



# ASSESSMENT OF CHANGES IN THE ENAMELS TOPOGRAPHY AFTER DEBONDING ADHESIVE REMNATS



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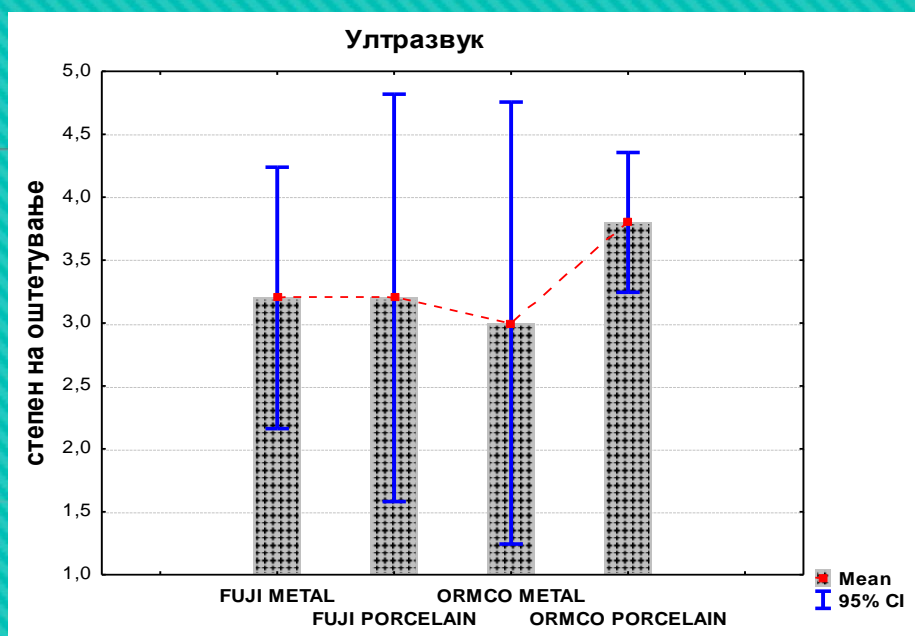
**Introduction:** At orthodontic treatment completion, knowledge about the effects of adhesive remnant removal on enamel topography is paramount.

**Aim :** To determine the changes in enamel topography when applying different methods for debonding adhesive remnants.

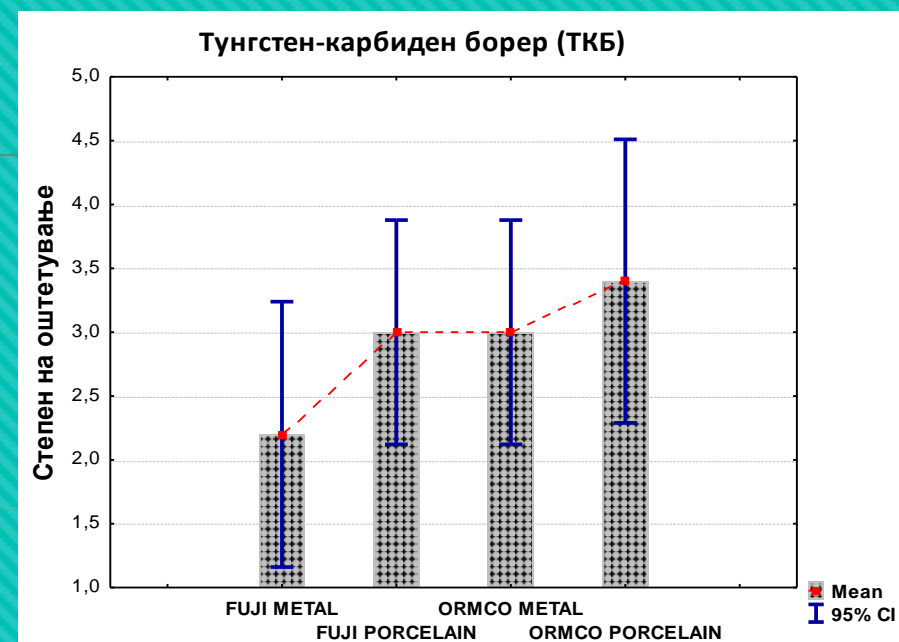
**Material and method:** A sample of 40 extracted premolars were divided into 2 groups of 20 premolars each depending on the instrument used to remove the adhesive remnants: an ultrasonic instrument (Soniflex) and a tungsten-carbide bur and a low-speed handpiece ( 3,000mpr) water cooled. Metal brackets (Dentaurum, Germany) were bonded with the adhesive system of (Ormco Enlight Light Cure Adhesive; Ormco, USA), according to the manufacturer's instructions, and stored in saline at room temperature for 48 hours, before debonding with adhesive removal plier from everyday clinical practice. The assessment of the changes on the enamels topography was based on the surface roughness index (SRI-Surface Roughness Index) according to the Vidor, using a 3D performance stereomicroscope.

## Results:

Graph 1. Comparison of damage score after use of ultrasound by groups



Graph 2. Comparison of damage score after use of TKB by groups



Graph 3. Comparison of damage score after use of ultrasound and TKB

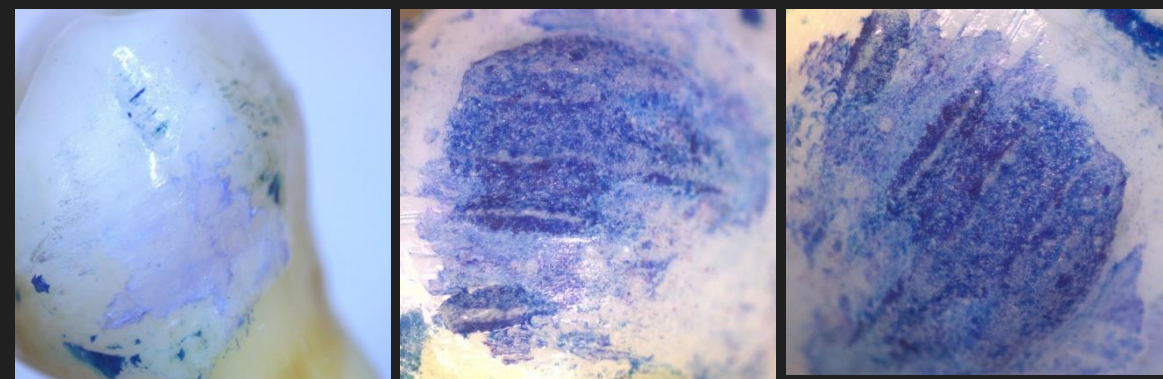
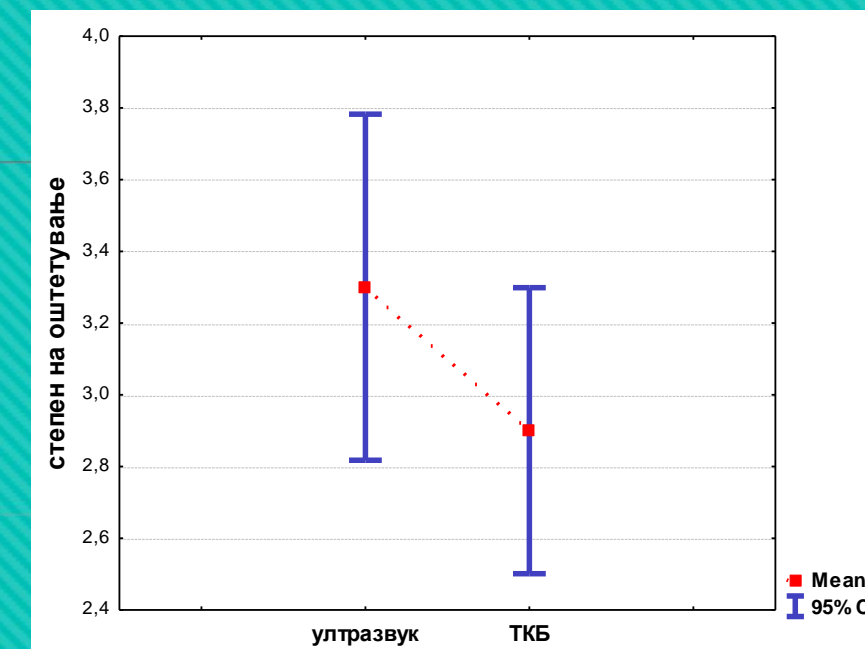


Fig.1,2,3. Enamel surface after removal of adhesive residues by ultrasound.

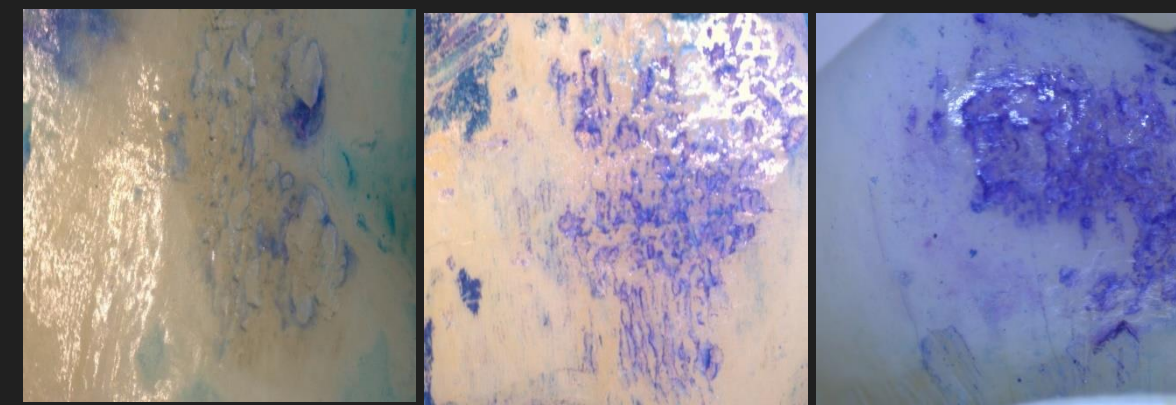


Fig.4,5,6. Enamel surface after removal of adhesive residues with tungsten carbide bur.

**Conclusions:** More efficient and safe method for removing an adhesive remnants is when using a low speed tungsten carbide bur, with which we have minimal damage to the enamel, insignificant subtraction from the thickness of the enamel surface, compared to ultrasound, which showed unsatisfactory results.