

When calcium gets into a smooth muscle cell it interacts with contractile proteins to cause muscle contraction (10). CCBs, as their name suggests, block calcium from entering the cell and therefore CCBs have a relaxing effect on blood vessels. However, magnesium has the same effect. Magnesium is a natural calcium channel blocker.

Magnesium, in many situations, counters the actions of calcium. Magnesium and calcium work as checks and balances on each other (11). Calcium can be thought of as a stimulator, and magnesium a calming/relaxing agent.

Studies going back almost a century have shown the blood pressure lowering effects of magnesium [12]. And lower dietary intake of magnesium has been linked with higher blood pressure [13-15]. However, the circulation improving actions of magnesium are not limited to its relaxation action on smooth muscle. Magnesium has also been shown, through various mechanisms, to improve the function of the endothelium (the cells that form the lining of blood vessels) [16-18].

Arrhythmia

Arrhythmia is a problem with the rate or rhythm of the heartbeat - the heart can beat too fast, too slow, or with an irregular rhythm. Most arrhythmias are harmless, but some can be very serious. During an arrhythmia the heart may not be able to pump enough blood around the body [19], which can lead to damage to the brain, heart, and any other parts of the body that are deprived of blood and oxygen.

A heartbeat is a single cycle in which the heart's chambers relax and contract to pump blood. The heartbeat is regulated by electrical signals, starting with the Sinus Node (or SA Node), which corresponds to the heart