



<b>Title</b>	<b>Hydroxyapatite Granular Bone Graft – GranuMaS™</b>
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<b>Reference</b>	Health Technology Review Report, 003/2008. <a href="http://medicaldev.moh.gov.my/uploads/tr_2008/granumas.pdf">http://medicaldev.moh.gov.my/uploads/tr_2008/granumas.pdf</a>

## Aim

To assess the safety, effectiveness, and cost effectiveness of hydroxyapatite granular bone graft –GranuMaS™ – as a synthetic bone graft substitute.

limitations were placed on language. Personal communication included telephone calls. Relevant articles were appraised and evidence graded according to the US/ Canadian Preventive Services Task Force.

## Conclusions and results

GranuMaS™ is derived from pure commercial chemicals and Malaysian limestone. It has passed all the required criteria for the American Society for Testing and Materials (ASTM) F1185-88 (1993) Standards and has undergone many in vitro and in vivo tests and two clinical trials. A fair level of evidence shows that using GranuMaS™ as a synthetic bone graft substitute is safe and effective for preservation of alveolar ridge post tooth extraction and is suitable for use in patients with traumatic fractures and bone loss. However, further randomized controlled trials (RCTs) involving larger numbers of subjects should be conducted. No evidence could be retrieved on the cost effectiveness of GranuMaS™. However, it is priced lower than imported synthetic bone graft.

## Recommendations

Based on the above review, GranuMaS™ can be used as a research tool in research environments, eg, Phase 3 RCTs with larger numbers of subjects, to provide better quality evidence before it can be used widely in Malaysia. The research should include its other applications, eg, fusion of joints and vertebra, augmentation of osteoporotic bone defects, and augmentation, correction, and rectification of malpositioned bone.

## Methods

Databases searched included PubMed, Ovid, ProQuest, EBSCOhost, CINAHL, Cochrane Systematic Reviews, Cochrane Central Register for Controlled Trials, HTA Databases, Health Business Full Text Elite, Food and Drug Administration (FDA) website from 2000-2007, and Google. Additional articles were identified from reviewing the bibliographies of retrieved articles and from documents provided by GranuLab (M) Sdn. Bhd. No