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## Effect of cold atmospheric plasma on collagen membrane surface

**Basak Kusakci Seker, Emre Seker** and **Suat Pat**
Eskisehir Osmangazi University, Turkey

The collagen membrane is used in guided tissue regeneration which include the regeneration of lost tissues that surround the teeth or implants by forming new bone, new cementum, and (around teeth) a new periodontal ligament. Collagen membranes should be biodegradable, biocompatible, have high porosity in the nano-size range for cell attachment and have adequate mechanical strength. The aim of this pilot study was to evaluate the effect of non-thermal atmospheric pressure plasma (NTAP) jet application on the wettability and contact angle (CA) of collagen membrane by tensiometer. Four collagen membrane specimens were prepared and cut with area of 5x5 mm. Plasma jet (kinpen 09) was used in this study. The plasma stream had a length of 11 mm. The distance between nozzle and membrane was approximately 5 mm. Argon gas was used as carrier gas at a flow of 5l/min at 2.5 bar pressure. Roughly 15 $mm^2$ of membrane surface was treated for 30 second, 60 second and 120 second with plasma jet. Tear tests (tensiometer) give a better comparison among different materials as they provide information on the energy or force required to propagate a tear through the material. The test was initiated with a 7 mm long central cut. Tear propagation was monitored as a function of the vertical displacement at the constant rate of 1 mm/min, up to a maximum displacement of 10 mm. According to results of this study, a remarkable reduction in CA was observed in all groups and it can be assumed that NTAP application improve the wettability over previous collagen membranes which is an important benefit because of the porous structure of membrane support cell attachment and proliferation.

### Biography

Basak Kusakci Seker has completed her PhD at Hacettepe University and Near East University respectively. She is a Lecturer and Clinical Specialist at Eskisehir Osmangazi University, Department of Periodontology. She has published more than 20 papers and presentations and continues to study on “Dental implant surgery, dental laser applications, plasma disinfection and wound healing and bone regeneration techniques”.

basakusakci@hotmail.com

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