

The Problem

Popular blood pressure medications block vitamin C uptake

Every year millions of people are given a type of prescription drug known as "channel blockers", which are widely used for controlling hypertension, arrhythmia, angina pain, and other disorders.

The effect of these drugs is based on blocking microscopic channels of the cell membranes that allow calcium ions to enter the cells. This leads to reduced cellular functioning, such as a decrease in the rate and force of the heartbeat. Through this approach, various symptoms are supposed to be alleviated.

Channel blockers are among the 10 most commonly prescribed drugs in the USA and most other countries.

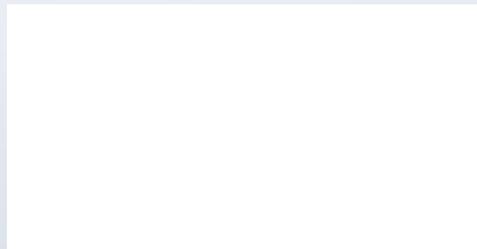
Worldwide sales of these drugs have reached US\$6 billion.

While channel blockers are generally considered safe, early on there were reports and concerns of serious side effects, e.g. an increased risk of heart attacks. Nevertheless the drugs were still prescribed for millions of patients.

Now, however, the Dr. Rath Research Institute is able to reveal which risks and side effects are associated with their long-term use.



The team of scientists of the Dr. Rath Research Institute. Since the opening of the institute about 20 years ago, more than 100 of its scientific publications in the field of vitamin research have been included in *PubMed*, the world's largest online medical database.



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Vitamin C

Important to know for every patient and practitioner

**Dr. Rath
RESEARCH INSTITUTE**

**Study shows:
Channel blockers
inhibit vitamin C uptake
into the cells!**

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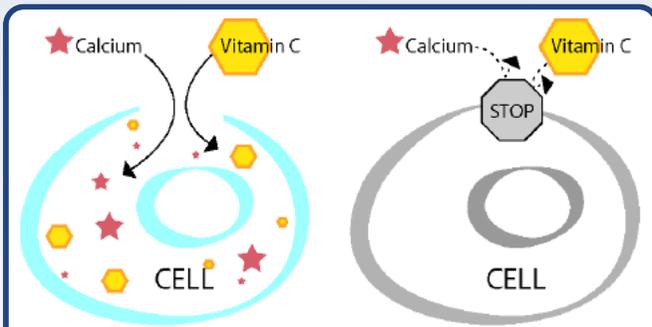


Important Health Information!

New scientific findings on "channel blockers" raise health concerns

1 Channel blockers inhibit vitamin C absorbance in the vascular wall

Researchers at the Dr. Rath Research Institute have shown that, in addition to blocking the cellular entry of calcium and other ions, channel blockers also obstruct the uptake of vitamin C by the cells. This can cause serious health problems because vitamin C is an essential nutrient for the production of collagen – the key stability molecule in the body for the blood vessel walls and connective tissue.



Calcium channel antagonists also block vitamin C from entering the cell

Long-term deficiency of Vitamin C is especially harmful for the artery walls as it can cause microscopic structural damage followed by the build-up of atherosclerotic deposits, the cause of heart attacks and strokes.

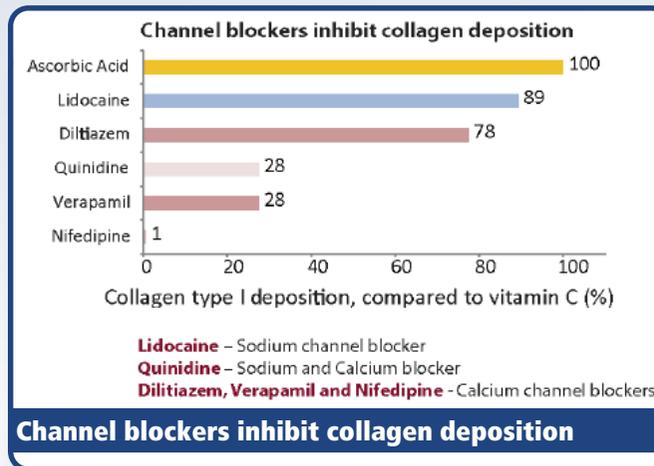
You can find the study in the world's largest online medical database:

<http://www.ncbi.nlm.nih.gov/pubmed/27335688>

Important Health Information!

2 Inhibition of collagen production by channel blockers

Our study indicates that among the studied channel blockers, nifedipine (i.e., Procardia, Nifediac) has the most pronounced inhibitory effect on collagen production by the human vascular muscle cells.



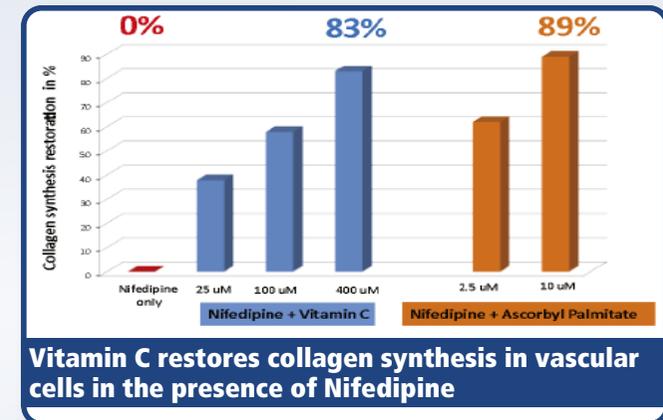
This important fact – that calcium channel blockers can weaken the heart muscle and blood vessel walls – now explains the increased risk of heart attacks reported in some clinical studies using these drugs.



Important Health Information!

3 Overcoming collagen blockage with vitamin C supplementation

Our study indicates that the blocking of collagen production by these drugs can be alleviated by taking higher doses of vitamin C.



The most effective form of vitamin C for overcoming this blockage is its lipid-soluble form – ascorbyl palmitate – which can overcome it at around 40 times lower concentration than other forms. Therefore, supplementing with ascorbyl palmitate will ensure that a sufficient amount of vitamin C is taken up by the cells to restore the collagen production blocked by the medication.

Conclusions:

The results of the scientific work of the Dr. Rath Research Institute lead to the conclusion that the administration of channel blockers should mandatorily be combined with supplementation of vitamin C, in order to prevent its depletion in the cells of the vascular wall and resulting consequences.