Reviewer's report

Title: Principles of Cartilage Tissue Engineering in TMJ Reconstruction

Version: 1 Date: 8 August 2007

Reviewer: paul edwards

Reviewer's report:

General

This is a very timely and comprehensive article that reviews an exciting and underexplored area of craniofacial research, namely the use of tissue engineering principles for reconstruction/regeneration of the cartilaginous structures of the temporomandibular joint. One of the commendable features of this manuscript is that the authors first provide a thorough overview of normal cartilage histology and review the current knowledge about the normal process of cartilage repair before reviewing in depth the therapeutic options for cartilage repair/regeneration. The review of the currently available therapeutic options is comprehensive. The authors critically review the advantages and limitations of the different modalities that they present. The literature cited is current and comprehensive.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

None

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

A couple of minor, non-critical, suggestions are offered.

1. It would be interesting if the authors could provide an estimate as to the clinical magnitude of the problem of articular damage to the TMJ (e.g. number of patients affected and/or who could potentially benefit from these approaches).

2. Two or three photomicrographs comparing the histology of normal TMJ articular cartilage to damaged cartilage would nicely illustrate the textual information provided.

3. A brief mention of micromass culture technology would be beneficial (The authors have previously published a well-written review of this subject in Head and Face Medicine).

A review for spelling and grammar is recommended. Several errors are noted (e.g. temperomandibular, scull, lomg term, devided, synthesises, focussed, etc...)
Discretionary Revisions (which the author can choose to ignore)

**What next?:** Accept after discretionary revisions

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.