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### Soft tissue expanders behavior, *in vitro* pilot study of swelling speed and future perspectives

**Aim:** The aim of this study was to analyze the swelling speed of tissue expanders.

**Materials and Methods:** Six samples of Osmed® soft tissue expanders were studied *in vitro*. They were submerged in saline solution CL Na 0.9% 37°C, imitating human conditions. The samples were weighed every 24 hours for the first 2 days; therefore, every 4 days until the samples stopped absorbing fluid. The weight measurements gave us the swelling speed of the devices in these conditions.

**Results:** In this *in vitro* study, the curves expressed by the expansion behavior of Osmed® devices are described.

**Conclusion:** The swelling behavior of Osmed® soft tissue expanders demonstrated in this *in vitro* study, could differ from a linear growth. There are differences in behavior between the two devices studied. Swelling speed should be considered when applying soft tissue expansion devices, prior to any regenerative technique.



Figure 1. Soft tissue expansion prior to regenerative bone grafting procedures.

### Recent Publications

1. Von Arx T, Buser D. Horizontal ridge augmentation using autogenous block grafts and the guided bone regeneration technique with collagen membranes: a clinical study with 42 patients. *Clinical Oral Implants Research*. 2006;17(4):359-366.
2. Benic G, Hämmerle C. Horizontal bone augmentation by means of guided bone regeneration. *Periodontology* 2000. 2014;66(1):13-40.
3. Tarnow D, Chu S, Salama M, Stappert C, Salama H, Garber D et al. Flapless Postextraction Socket Implant Placement in the Esthetic Zone: Part 1. The Effect of Bone Grafting and/or Provisional Restoration on Facial-Palatal Ridge Dimensional Change—A Retrospective Cohort Study. *International Journal of Periodontics & Restorative Dentistry*. 2014;34(3):323-331.
4. Retzepi M, Donos N. Guided Bone Regeneration: biological principle and therapeutic applications. *Clinical Oral Implants Research*. 2010;21(6):567-576.

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5. Elnayef B, Monje A, Lin G, Gargallo-Albiol J, Chan H, Wang H et al. Alveolar Ridge Split on Horizontal Bone Augmentation: A Systematic Review. *The International Journal of Oral & Maxillofacial Implants*. 2015;30(3):596-606.
6. Monje A, Monje F, Hernández-Alfaro F, Gonzalez-García R, Suárez- López del Amo F, Galindo-Moreno P et al. Horizontal Bone Augmentation using Autogenous Block Grafts and Particulate Xenograft in the Severe Atrophic Maxillary Anterior Ridges: A Cone-Beam Computerized Tomography Case Series. *Journal of Oral Implantology*. 2015;41(S1): 366-371.
7. Urban I, Monje A, Wang H. Vertical Ridge Augmentation and Soft Tissue Reconstruction of the Anterior Atrophic Maxillae: A Case Series. *The International Journal of Periodontics & Restorative Dentistry*. 2017;35(5):613-623.

## Biography

Jose Luis Latorre Valenzuela specialized in Implant Dentistry in Barcelona at International University of Catalonia, UIC. He was interested in soft tissue management and continued his education with the Postgraduate program in Periodontics at UIC. Nowadays, he combines his practice focused on Implant Dentistry, Periodontics, Implant prosthesis with the research activity, at UIC.

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