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### Effect of GBR in Combination with Deproteinized Bovine Bone Mineral on the Healing of Calvarial Defects in Rabbits

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#### Abstract:

Statement of problem: The guided bone regeneration (GBR) technique does not always produce consistent results. Bone filling within the space provided by the membrane can be incomplete. Purpose: The aim of this study was to evaluate the effect of a collagen membrane (Bio-Gide) in combination with or without deproteinized bovine bone mineral (Bio-Oss) on the healing of calvarial defects in rabbits. Materials and Methods: Twelve New Zealand white rabbits were used in this randomized single-blind experimental study. Four equal defects were created on the calvarium of all animals. Each defect in each rabbit was randomly assigned to one of the following treatment groups: Group 1(control), no treatment; Group 2, covered with Bio-Gide; Group 3, filled with Bio-Oss; Group 4, filled with Bio-Oss and Bio-Gide. The animals were sacrificed for histologic and histomorphometric analysis, 30 and 60 days after treatment. Results: A significant difference was not observed in regenerated bone between the control and Bio-Gide groups ( $P>0.05$ ), at 1 and 2 months. The amount of regenerated bone was significantly higher ( $P<0.05$ ) in the Bio-Oss and Bio-Oss+Bio-Gide groups as compared to the control group. The difference in regenerated bone was not significant ( $P>0.05$ ) between the Bio-Oss and Bio-Oss+Bio-Gide groups. Bone regeneration increased significantly in all treatment groups, between the two study periods ( $P<0.05$ ). Conclusion: In groups 3 and 4, the presence of a collagen membrane did not affect the amount of new bone regeneration. According to these results, use of a collagen membrane has no additional benefit in the regeneration of intrabony defects.

#### Keywords:

[Animal study](#) , [Bio-Gide](#)

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