

Therapy of sleep apnea with a new individually adapted intraoral electromyostimulation electrode

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Objectives: For electromyostimulation (EMS) of the geniohyoid muscle up to now extraorally applied electrodes or enoral-cutaneous electrodes have been used, which could not safely be placed to the mouth floor. **Materials and methods:** For the preparation of the intraoral electrode first a pattern of the lower jaw is produced with special casting of the mouth floor. On the basis of this a negative form of the mouth floor is produced, on both sides of the geniohyoid muscle an electrode is integrated and a feed line is led to the extraoral area. The negative form with the attached electrode can additionally be stabilized by a biteguard splint. It is possible to adapt each EMS apparatus to this new device and is also applicable for longterm therapy. **Results:** The new intraoral device consists of an electrode which is individually adapted to the anatomical form of the mouth floor. Due to the negative shape the exact placement of the electrodes is also ensured by additional pressure of the tongue on the electrodes. An additional guidance by a biteguard splint also enhances the stability. First applications in patients over a period of 1 year showed improved comfort and handling of the device. **Conclusions:** The new intraoral mouth floor electrode for EMS is expected to improve the effectivity and comfort of the EMS in therapy of obstructive sleep apnea.

Sleep Medicine 4, Suppl 1, S 28 (2003)