

How shockwaves work.

What shockwaves do has been known for almost 20 years and more uses are found all the time. How they cause changes in the body is difficult to understand. Here is more information on tissue regeneration and angiogenesis.

In paper on angiogenesis by Dr Johannes Holfeld at Innsbruck University in Austria. He comments: on the mechanism of shock wave therapy via the stimulation of Toll-like receptor 3 signalling. It is published in "Cardiovascular Research", which is the highest ranked cardiac basic science journal in Europe.

Briefly, the stimulation of innate-immune system receptor TLR3 causes modulation of inflammation and the induction of angiogenesis. In cells as well as animals lacking TLR3 the effect of shock wave therapy is almost completely abolished. We are therefore convinced that this finding represents at least the main mechanism of action. All known shock wave effects can be explained via TLR3 signalling.

On puzzle piece is still missing: The mechanism of mechanotransduction leading to nucleic acid release for TLR3 activation is what we are currently trying to elucidate and there are already some clear hints...