

## Boost Energy And Strengthen The Heart With Ribose

It is possible to boost energy and strengthen the heart with ribose, a monosaccharide found in all living cells, even those of plants. Found naturally mainly in the stereoisomeric form of D-ribose, it is an essential component of the human metabolism that generates energy from food and is also critical in ensuring normal heart function.

D-ribose is not regarded as an essential nutrient since it is easily synthesized in the body, but it is essential to life. It can be synthesized through human biochemistry from other sugars when needed, and so a supplement is rarely required, except for specific conditions that need the properties that it possesses. This is true of many of the essential chemicals in the human body.

The reason that the human race developed was that the chemicals essential to its life were robust and either readily available, or produced by the body itself from readily available raw materials. D-ribose is contained in all living matter so is contained in our diet, whatever we eat. The other form of ribose, L-ribose, is not biologically significant and plays no part in animal biochemistry. D-ribose is also commonly referred to as just ribose, as it will be from hereon. Ribose supplements are obtained through the fermentation of corn syrup but are rarely needed.

Adenosine triphosphate (ATP) is the molecule that controls the production of energy in muscle fibers, and allows muscles to contract and relax without which life could not exist, since it is responsible for all movement. ATP is formed in two different ways, each of them involving D-ribose. One is through biochemistry involving the use of ribose in producing new ATP, and the other is from the recycling of used or old ATP, also involving D-ribose. It is the latter process that is the main source of ATP.

The sugar also forms the carbohydrate base of the nucleotides RNA and DNA, the essential components of living cells. Without DNA and its precursor RNA, no life could exist and you would not be reading this. DNA is the building block of chromosomes and genetic material, and the backbone of the DNA structure is that of ribose. Ribose, therefore, can be said to be an essential chemical for all life, and so it is. However, practically every chemical involved in human biochemistry can be said to be essential for human life.

However, it is its part in the production of ATP that is the source of the effect of D-ribose on the heart muscle, since the cardiac muscle is very vulnerable to ATP depletion. It has been demonstrated that heart failure starts with a reduction in the energy levels of the cardiac muscle that can be brought about by a reduction in ATP levels.

When you consider that ATP with calcium forms ADP (adenosine diphosphate) and phosphorus, and with it a release of energy in the form of a jolt to the muscle fibers of the heart, then it is not surprising that a lack of ATP could cause a heart muscle to fail to operate as it should. In order to get working again to create energy, the ADP has to get together with magnesium and ribose and create ATP again. For this to occur there has to be a good blood flow containing ribose, ADP and magnesium in the area of the muscles in question. This is a simplistic explanation, but relevant nevertheless.

When blood flow to parts of the heart is restricted by a heart attack, the levels of ATP have been found to rapidly reduce, and be very slow to recover. This recovery in the concentration of ATP in the heart muscle can be accelerated by administration of D-ribose that appears to enhance the speed of its biochemical production. The ribose appears to be little affected by the liver, where many biochemical syntheses take place, but is transported unchanged to the cells of the cardiac muscle where the reaction occurs.

It is in the treatment of heart attacks, then, that the use of D-ribose supplements seems most indicated. Normally there is sufficient in the diet for normal needs, and it is also produced in the body from other sugars including pentose and glucose. Some have claimed that D-ribose supplements can be used to boost the energy levels of athletes, but there is no evidence that ribose has this effect. It is probably a claim made through the ignorant belief that all sugars give energy. In fact many do, but not in the way needed to enhance athletic ability, but more to enhance the chances of life continuing.

Where ribose is used for the control of heart disease or arterial blockage, the dose should be started off at an effective level, and then reduced to the minimum level at which it remains effective.

D-ribose can also be synthesized in the body to Coenzyme A, responsible for the breakdown of fatty acids and other essential biochemical reactions, and ribose itself can be formed from glucose that is essential for the production of glycogen used to store energy in the liver. A problem associated with D-ribose supplements is that they can increase the levels of uric acid in the blood. It should therefore be avoided by those with gout, as it should also be by diabetics since ribose can lead to hypoglycemia.

Should such patients need D-ribose supplements to help with heart problems, then they must be administered under close supervision by a physician who is aware of the patient's complications. The same is true of nursing mothers and pregnant women, who should avoid ribose supplements unless they are absolutely necessary for the treatment of severe heart problems.

D-ribose is a common substance in nature, and should rarely need supplemented in the human diet. It is effective in helping the heart recover after a heart attack, and supplements should only be used under medical supervision. It is an important biochemical component in cell formation and the use of energy by muscles, though there are no specific foodstuffs that need be included in the diet to ensure a sufficient intake.

### About the Author

More information on [Ribose](#) can be found at <http://vitanetonline.com/> to help support proper heart function and boost energy.

Source: <http://www.healthcrazed.com>