



## APPLICATION OF THE TAOPATCH® BIOPHOTONS IN THE DAILY ORTHODONTIC PRACTICE TO INCREASE PATIENT'S COMFORT AND IMMEDIATE PAIN RELIEF IN THE AREA OF THE TEMPORO-MANDIBULAR JOINT AND THE MASTICATORY MUSCLES

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Pic.1 The Taopatch type TMJ has been applied in front of the tragus of the patients.



Pic.2 The intraoral palpation has been performed with the index finger with and without Taopatch.

Pic.3 Maximum opening of the mouth without Taopatch type TMJ.

Pic.4 Improvement in the amount of maximum opening of the mouth with Taopatch type TMJ.

**AIM:** To investigate the usage of biophotons sent out from the medical device Taopatch® in the daily orthodontic practice and their influence on the patient's comfort as maximum opening of the mouth and pain relief in the area of the Temporo-mandibular joint (TMJ) and some of the masticatory muscles.

**MATERIALS AND METHODS:** 92 patients have been examined before and after the application of Taopatch® type TMJ (Pic.1). Mean age 25,34 years. From them 30,4% men and 69,6% women. The maximum opening of the mouth was measured with a ruler in mm (Pic.3, 4). The pain was determined with the help of the scale from 0 (no pain) to 10 (maximum pain). One and the same investigator performed all palpations and measurements in order to reduce the risk of mistakes due to different strength for palpation. The intraoral palpation was performed with the index finger behind the upper last molars, pressing upwards and inwards, laterally to the maxillary tuberosity and medial to the coronoid process (Pic.2). Three measurements were done without and with the TMJ Taopatch®: maximum opening of the mouth, pain during palpation on the right and on the left side of the patient intraorally. The applicator was placed in front of the tragus, the patient drank a glass of still water and walked 20 feet before the second measurements which were performed immediately. The statistical analysis included descriptive statistics, T-test, Paired samples test.

**RESULTS:** The pain during palpation on the right side without Taopatch® was 5.32±2.70 (p< .001) and on the left side was 5.35±2.56 (p<.001). With TMJ Taopatch® the pain on the right side reduced to 3.54±2.52 (p<.001) and on the left side to 3.58±2.41 (p<.001). Statistically significant differences were found before and after the application of the nanotechnology (t(91)= 9.516, p<.001 for the right side and t(91)= 8.74, p<.001 for the left side). (Tabl.1) Maximum mouth opening without the patch was 47.36±6.71 mm (p<.001). With Taopatch® the maximum opening was 50.60±6.53 mm (p<.001) and increased by 3.24±2.10 mm (p<.001). The difference is statistically significant t(91)=-14.81, p< .001. (Fig.1)

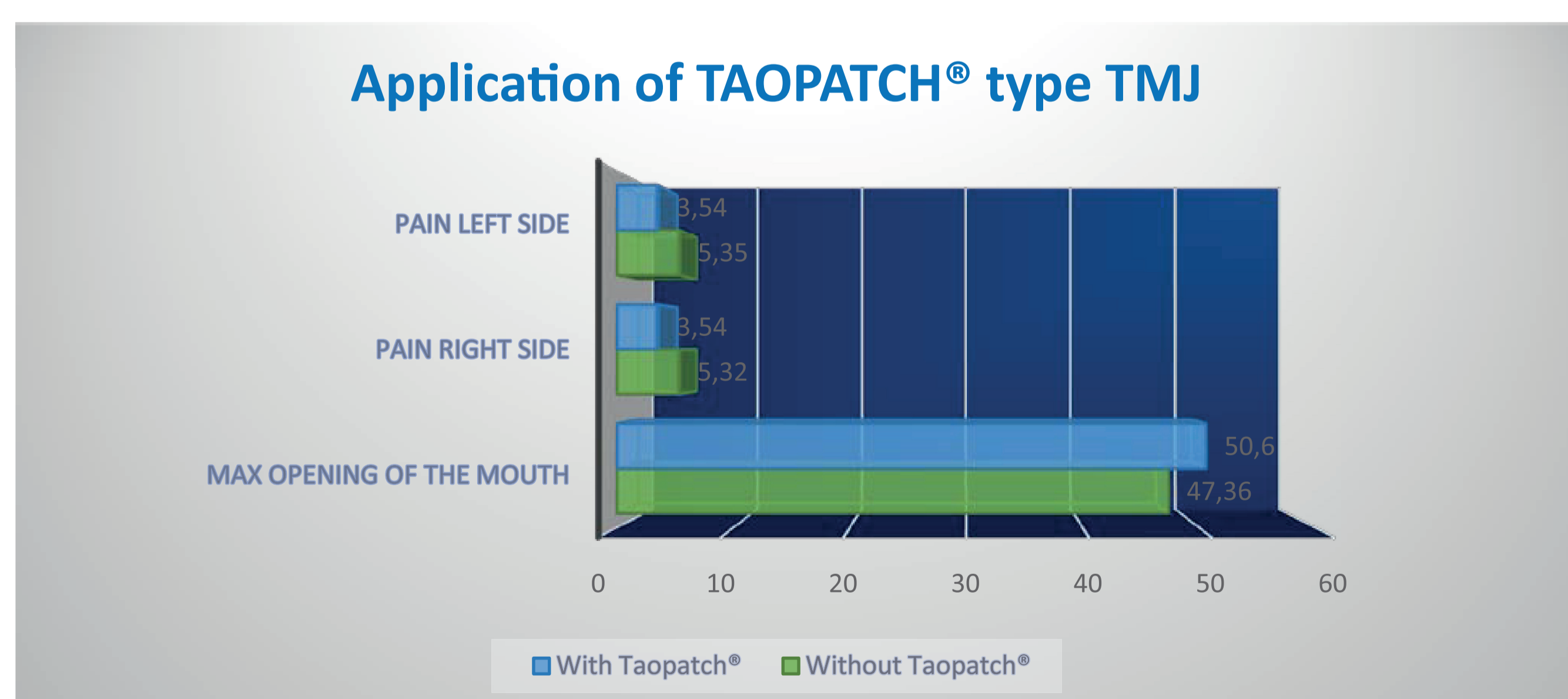


Fig.1. Improvement in the mouth opening and pain relief after application of Taopatch® type TMJ.

Parameters	Without TAOPATCH	With TAOPATCH	t(91)	p
Max Opening	47.36±6.713	50.60±6.538	-14.810	< .001
Pain R	5.32±2.701	3.54±2.522	9.516	< .001
Pain L	5.35±2.565	3.58±2.410	8.740	< .001

Tabl.1 Results with and without Taopatch® TMJ

**CONCLUSION:** The biophotons of TMJ Taopatch® can be applied easily in the daily orthodontic practice to increase the amount of maximum mouth opening which increases the comfort both for the patient and the orthodontist and reduces the pain in the TMJ and the masticatory muscles during and after the dental intervention.