

## THE IMPORTANCE OF TRANSCUTANEOUS ELECTRICAL NEURAL STIMULATION IN DETERMINING PHYSIOLOGICAL OCCLUSION FOR PROSTHETIC TREATMENT

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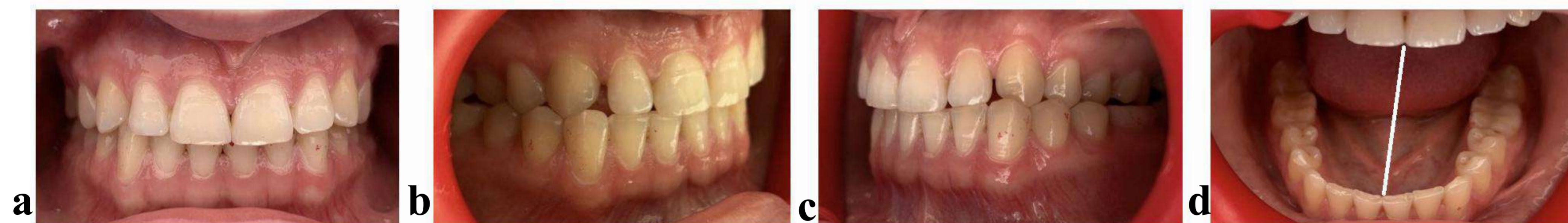
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### Introduction

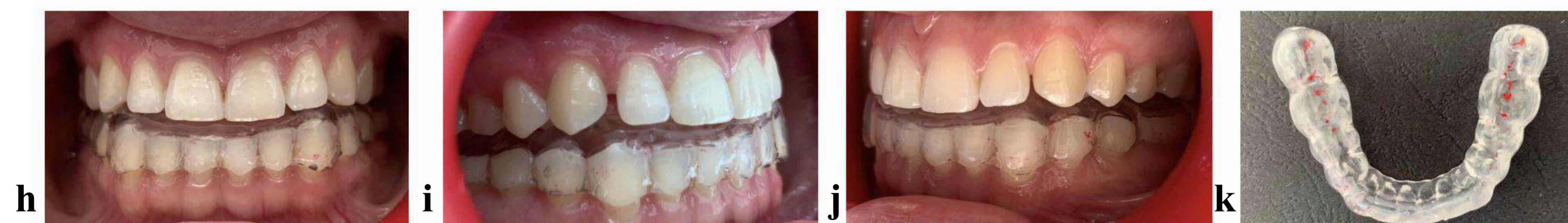
Physiologic occlusion can be considered one of the determinant factors of the stomatognathic system equilibrium. The craniomandibular dysfunction (CMD) may be induced by occlusal disorders. The achievement of a physiologic occlusion can be considered an important aspect in the succesful treatment of the CMD.

### Purpose

To evaluate the specific features of obtaining physiologic therapeutic occlusion by transcutaneous electrical neural stimulation.



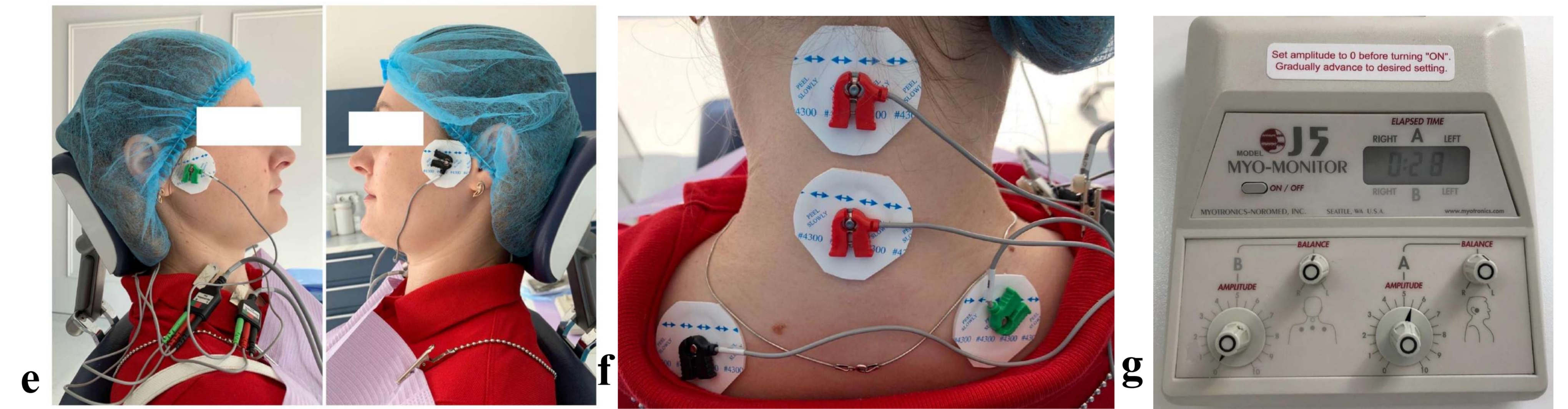
*a - Initial condition. Habitual occlusion; b- Right lateral guidance; c - Left lateral guidance; d – Mandible deviation during mouth opening.*



*h – Front view of neuromuscular orthotic in myocentric relation; i – Right lateral view; j – Left lateral view; k – Neuromuscular orthotic.*

### Material and methods

The study included 25 patients (17 females and 8 males) aged 37-52 years. Inclusion criteria were: the presence of occlusal disorders due to pathological dental wear, multiple coronary dental lesions, partial edentation associated with symptoms and clinical signs of CMD. The J5 electronic system - myomonitor was used for transcutaneous electrical neural stimulation.



*e, f - Application of electrodes; g -Myomonitor J5.*

### Results

Due to the Transcutaneous Electrical Neural Stimulation (TENS) of the V, VII and XI cranial nerves, the masticatory, mimic, cervical and scapular muscles were relaxed, thus a physiologic, myocentric relation of the mandible to the maxilla was obtained. The electronic system used - Myomonitor J5, induced symmetrical electrical pulses with a frequency of 1.5 Hz (one vibration every 1.5 seconds) and an amplitude of up to 10mkV, which moves the mandible on a neuromuscular trajectory. Stimulation, by involuntary isotonic contractions of the muscles, had an average duration of 60 minutes.

### Conclusions

Achieving the physiologic occlusion through transcutaneous electrical neurostimulation is an accurate and objective method, which is based on the physiology of the stomatognathic and neuromuscular system of the whole body, being the basis of the correct prosthetic treatment and creates proper conditions for prophylaxis and treatment of CMD.

### Keywords

Occlusion, stomatognathic system, neurostimulation.