

Center for Integrative Medicine

Dietary Supplements: D-ribose

Dr. Kathi Kemper's Tips

D-ribose is a kind of simple sugar the body uses as the backbone of RNA. After undergoing metabolic changes (phosphorylation to D-ribose-5-phosphate), it is used in the energy pathways as ATP and NADH and other chemicals critical to metabolism. Our bodies can also use it to help make amino acids, including tryptophan.

Dietary sources. Mushrooms, beef, poultry, cheddar cheese, cream cheese, milk, eggs, anchovies, caviar, herring, sardines, and yogurt

Uses. It has mostly been used to help patients suffering from heart disease, chronic fatigue, and fibromyalgia. It may improve blood flow through the heart. There are not many studies comparing it with other therapies for these conditions. In one open study, about 2/3 of patients with chronic fatigue who took d-ribose and knew they were getting it felt much more energetic after about 10 days to 2 weeks of therapy. The NIH is sponsoring ongoing research about D-ribose.

Clinicians sometimes give ribose intravenously (by IV) as part of an imaging procedure used to measure the extent of damaged heart muscle in people with heart disease. Ribose has also been given iv to patients with a rare genetic disorder, myoadenylate deaminase deficiency (MAD) to prevent symptoms such as cramping, pain, and stiffness with exercise.

Dose. The dose used in most positive studies was 5000 milligrams (5 grams) three times daily (or 3000 milligrams, 3 grams, twice daily) for adults with chronic fatigue. Patients with heart disease have taken larger doses: 15 grams, four times daily.

Safety. Ribose is generally safe. As with any supplement, it can cause upset stomach, nausea, or diarrhea. It has not undergone testing for women who are pregnant or nursing. There are theoretical concerns that it could lower blood sugar when given in large doses by iv, but hypoglycemic reactions have not been reported in patients taking it by mouth.

Duration. It is considered safe for short-term use. Long-term studies have not been conducted.

The US **National Library of Medicine** does not have a handout on D-ribose

Quality: No government agency routinely tests D-ribose products. Dietary supplements like D-ribose are regulated more like food than like drugs. There is variability in the quality of dietary supplements, and you cannot always tell what is in a product from reading the label, even the fine print. We recommend using brands that have the USP stamp of approval.

ConsumerLabs has not tested d-ribose products. I generally recommend avoiding products produced in developing countries including China.