

January 5, 2004

# Heart To Heart Talk

With Philip S. Chua, M.D.

## Brown Rice: A Healthier Choice

Misinformed rice lovers eat white rice and consider brown rice as food for the peasants, the poor, and for animals. How very wrong they are! Modern day science and health food experts have proven that brown rice is far better and the healthier rice. Brown rice is the most balanced of all cereal grains. In 1897, it was discovered that eating white rice caused beri-beri, a potentially fatal disease due to lack of thiamin (vitamin B1), because this essential vitamin was stripped out of the rice in the processing. Since then, following governmental regulations, white rice was enriched with the naturally occurring vitamins. Unfortunately, these vitamins are markedly reduced by washing prior to cooking. Also, rice manufacturers could not put back the all-important fiber and valuable nutrients known as phytochemicals which are cholesterol-lowering, heart disease and cancer-fighting ingredients. That's why brown rice is far superior to white rice. Indeed, brown rice is fit for royalty and the affluent.

### What are Phytochemicals?

Phytochemicals are healthy and protective biochemicals naturally found in plants, including brown rice, vegetables and fruits, nuts and grains. These anti-oxidant substances protect plants and their fruits, and all animals, including humans, from the health-damaging effects of oxidation on our cell structures, especially DNA. Phytochemicals, when ingested, serve as our biochemical defenses against bacteria, fungi, viruses, and cancer. Throughout civilization, mothers have coerced, intimidated or bribed their children to eat vegetables and fruits, nuts and grains, because "they are good for you, with all those nutrients, vitamins and fiber." Obviously, even then, mothers knew best, well ahead of today's science and technology which have proven and confirmed what mother knew for centuries.

### Origin of Rice

History books show that rice originated in China, as far back as 2500 B.C. This staple food has fed more generations of people all over the globe, over a longer period of time in history, than any other crop. From China, the tradition spread throughout Sri Lanka, India, and surrounding regions, then to Greece and the Mediterranean. It then passed on throughout Southern Europe and North America, and reached the New World. It was brought to Brazil from Portugal, and from

Spain to South and Central America. In many parts of the world, brown rice and wild rice are preferred.

## **The Brown Rice Advantage**

Contrary to the popular belief that rice is nothing but carbohydrate, rice in general, especially brown rice, contains carbohydrates, protein, fats, vitamins and minerals. The unpolished brown rice has higher content of protein, minerals, fiber, flavor and the anti-oxidant phytochemicals than white rice, which is mostly starch. Other whole grains that are healthy like brown rice containing those essential ingredients and phytochemicals are: oats, barley, rye, wheat, buckwheat, corn, quinoa, millet, and wheat berries. White rice is certainly quite inferior to brown rice and to all these grains when it comes to nutrition and health benefits they provide.

## **Varieties of Brown Rice**

According to *Cooking Tips* with Ann Gentry, there are 3 types of brown rice: short grain, medium grain and long grain brown rice. The short grain is best for cooler climates or winter cooking. The medium grain, which is lighter than the short grain, is good all-year round. The long grain is the fluffiest and lightest, and closest to white rice in texture, good for warmer climates. The sweet variety of brown rice is sticky and best combined with other grains. Wild rice has a strong nutty flavor and also good in combination with brown rice or other grains. Basmati rice is similar to long grain brown rice and is aromatic. Cooking brown rice requires more water than white rice.

## **How Rice is Prepared**

There are about 100,000 varieties of rice and they come in different sizes, color and shapes. Paddy rice is what is harvested off the stalk, and has a tough husk that is not edible. When the husk is separated with minimal machine or hand pounding, and discarded by winnowing, the result is brown rice. To produce white rice, milling (termed “whitening”) is done to remove the bran (the brown skin under the husk) and the germ or embryo (which provides life to the kernel of rice to grow into rice plant). Rice is rubbed together under intense pressure by a machine. This further removes not only the life force of the rice but also most nutrients, oils, vitamins and most of the fiber. To replace some of what is removed, 90% of rice manufacturers in the United States enrich the white rice with powdered nutrients. But rinsing prior to cooking removes most of these. Scientists all over the world agree that this process makes white rice inferior and less healthy compared to brown rice, which retains its natural wholesomeness, the phytochemical nutrients, vitamins, minerals, and fiber.

## **Does White Rice Contribute to Diabetes**

The incidence of diabetes mellitus in the Philippines is very high, in proportion to its population, compared to other Asian countries, Europe and the United States. Worldwide, there are about 180 million type 2 diabetics and 18 million type 1. In China, there are 21 million people who are diabetics. About 2.7 million of Filipinos have diabetes. Ninety percent of all diabetic worldwide are type 2, or adult-onset non-insulin dependent diabetes mellitus (NIDDM). The pathology here is the inadequate insulin production by the Beta Cells in the Islets of Langerhans in the pancreas, and/or the cells' inability to use the insulin produced. This leads to persistently high blood glucose (sugar) level, called diabetes mellitus. In the Philippines, the incidence of advanced kidney disease as a complication of diabetes has risen from 26% in 2001 to 31% in 2003. This is very high. Some of the risk factors in the development of diabetes are obesity, high-fat and high-simple-carbohydrate diet, smoking and lack of exercises. Eating white rice, which is basically starch, has been implicated as one of the probable causes of the alarmingly high incidence of diabetes in the Philippines. White rice breaks down into glucose more easily and readily compared to brown rice, resulting in a more drastic elevation of blood sugar and a more dramatic insulin reaction.

## **A Comparison of Contents**

There is a stark difference in the nutritional value between un-enriched and un-processed brown rice and enriched fortified white rice. Brown rice has 4% more calories because it has more fat, 19% more protein, 219% more magnesium, 203% more vitamin K, 185% more vitamin B6, 86% more B2, 33% more B3, 144% more folacin, 147% more phosphorus, 139% more potassium, 37% moreelenium, 25% more zinc, and 349% more dietary fiber. Because white rice is enriched, it has 21% more vitamin B1, unless it has been pre-washed off before cooking. The bran in brown rice contains essential oils and fibers, which is useful in the prevention of gastrointestinal and heart disease, rheumatoid arthritis, etc. The vast difference in the nutritional and health value of brown rice is obvious.

## **The Glycemic Index**

The Glycemic Index indicates how fast a certain food raises the blood sugar level after ingestion. The lower the Glycemic Index, the healthier it is. Brown rice has a low Glycemic Index (55), compared to white rice, which is 70, which even goes up to 87 with parboiling. A donut has 76, practically pure sugar that elevates the blood glucose rapidly. The occurrence of diabetes later in life (Type 2, NIDDM) has been associated with extra high consumption of foods with high Glycemic Index, like cakes and other pastries, non-diet soft drinks, regular bread, white rice and other carbohydrates. Examples of other foods and their Glycemic Index: most vegetables, beans, etc.(30-40); bran (51); soy milk (31); yogurt (14); grapefruit (25); orange (43); papaya (58); banana (56); oatmeal (48); wheat (67); corn flakes (83)' corn chex cereals (83); and, cheerios (74). Intravenous glucose has a Glycemic Index of 100, because when administered, it raises blood glucose or sugar level 100% instantly. This gives a comparative basis for all the Glycemic Index for the various foods on

**the list above. For better health, weight control and daily nutrition, we would prefer foods with low Glycemic Index. Brown rice is one of them.**