

# MUSCLES need MAGNESIUM

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I grew up on Milk of Magnesia. And I hated it! Whatever was wrong with us as kids, we got a dose of milk of magnesia and it usually fixed us. I could never work out how it could fix both constipation and diarrhoea, but it did. Now I know why. It normalises muscle function, is an alkaliser and excess hurries out the other end.

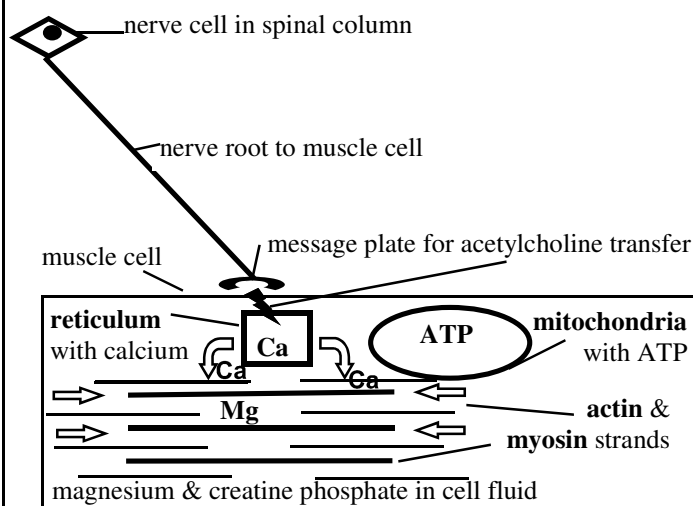
In WA our soils are some of the oldest in the world, and are low in many minerals, including magnesium. Settlers here have always needed a source of extra magnesium. I remember my grandfather telling me as a child - "Never forget about the Epsom salts - some day you'll need it"

Calcium however, is high in our soil. Limestone has 80% calcium. We do not need extra calcium here, but we do need magnesium.

These two minerals balance each other in the body. Calcium contracts. Magnesium relaxes. They have opposite actions. Calcium is high in the bones, in blood and in the intra-cellular fluid. Magnesium is high inside the cell.

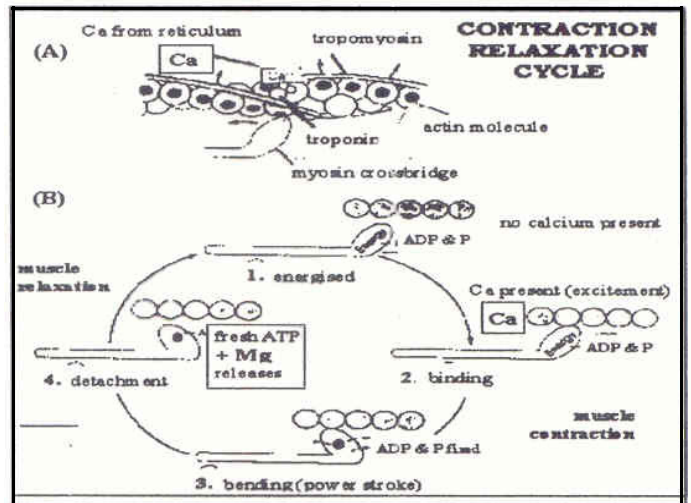
Muscle contracts because the message from the nerve enters the muscle cell to tell the calcium to get out of its special box, called the reticulum, and get to work attaching to the actin strand of the muscle tissue.

## MUSCLE CELL ACTIVATION



This attachment frees another site on the actin for the myosin head to stick. The tricky bit is like the tar baby - making the myosin let go again. This is where the magnesium comes in with a new ATP (unit of energy) to prepare for the next action movement. In the presence of magnesium and ATP, actin and myosin part hands and the calcium is sent back to its box.

Without the magnesium this won't happen and the muscle will stay locked and tight. We call it cramp or knotted muscles.



Magnesium has many other functions. It is an integral part of practically every chemical equation that occurs in the body. It has a calming effect on the body. If we were to use one word to describe lack of magnesium, it would have to be **"sensitivity"**. When we don't have enough magnesium we become "strung out - at breaking point". The skin becomes sensitive to touch. Muscles become sensitive and start twitching, jumping, spasm, cramp. We develop noise sensitivity - "turn it down - turn it off!" We may grind our teeth - particularly at night when we are asleep. (We may even sleep with the whites of the eye showing when our magnesium low.) My father, grandfather, (and myself) have all twitched our feet, driving others to distraction. If I am short of magnesium I fidget and twist and can't sit still. Take an extra tablet and I'll sit as quietly as everyone else!

Headaches, backaches, muscle aches, all disappear with extra magnesium. I don't keep painkillers anymore. Magnesium works faster - in about 5 minutes. Extra calcium in foods like cheese and icecream can unbalance us. If I have cheese I need extra magnesium to balance

Be careful what you buy. It is the amount of **"elemental"** magnesium that matters. This is in the fine print on the bottle and will vary from brand to brand even though the 500mg chelated on the front label stays the same. Usually we need to take 200 - 400 mg elemental magnesium in 2 daily doses. It lasts about 12 hours in the body. Some people may need up to 1000mg on some days. Excess will give diarrhoea. Use bowel tolerance and symptoms to find the dose your body needs to function well.