, it is still beneficial for these individuals to consume vegetables and fruits that are rich in beta-carotene.

About body growth vitamin - biotin – normally biotin is known as Vitamin B7 and has also been referred to as coenzyme R and W factor. It was originally called Vitamin H - the H signifying the 'German word haut', which means skin. As a supplement biotin is typically used to prevent or treat deficiency in this nutrient. A water soluble vitamin, biotin is

found in many foods such as meats, egg yolks, nuts, beans, and fish, but the biotin in most foods is not readily bioavailable. It is also synthesised by naturally occurring intestinal bacteria, and is believed to be stored in mitochondria in cells. Biotin is generally considered both safe and well-tolerated, with no adverse effects reported when taken at dosages of up to 10 mg/day. A number of drugs, including antibiotics, can cause biotin deficiency. Biotin use may also cause inaccuracies with certain thyroid laboratory tests.

Ginseng has been used to treat many different ailments. Ginseng's therapeutic properties are often questioned by western researchers and health professionals because of little high-quality research determining its true effectiveness in medicine. It provides energy and

prevents fatigue. Ginseng stimulates physical and mental activity among people who are weak and tired. It improves cognitive function and has anti-inflammatory effects such as constituents, ginsenosides, and immune-suppressive effects. It prevents cancer disease and the substances in ginseng that have anti-cancer properties.

Ginseng has some side effects such as headache, elevated heart rate, nausea, restlessness, and difficulty in sleeping. Symptoms of overdose of ginseng may include vomiting, irritability, urinary and bowel incontinence, fever, increased blood pressure, increased respiration, decreased sensitivity and reaction to light, decreased heart rate, cyanotic facial complexion, red facial complexion, seizures, convulsions, and delirium.^[NS]

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