

## **MEDICAL BREAKTHROUGHS** **RESEARCH SUMMARY**

TOPIC: SHOCKWAVE THERAPY OPENS CLOGGED ARTERIES  
REPORT: **MB #4934**

**SHOCKWAVE BACKGROUND:** Coronary heart disease is also known as coronary atherosclerosis, which can cause vascular stenosis or occlusion and further leads to heart disease. Seven million deaths worldwide are caused by this disease. Current treatments include drug therapy, percutaneous coronary intervention (PCI), or coronary artery bypass grafting (CABG). Although these methods are effective in reopening the blood vessels of the patients, they cannot eliminate microvascular occlusion. In some cases, the patient's prognosis can be poor. Shockwave therapy was developed in Switzerland and Germany and passed the EC certification in 2004. It has been practiced in Switzerland, Germany, and Italy, and in Asia prior to now.

(Source: <https://bjcvs.org/article/3584/en-US/cardiac-shock-wave-therapy-for-coronary-heart-disease--an-updated-meta-analysis>)

**DIAGNOSING CORONARY HEART DISEASE:** Coronary heart disease is a condition caused by a buildup of plaque in the heart's arteries. These arteries bring oxygen-rich blood to the heart and a blockage in the coronary artery is a serious condition. When plaque builds along the artery wall, it causes them to become stiff and narrow. Healthy arteries are smooth and elastic. The build up of plaque will slow blood flow to the heart causing it to not get the amount of oxygen it needs. Plaque could also break away from the walls; when this happens you could experience a sudden heart attack or cardiac death. Symptoms include chest pain, commonly called angina, which feels like aching, burning, fullness, heaviness, numbness, pressure, squeezing, weakness or dizziness. You may also feel this type of pain in your arms, back, jaw, neck, and shoulder. In women, the symptoms are harder to detect. Nausea, sweating, fatigue, or shortness of breath can join the typical pressure-like chest pain.

(Source: <https://www.webmd.com/heart-disease/guide/heart-disease-coronary-artery-disease> )

**SHOCKWAVE NEW TECHNOLOGY:** Cardiac shockwave therapy is a new development in cardiovascular therapies. It's a non-invasive procedure that uses a low intensity shock to stimulate angiogenesis, which is the development of new blood vessels. Further studies state that the safety of the procedure seems to be high in patients with refractory angina, a chronic condition characterized by angina. The therapy consists of nine sessions with three sessions per week. One hundred impulses were applied during treatment to one spot with up to 1,200 impulses to the patient per session. The shock wave was tracked using ultrasound and placed through a membrane at the target treatment zone. The provider is able to see the target zone through the ultrasound technique and the inflatable balloon-like cushion is filled as it delivers the shockwaves through the arteries.

(Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5864803/>)

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**If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at [mthomas@ivanhoe.com](mailto:mthomas@ivanhoe.com)**