

## **Transcutaneous Electrical Nerve Stimulation - A Non-Invasive, Simple, Chairside Pain Control Technique in Orthodontics**

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Pain as a result of early tooth movement during initial alignment is one of the most cited negative side effects associated with orthodontic treatment. Various studies on onset and progression of pain have reported, that pain after insertion of initial aligning NiTi arch wires was perceived after 4 hours, significantly greater on 24<sup>th</sup> hour and decreased by 3<sup>rd</sup> day.<sup>1</sup>

Though acetaminophen is drug of choice to control pain<sup>2</sup>, but chair side pain control was not achieved since the drug has to undergo absorption in body system and then control pain, which usually take few hours. Here is a illustration of a technique which is used to control pain immediately at chair side. A simple, chair side, non invasive technique called TENS therapy was used to control pain associated with initial aligning arch wires (NiTi) during orthodontic treatment.

This clinical pearl demonstrates a successful pain control technique on a young patient during initial stages of alignment, by Transcutaneous electrical nerve stimulation (TENS)

### **Technique:**

After insertion of initial aligning arch wires into the brackets of crowded anterior teeth (figure 1), the patient was informed about TENS treatment and recalled after 3-4 hours for application of TENS. TENS therapy was applied extraorally. The TENS unit comprising of pulse, amplitude knobs, on/off switch, 3 volt battery and a pair of electrodes (figure 2).



Figure 1.



Figure 2.

The electrodes were cleaned and conductive gel was applied on the site of placement. The electrodes are placed so that they bracket the painful region on the cheek corresponding from canine to second premolar region on both sides and both in the upper and lower arches as shown in the (figure 3 and figure 4).



Figure 3.



Figure 4.

TENS was carried out consecutively, first for the upper arch and then for the lower arch.

After electrode placement the TENS machine was switched on, the current intensity was slowly increased by turning the corresponding knob, till the patient felt a tingling sensation due to the pulse. It was further increased slowly to the point where the patient experienced maximum comfort. The intensity was maintained constant at this point and the pulse rate changed to 2 and then to 5. Each arch was treated for 15-20 minutes. After 15-20 minutes, the intensity was gradually decreased to minimum and then the unit is switched off.

Tens therapy was first applied by 4 hours after placing the arch wire followed by subsequent sessions at 24<sup>th</sup> hour, 2<sup>nd</sup> day, 3<sup>rd</sup> day and 4<sup>th</sup> day. (each arch was treated for 15-20 minutes)

Patient reported, comfort and control of pain after subsequent sessions of TENS treatment. TENS was really successful in achieving patient competency since pain and discomfort was controlled

**Advantages:**

- No PG inhibition, since TENS controls pain by gate control mechanism.
- Rapid and timely inhibition of pain at the peak progression
- No adverse effects of drugs
- Non invasive

## Reference:

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