

## Cardiovascular Health

A healthy cardiovascular system is essential for maintaining well-being and vitality. But, this system's health is often threatened by the formidable foes cholesterol and triglycerides, which contribute to coronary heart disease (CHD). CHD, which can lead to heart attack, is the most common heart disease in the United States and is often simply called heart disease. Heart disease occurs when the arteries that supply the heart with blood become hardened by calcification and narrowed by a buildup of excess cholesterol and fat (plaque). When a clot forms over the plaque, blood flow through the artery becomes blocked causing a heart attack. According to the Centers for Disease Control and Prevention, heart disease is the leading cause of death in the United States and is a major cause of disability. Almost 700,000 people die of heart disease in the U.S. each year (about 29% of all U.S. deaths).

Fortunately, the threat of heart disease can be reduced or prevented by taking steps to decrease risk factors such as smoking, high blood pressure, high cholesterol, obesity, physical inactivity and diabetes. Lifestyle modification can address most of these risk factors. Additionally, certain nutritional ingredients can aid in supporting optimal cardiovascular system health. Red yeast rice, phytosterols, vitamin K and flavonoids, particularly polymethoxylated flavones (PMFs), are known to impart heart healthy benefits.

High blood cholesterol is one of the major risk factors for cardiovascular disease. Genetic predisposition accounts for high cholesterol levels in some individuals, but for the majority, unhealthy lifestyle and eating habits are key risk factors. Reducing LDL (bad) cholesterol and elevating HDL (good) cholesterol are positive moves toward cardiovascular health.

A diet high in plant-based foods is associated with cardiovascular benefits. These benefits may be partly due to plant sterols, or phytosterols. Phytosterols are essential components of plant cell membranes and are found abundantly in wheat germ, wheat bran, corn oil, peanuts, macadamia nuts, canola oil and olive oil. Structurally phytosterols resemble cholesterol. Once ingested, they compete with cholesterol during the absorption process, resulting in an inhibition of cholesterol absorption and a decrease of LDL levels in the body. Numerous research studies have documented the efficacy and safety of phytosterols in lowering cholesterol.<sup>1-2</sup> The health benefits of phytosterols are so encouraging that the FDA approved a health claim for their role in the prevention of heart disease. Products high in vegetarian ingredients are a good source of plant sterols. Phytosterol is an ingredient in our Cholester-Reg<sup>®</sup> II.

Flavonoids are also natural compounds found in a wide variety of fruits and vegetables. Over 4,000 different flavonoids have been identified, many of which are known to impart a variety of health benefits. A subset of flavonoids known as polymethoxylated flavones (PMFs), found in a variety of citrus fruits, possess especially beneficial properties. The most common citrus PMFs, tangeretin and nobiletin, are found in the peels and juice of tangerines and oranges.

A joint study by the U.S. Department of Agriculture and KGK Synergize, a Canadian nutraceutical company, has shown that adding PMFs to the diet is effective reduces LDL as well as total cholesterol and triglycerides.<sup>3</sup> These actions are attributed to an inhibition of the LDL structural protein, apolipoprotein B, in liver cells.<sup>3</sup> Apolipoprotein B is required for the formation of LDL cholesterol. It also facilitates the transport and deposition of cholesterol in the arteries. Inhibition of apolipoprotein B is therefore associated with reduced LDL levels and a decrease in arterial plaque formation.

Red yeast rice, a product of rice fermented with *Monascus purpureus* yeast, has long been used in China as both a food and medicinal substance. Recently, it was discovered that red yeast rice contains substances that are similar to prescription medications that lower cholesterol. It inhibits a body enzyme called HMG-CoA reductase, an essential enzyme involved in hepatic cholesterol synthesis.<sup>4</sup> In a 12-week, controlled study at the Center for Human Nutrition, UCLA School of Medicine, red yeast rice was found to significantly reduce total cholesterol, LDL cholesterol and triglycerides compared with placebo, while HDL cholesterol levels remained unchanged.<sup>4</sup> Taking red yeast rice may lower the risk of heart disease by helping to manage cholesterol levels. NSP offers a Red Yeast Rice product formulated to support a healthy circulatory system.

#### References

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