

## Brown Rice a Nutritional Power Booster

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### SUMMARY

Rice (*Oryza sativa* L.) is a main food source crop and forms much of the world's population's staple food. It belongs to the Poaceae family. Brown rice is whole grain rice that is unpolished and produced by removing only the hull or husk. Brown rice is a nutritious whole grain that is filled with nutrients such as fibre, magnesium, thiamine, calcium, protein, antioxidants, potassium, and healthy fats. An excellent source of manganese is brown rice. It is also recognized as a source of several non-nutrient bioactive compounds known as Phyto-chemicals. To improve the health of the general public/rural population, brown rice consumption is recommended. Therefore, the information in this article relates to the health and nutritional benefits of brown rice and its understanding of the general public/ or individual's acceptability, demand and use.

### INTRODUCTION

One of the world's most important crops is rice. It is a staple food that is commonly grown by the majority of people in more than 100 countries. The total cultivation area of rice is approximately 154 million hectares and the annual production of rice is approximately 594 million metric tonnes worldwide. Over 22% of the global energy consumption is accounted for by rice. Asia is the largest producer of rice, with rice production accounting for about 92-94 percent of total production worldwide. White rice (WR) or polished rice is obtained by extracting from unpolished rice the fibre-rich bran layer, also known as brown rice (BR). Owing to the nature of the outer bran layer being the primary source for the nutritional elements, Brown Rice contains more nutritional components such as dietary fibres, phytic acid and B vitamins and γaminobutyric acid (GABA) than white rice. While brown rice is more nutritious than white rice, the chewy texture and decreased digestibility somewhat restrict its consumption. Because of its better nutritional and organoleptic value than white rice, the consumption of brown rice (BR) is gaining momentum among health-conscious people today.



(Source: <https://www.ttnpalawan.com/blogs/news/health-benefits-of-brown-rice>)

Brown rice is a super whole grain full of high amounts of nutritious components. It spreads its beneficial effects to most tissues, including a healthy heart, digestion, brain, bones, muscles, blood pressure, and cholesterol. Brown rice also helps to treat skin disorders such as psoriasis, encourages healthy skin and restores hair loss. It has anti-aging properties due to the presence of ferulic acid, which is an antioxidant that helps prevent skin ageing. Brown rice is rich in folate, which is extremely important for stable foetal growth during pregnancy. In patients suffering from candida infections, small portions of brown rice are also recommended, owing to its richness in digestive enzymes that are ideal for a compromised digestive system. Brown rice tones up the body and mind and helps fight against the body's general weakness and deficits. There are many distinct rice types, including long-grain basmati, black rice, white rice, and sticky (or glutinous) rice, but not all are produced equal in terms of health benefits. One of the healthiest and most studied types of rice is brown rice. The term "to eat" in certain parts of the world simply means "to eat rice." All kinds of rice are available throughout the year, providing half of the world's population with as many as half of the daily calories.

### **Why Use Brown Rice to Eat more?**

The fact that brown rice is better than white rice is something most of us are aware of. The explanation why it stands out is the excellent quality and quantity of nutrients offered by the brown rice. In comparison to white rice, it does not go through the milling and polishing process and therefore preserves its enormous treasure of safe components. The milling process that turns brown rice into white rice strips much of its nutritious value away. With its distinctive taste, aromatic components and varying concentrations of fatty acids, there are several varieties of brown rice available on the market.

### **Brown Rice (BR) Method to Produce**

BR is unpolished whole grain rice which is developed by using a mortar and pestle or rubber rolls to remove only the outermost layer, the hull of the rice kernel or husk. 67 percent of vitamin B3, 80 percent of vitamin B1, 90 percent of vitamin B6, half of manganese, half of phosphorus, 60 percent of iron, and all dietary fibres and essential fatty acids are lost by the full milling and polishing that turns brown rice into white rice. To be 'enriched' with vitamins B1, B3 and iron, completely milled and polished white rice is required. It's safer to have brown rice (BR) than white rice (WR). Usually, most customers prefer white rice over brown rice because of the disparity in appearance. Although it's real white rice, it doesn't look any more delicious than brown rice. That means it's also healthier. Brown rice is the top alternative in terms of both nutritional and other intrinsic health benefits, according to a report conducted by the American Journal of Clinical Nutrition.

### **BR Nutritional Value**

BR is a good, natural food that is rich in important minerals, such as manganese, iron, zinc, calcium, selenium, phosphorous, magnesium and potassium. Vitamin B1 (thiamine), vitamin B2 (riboflavin), vitamin B3 (niacin), vitamin B6, folate, vitamin E (alpha-tocopherol) and vitamin K are all vitamin rich. It is a protein source and contributes a decent amount of fibre to our diet. Along with this, it is also a source of essential fatty acids that promote wellbeing.

### **Health Benefits of BR**

In the diet, brown rice provides immense health gains and benefits discussed as:

#### **Diabetes**

For diabetic and hyperglycemic people, brown rice is helpful. It has a low glycemic index that helps to minimise insulin spikes and helps the body to regulate blood sugar levels. It is found to be rich in phytic acid, fibre, and basic polyphenols in this respect. Compared to white rice, it is a complex carbohydrate that assists in slower sugar release. The American Diabetes Association also suggests that diabetics choose nutrient-dense brown rice over white rice to satisfy the need for important vitamins, fibre and minerals in their diet.

#### **Antioxidant activity**

Brown rice is rich in potent antioxidants that extend its defence against oxygen-free radical damage. It contains an essential antioxidant enzyme called superoxide dismutase that, during energy production, protects the cells from oxidation harm. A comparative analysis of white and brown rice has shown that brown rice exhibits superior activity of radical scavenging and helps prevent various diseases mediated by oxidation, such as coronary heart diseases.

### **Obesity**

For people dealing with obesity, brown rice is instrumental in finding weight reduction. It includes manganese that helps to synthesise fats in the body. In terms of the reduction in body mass index and body fat, the intake of whole grains such as brown rice has beneficial effects on the body. It also increases the function of the antioxidant enzyme glutathione peroxidase and helps increase the levels of HDL cholesterol in obese individuals.

### **Neurodegenerative disorders**

Brown rice tends to avoid neurodegenerative problems due to the excess of gamma-aminobutyric acid, such as Alzheimer's disease. Sprouted brown rice contains healthy components that assist in the inhibition of the related harmful enzyme called prolylendopeptidase with the condition of Alzheimer's. It is also useful for other conditions linked to the brain, such as dementia and amnesia.

### **Psychosomatic wellbeing of lactating women**

Sprouted brown rice is beneficial to the lactating mothers' mental health. It has also proposed that brown rice intake during lactation increases the ability of the body to withstand stress and enhances overall immune protection during lactation.

### **Digestive health**

To maintain a balanced digestive system, brown rice is a balanced staple that can be added to the daily diet. Fibre helps control the role of the bowel and retains a fuller feeling. It also demonstrates that during gastric digestion, the effects of white rice and brown rice have made it qualitatively clear that the bran layer on brown rice prevents the absorption of acid and moisture, resulting in better preservation of texture. The content of fibre also provides relief from other alarming situations, such as colitis and constipation.

### **Cardiovascular health**

Brown rice, which is good for a healthy heart, is abundant in selenium. Consumption of whole grains such as brown rice helps minimise artery blockage due to the deposition of plaque. This preventive action helps reduce the risk of heart problems, such as high blood pressure and vascular disease. In this regard, it is proposed that a healthy portion of the tissue surrounding the brown rice grain works against the endocrine protein angiotensin II, which is involved in the production of high blood pressure and atherosclerosis or hardening of arteries.

### **Better cholesterol levels**

Brown rice is a healthy choice for maintaining healthy cholesterol levels due to the inclusion of oils that are naturally available. It is noted that it has hypo-cholesterolemic characteristics and controls the catabolism of cholesterol. It contains beneficial nutrients which aid in the metabolism of lipids and glucose. In subjects with chronic ethanol misuse, the intake of brown rice showed substantial changes in serum and HDL cholesterol concentrations. Germinated brown rice extract has also been proposed to help avoid the increase in liver triglycerides due to excessive alcohol consumption due to the presence of gamma-aminobutyric acid.

### **Anti-Cancer properties**

In the prevention of various cancers such as colon cancer, breast cancer and leukaemia, brown rice is helpful. The presence of potent antioxidants and high fibre content can be attributed to this beneficial effect. The

fibre content in brown rice has the potential to bind itself to the body's harmful cancer that causes toxins. This prevents the toxins from binding to the colon walls and allows the body to remove them. Brown rice's chemopreventive properties have verified that its bran has it contains essential phenols, such as triclin, ferulic acid, and caffeic acid, which are contained in white rice at much lower levels. These phenolic components are essential in inhibiting colon and breast cancer cell proliferation. The stimulatory effect of germinated brown rice on the induction of apoptosis and its inhibitory effects on the development of cancer cells from leukaemia also appear to be evident. In addition, it has anti-tumor effects.

### **Brain & Nervous System**

The smooth working of brown rice is advantageous. The nervous system and brain. This helps to speed up the brain's metabolism due to the availability of vitamin B and basic minerals, such as manganese. The magnesium contained in it regulates the body's calcium activity and helps to control nerves and muscle tone. This prevents rapid calcium spikes and nerve activation from accessing the nerve cells. This helps preserve relaxation of the nerves and muscles and avoids unnecessary contraction. It also plays a crucial role in preventing various brain disorders caused by oxidative damage. Vitamin E is present in it.

### **Anti-depressant properties**

Germinated brown rice has antidepressant properties and helps fight conditions associated with anxiety. Important amino acids such as glutamine, glycerin and GABA are also present in the germinated brown rice. These inhibitory neurotransmitters make it easier to suppress signals related to anxiety, depression and brain stress, resulting in a comfortable state of well-being.

### **Insomnia**

Brown rice is useful for insomnia therapy. It is a natural source of melatonin, a sleep hormone. By calming the nerves and increasing the sleep cycle, it improves sleep quality. Good immunity system Brown rice contains large amounts of vitamins, minerals and essential phenolic components that help improve the body's immune system. It nourishes the body, speeds up healing and increases its capacity to combat infections.

### **Bone health**

In order to preserve healthy bones, brown rice is beneficial. It is rich in magnesium, which gives the bones their physical structure alongside calcium. Bone demineralization is avoided by magnesium-rich brown rice and is helpful for medical conditions such as arthritis and osteoporosis.

### **Culinary use**

Not only in Asia, but across a large range of populations worldwide, rice is a staple food ingredient. Brown rice is available in many kinds, such as long grains that are ideal for stir fried cooking, salads or pilafs, short grains that are ideal for moulds or puddings and have a soft and sticky texture. Sweet brown rice may be ideal for desserts. Brown rice syrup, due to the availability of nutrients in brown rice, is considered a safe sweetener. It gives baked goods and hot beverages a sweet, nutty, buttery taste.

### **Great Baby Food**

Because of the dense natural nutrients and fibre content, brown rice itself is the great baby's first food. As babies develop rapidly, this is a much better option than refined white rice cereal products. It is a diet rich in nutrients that helps sustain a rapid growth cycle.

### **Candida Yeast Infections**

Brown rice is the ideal adjunct for therapies for candida yeast infection because during most candida treatment procedures, high glycemic and otherwise sugary starchy foods are prohibited. Coupled with the high fibre content, the natural digestibility of brown rice can help sensitive digestive systems recover from the overgrowth of candida species. Finally, brown rice for both vegetarian and vegan diets is absolutely delicious and

a great staple. In most vegetarian recipes, brown rice can be used as a white rice substitute and offers a full, rich and slightly nutty flavour. For vegetarian pancakes, breads and other baked goods, brown rice flour can be used. All in all, the healthy option obviously is brown rice.

## CONCLUSION

Brown rice is shown to be a super whole grain filled with high amounts of nutritious components. It extends its beneficial effects to most tissues, including a healthy heart, digestion, brain, bones, muscles, cholesterol, diabetes, obesity (loss of body weight) and blood pressure etc. (blood sugar). Brown rice is also useful for the treatment of skin disorders such as psoriasis, encouraging healthy skin, restoring hair loss, and skin ageing. It is rich in folate, which is extremely important for stable foetal growth during pregnancy. Brown rice tones up the body and mind and helps fight against the body's general fatigue and deficits. Compared with refined-grain diets, whole-grain diets also improve insulin sensitivity and prevent the development of diabetes. Compared to white rice (WR) in humans, brown rice (BR) reduced postprandial blood glucose and insulin levels. Interestingly, this article provides the information and several aspects of health benefits for every person as well as rural farming group (farmers) to turn the staple food from white rice to brown rice consumption.

## REFERENCES

<https://www.ttnpalawan.com/blogs/news/health-benefits-of-brown-rice>

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