

**1st time in Vadodara
(Gujarat)**

Non-Surgical Cardiac Treatment

**New Hope
Rejuvenate Health**

ESMR™

Extra Corporeal ✦
Shockwave ✦
Myocardial ✦
Revascularisation ✦

NATURAL BY-PASS THERAPY

No Pain ✦
Very Safe ✦
No Needles ✦
No Hospitalization ✦
Cost Effective ✦
Approved Therapy ✦


Ayushman
Heart & Wellness



Heart-ESMR



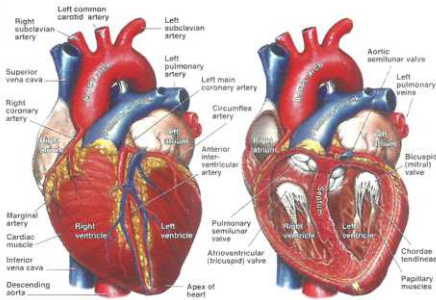
Men's Health



Kidney Care

What is Angina?

Angina is the global term for all symptoms associated with coronary artery disease, which occurs when vessels that carry blood to the heart muscle become dysfunctional, and are often narrowed or blocked and not receiving enough blood. Angina may feel like chest pain or pressure, shortness of breath, pain in the jaw, neck, arms, back, nausea, or generalized fatigue. Each patient experiences angina differently.

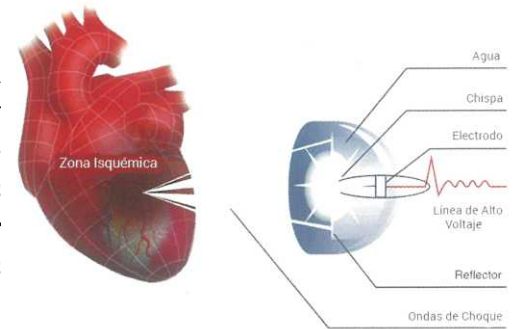


What is heart attack and Ischemic heart disease!

Ischemic heart disease or myocardial ischemia, a disease characterized by reduced blood supply to the heart muscle, usually due to coronary artery disease, results in damage of the heart muscle and is known as heart attack.

What are Shockwaves?

Shock waves are a kind of sound waves (like ultrasound) with high intensity and short duration. The sound waves are generated by an underwater high voltage spark, which are delivered non-invasively, focused by a special ellipsoid reflector. The reflector is coupled to the patient's skin near the affected area with a water cushion. The focal zone distance into the patient's body is adjusted according to the clinical requirements.

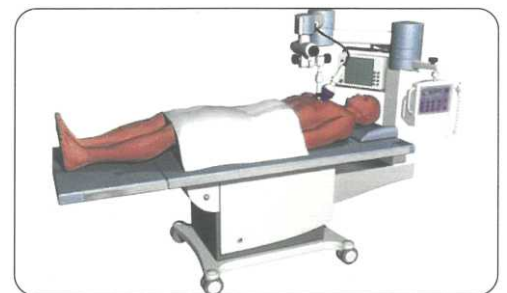


What is ESMR?

The acronym ESMR stands for Extracorporeal Shockwaves Myocardial Revascularization. ESMR can also be termed as Non-invasive Cardiac Angiogenesis therapy (Ni-CATH). ESMR therapy is a new non-invasive therapy approach using Extracorporeal Shockwave technology for Myocardial Revascularization (i.e. to improve the blood supply to heart muscles). Ischemic myocardial areas no longer accessible by conventional revascularization therapies like Bypass surgery or Balloon Angioplasty and stent, could be treated with the ESMR therapy to relieve symptoms resulted from the myocardial ischemia.

How is the treatment performed?

The treatment is performed using a shock wave generator that is designed to address the unique clinical-anatomical requirements of the chest cavity. A cardiac ultrasound imaging system is used to locate the treatment area and to map the exact position and extent of the ischemic zone. Shock waves are then delivered via the anatomical acoustic window to the treatment area under ECG R wave gating. Several treatment sessions are required to obtain optimal results.



Why ESMR?

Patients with advanced CAD frequently have recurrent Angina. Surgical and interventional options for these patients typically have been exhausted or will result in only partial revascularization. The ESMR therapy offers new hope for these patients and provides therapy which complements existing treatment procedures.

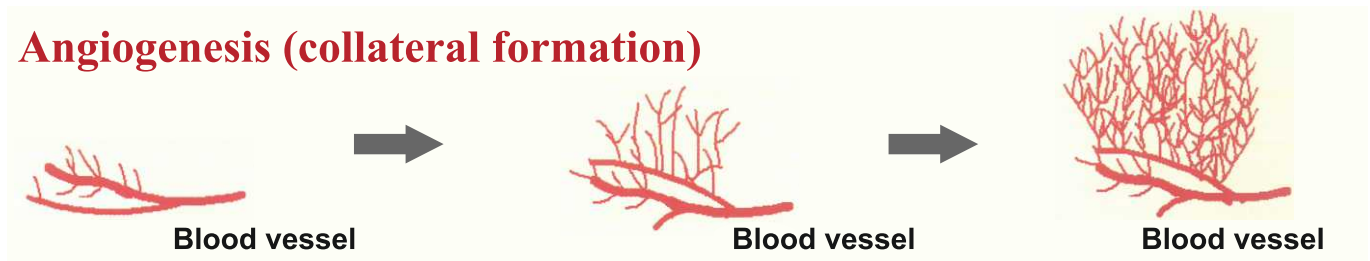
What is the therapeutic effect of shockwaves on heart?

The therapeutic effect of shock waves is attributed to the mechanical pressure and tension that the acoustic wave exerts on the cardiac tissue. Delivery of low intensity Shock waves causes sheer stress on the vessel wall. This stimulates angiogenesis related growth factors-(eNOS, VEGF and PCNA) initiating the angiogenesis process.

What is Angiogenesis?

Angiogenesis or Neo-vascularisation means formation or growth of new blood vessels (otherwise called coronary collateral formation) naturally which in turn increases the blood supply to the ischemic area of the heart and improves the myocardial perfusion. Hence coronary collateral angiogenesis can also be called NATURAL BYPASS.

Angiogenesis (collateral formation)



Who are the candidates for ESMR!

- Chronic chest pain (Refractory Angina) even after Bypass surgery or Angioplasty, Having 70%-100% blockages in angiogram.
- Reblocks after Bypass surgery or Angioplasty
- Chronic Renal disease with heart attack problem High risk cases medically unfit for Bypass surgery
- Patients coronary anatomy not readily amenable for Bypass surgery
- Inability to perform angioplasty because the target lesion is inaccessible.
- Patients not willing for surgical procedures.

What is the purpose of the ESMR treatment?

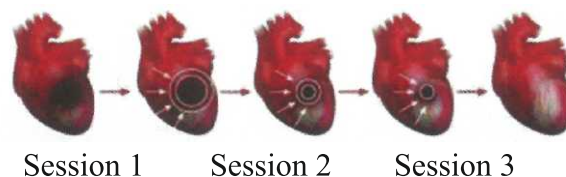
The purpose of the innovative non surgical treatment is to produce new pathway around the blocked arteries in Ischemic zone of the heart by expanding networks of the tiny blood vessels called collaterals that help to increase and normalize the blood flow to heart muscle thereby reducing and relieving angina.

Why ESMR treatment is called Non-invasive or Non-surgical Bypass treatment?

ESMR treatment forms new natural blood vessels which improve the oxygenated blood supply to the affected portion of the heart non surgically or non-pharmacologically. For this reason it is called Non invasive or Non surgical Bypass treatment or Non-Invasive Cardiac Angiogenesis therapy (Ni-Cath).

What is the treatment duration and strategy?

The whole treatment duration is 20-30 minutes and the patient should undergo a series of nine treatment sessions during a nine week period. (3 treatments at first week of each month 1st week, 5th week, 9th week). Or 3 treatment for consecutive 3 days each week for consecutive 3 weeks. At each treatment session shockwaves are delivered to the border of the ischemic area.



How would you feel during the ESMR treatment?

During the treatment you might feel a local tickling in the treatment area, accompanied by a certain degree of noise.

Is shock wave technology used in other fields of medicine ?

Shock wave technology is presently being used in the field of Urology for breaking Kidney stones and in Orthopedics for bone and soft tissue injuries.

What are the distinct advantages of ESMR over surgery ?

Unlike Bypass surgery, Angioplasty and stenting procedures, ESMR is non-invasive, carries no risk, painless, no anesthesia or sedatives required, no retreatment limitations and is an outpatient procedure.

What are the risks or side effects of ESMR ?

No acute or long term side effects were reported.

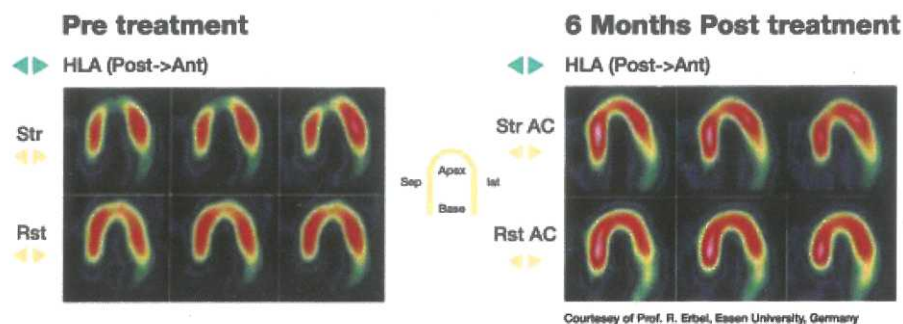
How do you know the treatment has helped ?

Patient can walk more distance without chest pain

- Patient would have fewer or no angina
- Episodes of angina would be less painful
- Patient's need for anti anginal medications can be reduced
- Patient can return to work and can participate in their active life style once again
- Patient would be more energetic and confident.

Shock wave therapy is the optimal therapy approach for Ischemic Heart Disease.

Typical SPECT Data Pre and Post Shock Wave Application results show :



Who developed the concept of ESMR ?

ESMR was developed by Essen Institute of Cardiology, Essen University, Germany.



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