

Brown Rice: Most Nutritional and Healthy Food

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SUMMARY

Rice (*Oryza sativa* L.) is a staple food of majority of population of the world. It belongs to family Poaceae. It provides nutrients vitamins to population. Brown rice is unpolished whole grain rice and produced by removing only the hull or husk. Brown rice is a nutritious whole grain filled with beneficial nutrients like fibre, magnesium, thiamine, calcium, protein, antioxidant, healthy fats and potassium. Brown rice is considered as excellent source of manganese and many bioactive non-nutrient compounds known as Phyto-chemicals. The consumption of brown rice is recommended to improve the health of general public/ or rural community. Hence, in this article the information's refer to the health and nutritional benefits of brown rice and its awareness regarding acceptability, demand and consumption among the general public/ or individual.

INTRODUCTION

Rice is one of the most important crops and a staple food of a majority of people. It is cultivated in over more than 100 countries. With 756 million tonnes produced globally, rice is the world's third-most produced agricultural crop behind sugarcane and corn (maize), which both have a wide variety of non-consumption uses. At the top of the charts are China (211.4) and India (177.6), which produced 389 million tonnes combined, accounting for more than half of global production. Nine of the top 10 and 13 of the top 20 rice-producing countries in the world are in Southeast Asia. Rice accounts for over 22% of global energy intake. Asia is the major rice producer, wherein rice production accounts for about 92-94% of the world's total production. White rice (WR) or polished rice is manufactured by eliminating the fibre-rich bran layer from unpolished rice, also known as brown rice (BR). Brown Rice contains more, nutritional components such as dietary fibres, phytic acid and B vitamins and γ -aminobutyric acid (GABA) than white rice due to the presence of outer bran layer being the main source for the nutritional elements. Now a day, consumption of brown rice (BR) is gaining momentum among health-conscious people due to its better nutritive and organoleptic value than the white rice. It extends its beneficial effects to most of the organs including healthy heart, digestion, brain, bones, muscles, cholesterol and blood pressure. Brown rice is also beneficial for treating skin ailments like psoriasis, promotes healthy skin and restores hair loss. It has anti-aging qualities attributing to the presence of ferulic acid, an antioxidant which helps in the prevention of skin-aging. Brown rice is rich in folate which is extremely essential during pregnancy for healthy growth of the fetus. Small portions of brown rice are also recommended for the patients suffering from candida infections attributing to its richness in digestive enzymes.



Types of rice: Long-grain basmati, black rice, white rice and sticky (or glutinous) rice. Brown rice is one of the healthiest and most-studied types of rice. All varieties of rice are available throughout the year, supplying as much as half of the daily calories for half of the world's population. The reason that makes the brown rice to stand out is the super quality and quantity of nutrients which it offers. Unlike white rice, it does not go through the process of milling and polishing and hence retains its immense treasure of healthful components. The process of milling that converts brown rice into white rice strips away most of its nutritional value. There are many

varieties of brown rice available in the market with their unique flavor, aromatic components and varied concentration of fatty acids.

Brown Rice (BR) Production

When paddy comes into the mill, it contains foreign materials such as straw, weed seeds, soil, and other inert materials. If these are not removed before hulling, the efficiency of the huller and milling recovery will be reduced. The capacity of the paddy pre-cleaner is normally 1.5 times the milling capacity. Brown rice is produced by removing the husk from rough paddy rice. The husk is removed by friction as the paddy grains pass between two abrasive surfaces that move at different speeds. After dehusking, the husk is removed by suction and transported to a storage dump outside the mill. The complete milling and polishing that converts brown rice into white rice destroys 67% of the vitamin B3, 80% of the vitamin B1, 90% of the vitamin B6, half of the manganese, half of the phosphorus, 60% of the iron, and all of the dietary fibre and essential fatty acids. Fully milled and polished white rice is required to be "enriched" with vitamins B1, B3 and iron. Brown rice (BR) is better than that off white rice (WR). It's most consumers typically choose white rice over brown rice because of the difference of appearance. According to the study conducted by the American Journal of Clinical Nutrition, brown rice is the top choice in terms of both nutritional and other inherent healthy benefits.

Nutritional Value of Brown Rice

Brown rice is a natural wholesome food rich in essential minerals such as manganese, iron, zinc, phosphorous, calcium, selenium, magnesium and potassium. Vitamin wealth includes vitamin B1 (thiamine), vitamin B2 (riboflavin), vitamin B3 (niacin), vitamin B6, folate, vitamin E (alpha-tocopherol) and vitamin K. It is a source of protein and adds good amount of fibre content to our diet. Along with this, it is also a provider of health-supportive vital fatty acids.

Health Benefits of Brown Rice

Brown rice in the diet brings tremendous health gains and benefits discussed as under:

Diabetes: Brown rice is beneficial for diabetic and hyperglycemic individuals. It has a low glycemic index which is helpful in reducing insulin surges and assists in the stabilization of blood sugar levels in the body.

Antioxidant activity: Brown rice is rich in powerful antioxidants which extend their protection against the damage caused by oxygen free radicals. It contains an important antioxidant enzyme called superoxide dismutase which protects the cells from oxidation damage during energy production.

Obesity: Brown rice is instrumental in seeking weight control for the people combating with obesity. It contains manganese which helps to synthesize the body fats.

Psychosomatic health for lactating women: Sprouted brown rice is beneficial for the mental health of the lactating mothers. It has also suggested that consumption of brown rice during lactation enhances body's ability to resist stress and improve overall immune defense.

Digestive health: Fiber present in brown rice helps to regulate the bowel function and keeps a fuller feeling. It also shows that the effects of white rice and brown rice during gastric digestion has made it qualitatively evident that the bran layer on brown rice prevents the absorption of acid and humidity resulting in better texture retention. Fiber content also brings relief from other troubling conditions such as constipation and colitis.

Cardiovascular health: Brown rice is rich in selenium which is beneficial for a healthy heart. Consumption of whole grains such as brown rice helps reduce the blockage of arteries due to plaque buildup. This protective action is contributory in the reducing the risk of cardiac disorders such as high hypertension and vascular diseases. In this regard it is suggested that the tissue surrounding the grain of brown rice contains a healthful component which acts against the endocrine protein angiotensin II, implicated in the development of high blood pressure and atherosclerosis or hardening of arteries.

Healthy levels of cholesterol: Brown rice is a healthy option for maintaining healthy levels of cholesterol attributing to the presence of naturally occurring oils. It is observed that it possess hypo-cholesterolemic qualities and regulates cholesterol catabolism. It contains beneficial nutrients that help in lipid and glucose metabolism.

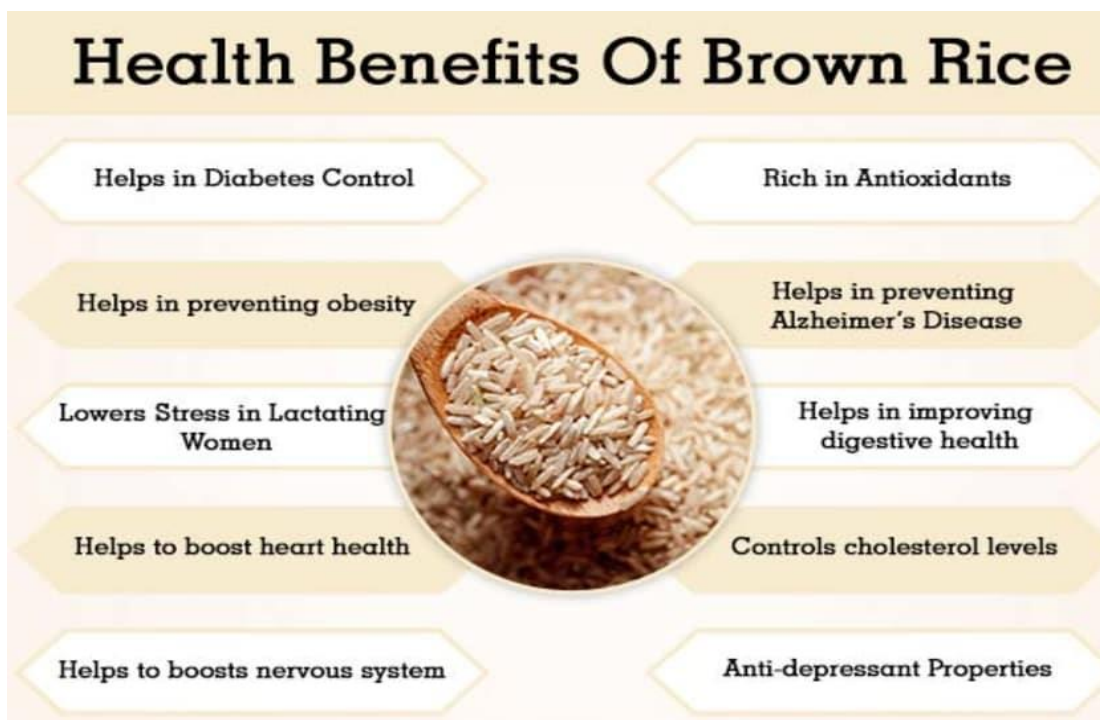
Anti-Cancerous properties: Brown rice is helpful in the prevention of various cancers such as colon cancer, breast cancer and leukemia. This beneficial effect can be attributed to the presence of potent antioxidants and high fiber content in it which has the ability to bind itself to the harmful cancer-causing toxins in the body.

Brain & Nervous system: Brown rice is beneficial for the smooth functioning of the brain and nervous system. It helps in accelerating the metabolism in the brain attributing to the presence of vitamin B and essential minerals such as manganese. Magnesium present in it balances the activity of calcium in the body and helps in the regulation of nerves and muscle tone. It prevents the sudden surge of calcium into the nerve cells and activation of nerve.

Anti-depressant properties: Germinated brown rice possesses anti- depressant qualities and helps in combating anxiety related disorders. The germinated brown rice also contains essential amino acids such as glutamine, glycerin and GABA. These inhibitory neurotransmitters facilitate reduction in the allowance of messages associated with anxiety, depression and stress in the brain resulting in a relaxed state of well- being.

Insomnia: Brown rice helpful in the treatment of insomnia. It is a natural source of sleep hormone melatonin. It enhances the quality of sleep by relaxing the nerves and increasing the sleep cycle.

Strong immunity system: Brown rice is loaded with significant quantities of vitamins, minerals and essential phenolic components which help to boost the immune system of the body. It nourishes the body, accelerates healing and enhances its ability to fight infections.



Bone health: Brown rice is helpful in the maintenance of healthy bones. It is rich source of magnesium which along calcium provides the bones their physical structure. Magnesium-rich brown rice prevents bone demineralization and is beneficial for medical conditions such as arthritis and osteoporosis.

Culinary usage: Rice is a staple food ingredient not just in Asia but over a wide range of population across the world. Brown rice is available in many forms such as long grains which are perfect for cooking stir fried, salads or pilafs, short grains which has a soft and sticky texture perfect for molds or puddings. Sweet brown rice can

serve deliciously for desserts. Brown rice syrup is considered as a healthful sweetener attributing to the presence of nutrients in the brown rice. It gives a sweet, nutty, buttery flavor to baked goods and hot drinks.

Candida Yeast Infections: Brown rice is the perfect adjunct for candida yeast infection treatments given that high glycemic and otherwise sugary/starchy foods are prohibited during most candida treatment protocols.

CONCLUSION

It is observed that Brown rice is a super whole grain packed with high degree of healthy components. It extends its beneficial effects to most of the organs including healthy heart, digestion, brain, bones, muscles, cholesterol, diabetes (blood sugar), obesity (loss in body weight) and blood pressure etc. Brown rice is also beneficial for treating skin ailments like psoriasis, promotes healthy skin, restore hair loss, skin-ageing. It is rich in folate which is extremely essential during pregnancy for healthy growth of the fetus. Brown rice tones up the body and mind and helps combat general weakness and deficits in the body. The whole-grain diets also improve insulin sensitivity and prevent the occurrence of diabetes compared with refined-grain diets. Brown rice (BR) decreased postprandial blood glucose and insulin levels compared with white rice (WR) in humans. Interestingly this article provides the knowledge and several health benefit aspects for switching the staple food from white rice to brown rice consumption among every individual as well as rural farming community (farmers).

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