

TENS treatment for Angina Pectoris



What is Angina Pectoris?

Angina pectoris is caused by arteriosclerotic changes in the coronary arteries. One cause of an attack is an increased sympathetic blood flow, which leads to ischemia in the myocardium when the oxygen balance is disturbed. The heart rate and blood pressure rise. The patient experiences a referred pain over the chest, which sometimes radiates towards the throat and/or out in the left arm. TENS is proven to have positive effects on severe angina pectoris where surgery and drug treatment aren't enough.

Studies have shown that TENS treatment leads to:

1. Reduced chest pain.
2. Increased work capacity.
3. Decreased ST-segment drops.
4. Reduced frequency of angina pectoris attacks.
5. Sympathetic inhibition.

Two different types of treatment:

Prophylactic treatment

- High-frequency stimulation, 80 Hz.
- Electrodes placed in the referred painful area (Th 1–4).
- Treatment for 1 hour, 3 times a day.
- Comfortable stimulation with paresthesia in the painful area.
- It is a good idea to stimulate before activity.

Suppressant treatment

- High-intensity, high-frequency stimulation, 80 Hz.
- Electrodes placed in the painful area.

- Amplitude: 40–50 mA.
- Increase the amplitude quickly to overshadow the angina pain.
- Stimulate for 30–60 seconds until the pain is gone.
- If the pain persists, the treatment can be repeated 2–3 times in a row.

Note: TENS treatment will not mask the pain of a potential infarction.

References:

1. Mannheimer C, Carlsson CA, Ericson K, Vedin A, Wilhelmsson C, *Transcutaneous electrical nerve stimulation in severe Angina Pectoris*. Eur heart J 1982;3:297-302.
2. Emanuelsson H, Mannheimer C, Waagstein F, Wilhelmsson C, *Catecholamin metabolism during pacing-induced angina pectoris and the effect of transcutaneous electrical nerve stimulation*. Am Heart J 1987, 114:1360-1366.
3. Börjesson M, Eriksson P, Dellborg M, Eliasson T, Mannheimer C, *Transcutaneous electrical nerve stimulation in unstable angina pectoris*. Coronary Artery Disease 1997, 8: 543-550.



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