



# ATP-Ribose

## DESCRIPTION

ATP Ribose, available from Medical Wellness Associates, are an all natural D-ribose supplement clinically proven to help restore and replenish core energy. D-ribose is a natural pentose sugar that is designed for the support of cardiovascular health, fatigue, energy production, and mitochondrial function. Ribose Factors are great tasting with natural orange/vanilla flavoring sweetened with xylitol, and readily absorbed into the body.

## FUNCTIONS

ATP Ribose contains pure D-ribose, a safe and clinically researched ingredient that supports the natural way our bodies produce adenosine triphosphate (ATP), the energy currency of the cell. Ribose is the vital structural backbone of critical cellular compounds called purines and pyrimidines. Our bodies must have an adequate supply of purines and pyrimidines to form major cellular constituents such as our genetic material (DNA and RNA), numerous cofactors, certain vitamins, and, importantly, adenosine triphosphate (ATP). Ribose is the starting point for the synthesis of these fundamental cellular compounds, and the availability of ribose determines the rate at which they can be made by our cells and tissues.

D-ribose is a structural component of DNA, RNA, ATP, GTP, flavins (FAD, riboflavin) and other important nucleotides found in all living cells. Ribose is formed naturally via the pentose phosphate pathway. This pathway is slow and rate-limited in cardiac and skeletal muscle due to an inherently low concentration (lack of expression) of the enzymes, glucose-6-phosphate dehydrogenase and 6-phosphogluconate dehydrogenase. The product of this pathway is ribose-5-phosphate, which in turn is converted to 5-phosphoribosyl-1- pyrophosphate (PRPP), the primary driver in the synthesis and salvage of purine nucleotides. No other compound can be used by the body for this metabolic purpose.

Purine nucleotides (ATP and its precursors) lost due to ischemia, hypoxia, or genetic predisposition are replaced via the purine nucleotide pathway. This pathway is rate limited by the availability of ribose in tissue. Administration of exogenous ribose bypasses the rate-limiting steps in the pentose phosphate pathway, resulting in a significant acceleration of PRPP. Renewed concentration of ATP is accompanied by an increased energy potential in the cell, also known as the “energy charge.” Cardiac and skeletal muscle functions (i.e. contraction, cell wall maintenance, relaxation, polarization of the cell membrane) each require a different, quantifiable energy charge to drive or provide allosteric regulation for each function. Restoration of cellular energy charge restores function consistent with the degree of energy charge restored. D-ribose is indicated for sports and fitness activities because it helps to reduce the loss of energy during stress and accelerate energy and tissue/muscle recovery. Endurance athletes and strength training athletes will both benefit from the effects of supplemental D-ribose. Unless our hearts have an adequate supply of ribose, they simply cannot satisfy their astonishing energy demand. Our bodies make ribose naturally, but in times of stress the need is greater than our supply to satisfy the loss of energy from our cells. That is why supplementing with d-ribose can support proper heart function and helps maintain healthy stroke volume during and after high intensity exercise. A study by Olman et al. in 2003 showed beneficial effects on diastolic function and quality of life in compromised patients after only 3 weeks of supplemental D-ribose. Although D-ribose is a five-carbon monosaccharide, it does not raise blood sugar. D-ribose is non-GMO. D-ribose is rapidly and readily (~95%) absorbed with peak blood levels found within 30 – 45 minutes.

*(continued on reverse)*

Ribose not taken up by the cell is excreted unchanged in the urine. D-ribose is GRAS (generally recognized as safe), a determination that results only after considerable toxicology studies are performed and an expensive and time consuming FDA process is completed. Xylitol is a naturally occurring carbohydrate. It is found in fibrous vegetables and fruit. Xylitol is only slowly absorbed and partially utilized; therefore a reduced calorie claim is allowed: 40% less than other carbohydrates. In addition, the body does not require insulin to metabolize xylitol. A number of studies have shown that xylitol actually interferes with bacteria's ability to adhere to body tissues (especially in the mouth and nasal passages). Furthermore, xylitol has the unique effect of diminishing bacteria's ability to produce biofilm – thereby making the bacteria more susceptible to natural immune system defenses. Regular use of xylitol may help prevent plaque from gaining hold on dental surfaces.

## INDICATIONS

ATP Ribose are natural D-ribose chewable tablets clinically proven to help restore energy, support cardiac function and reduce muscle stiffness, soreness, and fatigue.

## FORMULA (201245)

One chewable tablet contains:

Calories .....	10
Total Carbohydrates.....	2 g
Sugars (from D-Ribose).....	1.67 g
Sugar Alcohol .....	0.5 g
D-Ribose.....	1.67 g

Other ingredients: Xylitol, cellulose, hydroxypropylcellulose, natural orange and vanilla flavors, citric acid, mannitol, vegetable stearate, stearic acid, natural palm wax(*Copernicia prunifera*), and silica.

## SUGGESTED USE

Usual dosage: Take one chewable tablet one to three times daily with food.

Alternative dosage: 1-3 chewable tablets just before and just after exercise or physical activity.

**CAUTIONS:** Mild, transient hypoglycemia may occur if taken on an empty stomach. Insulin dependent diabetics and pregnant women should consult their physician before use. Ribose may cause a transient increase in uric acid levels; therefore those that have chronic gout should consult their physician before use.

## SIDE EFFECTS

No adverse effects have been reported.

## STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

## REFERENCES

### HEART HEALTH

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These statements have not been evaluated by the Food and Drug Administration.  
 This product is not intended to diagnose, treat, cure, or prevent any disease.

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