



## Evaluation of pre-hydrated collagenated cortico-cancellous granules (mp3®) in augmentation of the maxillary sinus (preliminary study)

### ABSTRACT

As the use of autogenous bone has several disadvantages, bone substitutes, such as allografts, xenografts and alloplasts, have been proposed for augmentation procedures. The aim of this study was to evaluate radiographically and histologically in maxillary sinus augmentation the biomaterial OsteoBiol® mp3®, Tecnos®, Giaveno, Italy, that is a heterologous origin biomaterial made of 600-1000 µm or 1000-2000 µm pre-hydrated collagenated cortico-cancellous granules, properly mixed with OsteoBiol® Gel 0. Six healthy patients requiring a maxillary sinus augmentation procedure to place implants were included. The patients were treated with a sinus floor augmentation via lateral approach. After the sinus membrane elevation, the maxillary sinus was grafted with 100% cortico-cancellous porcine bone particles (OsteoBiol® mp3®, Tecnos®) and the bony sinus window was covered with a reabsorbable collagen membrane (OsteoBiol® Evolution, Tecnos®). After 6 months, cylindrical bone samples were harvested for the evaluation. The analysis showed that most of the particles were surrounded by newly formed bone with large osteocyte lacunae. Some remnants of graft material were seen, while the collagen membrane was completely resorbed. The x-ray analysis confirmed the statistically significant increase in the mean bone height and bone density.

### CONCLUSIONS

Commenting the results, the Authors underlined that the clinical success observed with porcine bone depends on its surface topography and that the macro and micro-porosity have a crucial role in osteoconduction. In their opinion, *“findings from the present study supported the hypothesis that collagenated porcine bone has excellent osteoconductive properties and can be partially reabsorbed”*.

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BONE SUBSTITUTES  
**OsteoBiol® mp3®**  
MEMBRANE  
**OsteoBiol® Evolution**