

# JPR

# Journal of Prosthodontic Research

Official Journal of Japan Prosthodontic Society

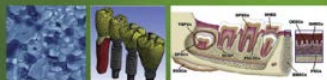


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### Issue Highlights

- Increasing diversity in prosthodontic research
- Mechano-regulation of collagen biosynthesis in periodontal ligament
- Ceramic dental biomaterials and CAD/CAM technology: State of the art



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# JPR *Journal of Prosthodontic Research*

## Most-targeted topics are:

- **Clinical Epidemiology and Prosthodontics**
- **Fixed/Removable Prosthodontics**
- **Oral Implantology**
- **Prosthodontics-Related Biosciences** (Regenerative Medicine, Bone Biology, Mechanobiology, Microbiology / Immunology)
- **Oral Physiology and Biomechanics** (Masticating and Swallowing Function, Parafunction, e.g., bruxism)
- **Orofacial Pain and Temporomandibular Disorders (TMDs)**
- **Adhesive Dentistry / Dental Materials / Aesthetic Dentistry**
- **Maxillofacial Prosthodontics, Dysphasia Rehabilitation**
- **Digital Dentistry**

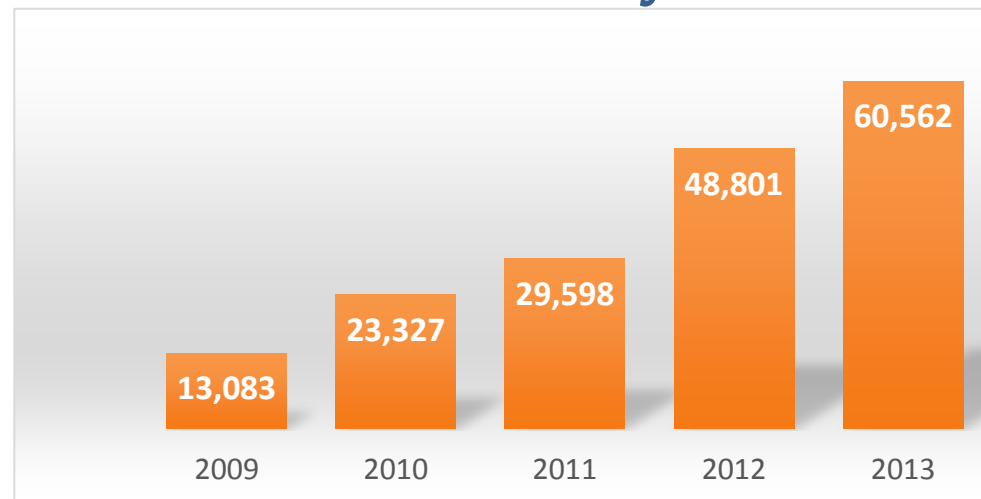
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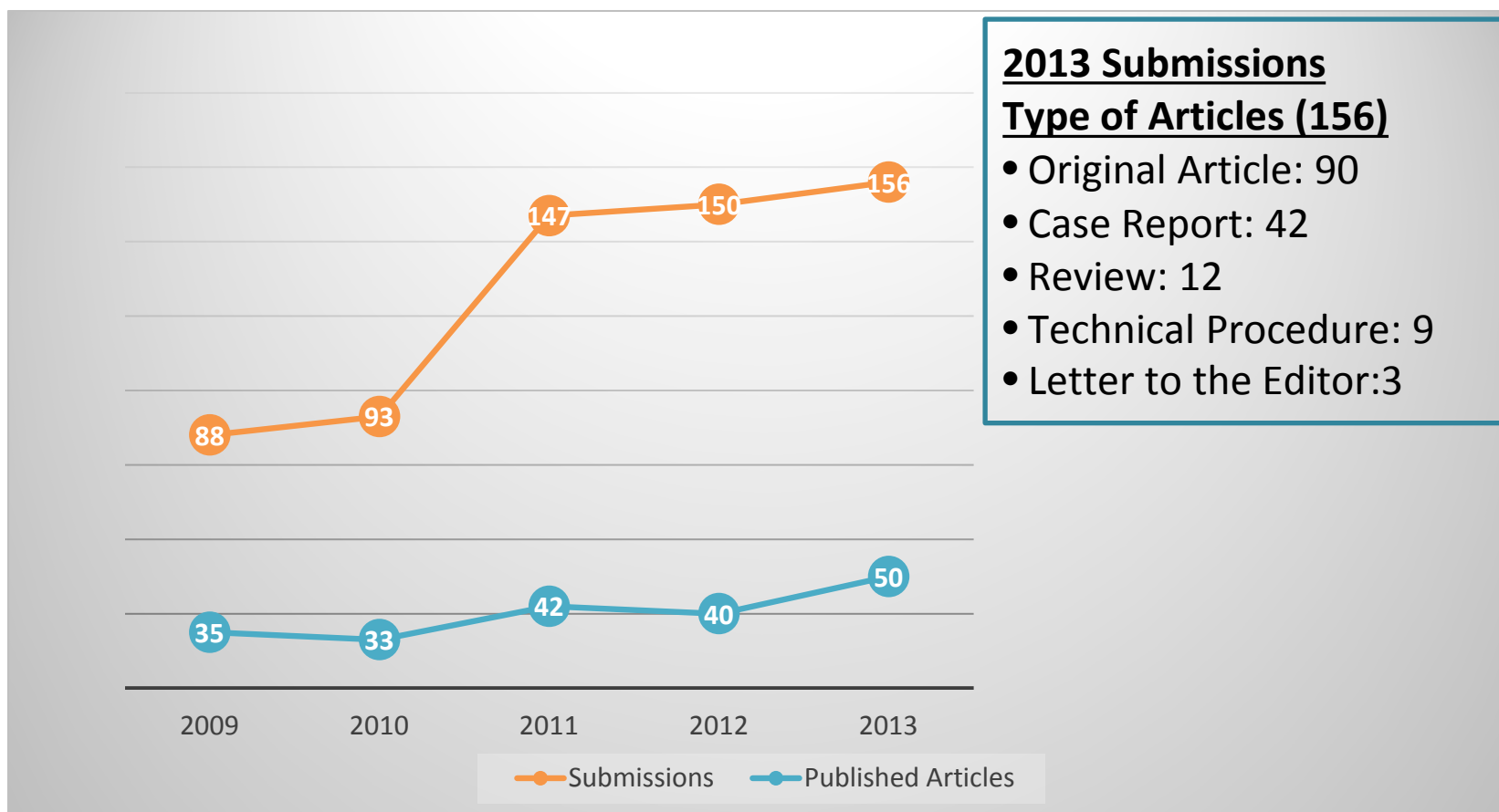
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REVIEW ARTICLE Bruxism and prosthetic treatment: A critical review	Johansson A., Omar R., Carlsson G.E.	419	55/3
REVIEW ARTICLE Finite element contact analysis as a critical technique in dental biomechanics: a review.	Murakami N., Wakabayashi N.	416	58/2
REVIEW ARTICLE Stem cells in dentistry - Part II: Clinical applications	Egusa H., Sonoyama W., Nishimura M., Atsuta I., Akiyama K.	403	56/4
ORIGINAL ARTICLE Fracture strength of CAD/CAM composite and composite-ceramic occlusal veneers.	Johnson AC., Versluis A., Tantbirojn D., Ahuja S.	403	58/2

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Article	Author	Vol/Issue
REVIEW ARTICLE Stem cells in dentistry - Part I: Stem cell sources	Egusa H., Sonoyama W., Nishimura M., Atsuta I., Akiyama K.	56/3
REVIEW ARTICLE Bruxism and prosthetic treatment: A critical review	Johansson A., Omar R., Carlsson G.E.	55/3
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ORIGINAL ARTICLE Fracture resistance of premolars restored with inlay and onlay ceramic restorations and luted with two different agents	Cubas G.B.D.A., Habekost L., Camacho G.B., Pereira-Cenci T.	55/1
REVIEW ARTICLE Endodontically treated teeth: Characteristics and considerations to restore them	Faria A.C.L., Rodrigues R.C.S., de Almeida Antunes R.P., de Mattos M.G.C., Ribeiro R.F.	55/2

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## Reasons to submit to *Journal of Prosthodontic Research*

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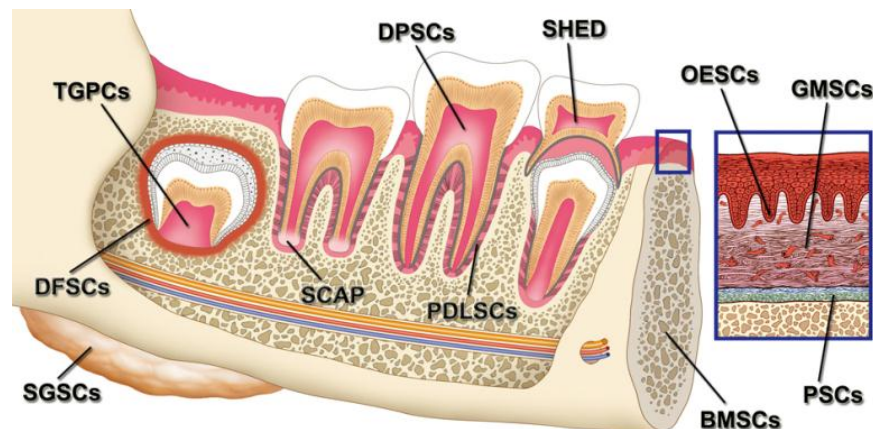


## Stem cells in dentistry – Part I: Stem cell sources

Hiroshi Egusa, DDS, *et al.*

*Volume 56, Issue 3, July 2012, Pages 151–165*

Part I of this review outlines various types of intra- and extra-oral tissue-derived stem cells with regard to clinical availability and applications in dentistry. Additionally, appropriate sources of stem cells for regenerative dentistry are discussed with regard to differentiation capacity, accessibility and possible immunomodulatory properties

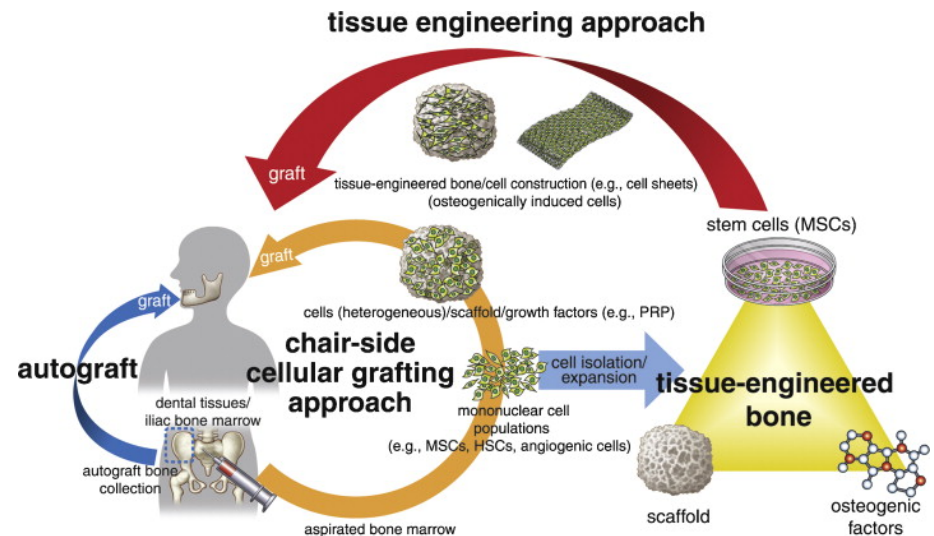


BMSCs: bone marrow-derived MSCs from orofacial bone; DPSCs: dental pulp stem cells; SHED: stem cells from human exfoliated deciduous teeth; PDLSCs: periodontal ligament stem cells; DFSCs: dental follicle stem cells; TGPCs: tooth germ progenitor cells; SCAP: stem cells from the apical papilla; OESCs: oral epithelial progenitor/stem cells; GMSCs: gingiva-derived MSCs, PSCs: periosteum-derived stem cells; SGSCs: salivary gland-derived stem cells

## Stem cells in dentistry – Part II: Clinical applications

Hiroshi Egusa, DDS, PhD *et al.* Volume 56, Issue 4, October 2012, Pages 229–248

Part II of this review first overviews progress in regenerative dentistry to consider the implications of the stem cell technology in dentistry and then highlights cutting-edge stem-cell-based alveolar bone regenerative therapies. Factors that affect stem-cell-based bone regeneration as related to the local immune response are then discussed. Additionally, pre-clinical stem cell studies for the regeneration of teeth and other oral organs as well as possible applications of MSC-based immunotherapy in dentistry are outlined. Finally, the marketing of stem cell technology in dental stem cell banks with a view toward future regenerative therapies is introduced.



Schematic diagram illustrating the current clinical approaches to stem-cell-based bone augmentation. The chair-side cellular grafting approach (orange arrow) uses patient-derived freshly processed bone marrow (mononuclear cell population), which contains mesenchymal stem/stromal cells (MSCs), hematopoietic stem cells (HSCs), and angiogenic cells, mixed with a scaffold and growth factors, such as platelet-rich plasma (PRP), as a grafting material. The tissue engineering approach (red arrow) uses MSCs, which are isolated from aspirated bone marrow and expanded *in vitro*. The MSCs are further cultured with osteogenic factors and a scaffold to generate an osteogenic construct (tissue-engineered bone) or cell sheets as a grafting material. Conventional autograft bone augmentation (blue arrow) uses autologous bone collected from the ilium or mandible.

## **A multi-centered epidemiological study evaluating the reliability of the treatment difficulty indices developed by the Japan Prosthodontic Society**

Takuo Kuboki, DDS, PhD *et al.*

*Volume 56, Issue 2, April 2012, Pages 71–86*

### **A New Diagnostic System for Prosthodontics established by JPS**

**B caused by A (O ● G ▲ Q ■ P ▼)**

**O:** Oral physiological conditions

**G:** General health and sociological conditions

**Q:** Oral health related Quality of Life level

**P:** Psychological health conditions

●▲■▼: Grade number 0–3

The Japan Prosthodontic Society (JPS) has systematized the clinical examinations and performed multi-axis assessment of complex variations in patients who need prosthodontic care in response to this current demand for holistic approaches. The objectives for the development of the multi-axis assessment protocol on the treatment difficulty indices for prosthodontic care are as follows: 1) establishment of the prosthodontic diagnosis based on clinical evidence, 2) identification of the holistic risk factors specific to prosthodontic care, such as general health/social problems, and psychological problems of patients, 3) the application of patient-based outcomes to measure the effectiveness of various prosthodontic treatment options, and 4) the utilization of a multi-axis assessment style.

## **Bruxism and prosthetic treatment: A critical review**

Anders Johansson, DDS, PhD *et al.*

*Volume 55, Issue 3, July 2011, Pages 127–136*

This review is concerned with the relationships that may, directly or indirectly, exist between bruxism and prosthetic treatment. Although certain occlusal conditions and/or incorrectly prosthetically modified occlusions were historically believed to be potential causes of bruxism, this has largely ceased to be the case. Also, the assumption that ‘correction’ of such occlusal conditions could reverse bruxism has also been discredited. What is important in the present context, however, is the possible effect of bruxism on prosthetic restorations, a relationship upon which the dental literature would appear not to be conclusive.

It is, therefore, the purpose of this paper to critically review the dental literature regarding a possible relationship between bruxism and prosthetic treatment.



A 57-year-old man (A) with implant fracture in the region of 25 (B) due to overloading.



## Sleep less and bite more: Sleep disorders associated with occlusal loads during sleep

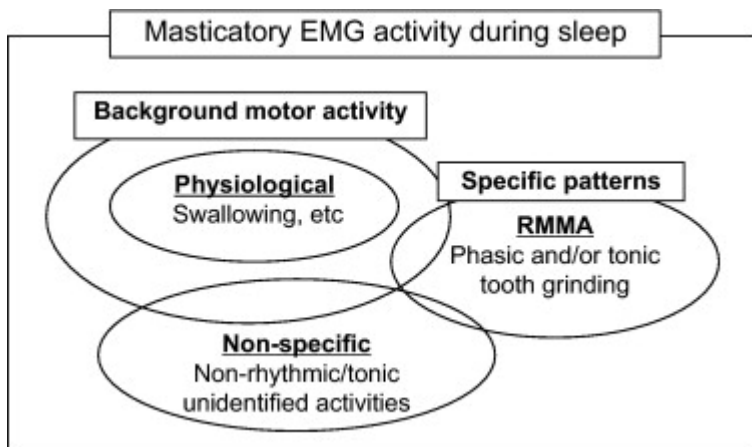
Takafumi Kato, DDS, PhD *et al.*

*Volume 57, Issue 2, April 2013, Pages 69–81*

This review shows the role of masticatory motor activities as a contributing factor to occlusal overloads (excessive loads or loads in eccentric axis) during sleep, such as in presence of Sleep Bruxism.

### Article Outline

1. Introduction
2. Definition and diagnosis of sleep bruxism
3. Masticatory electromyographic activity and sleep bruxism
4. Increased masticatory motor activity during sleep
5. RMMA and tooth grinding
6. Tooth contacts and masticatory force measurements
7. Sleep bruxism and sleep disorders
  - 7.1. Prevalence of sleep bruxism
  - 7.2. Concomitant occurrence of sleep bruxism and sleep disorders
    - 7.2.1. Insomnias
    - 7.2.2. Hypersomnia
    - 7.2.3. Circadian rhythm disorders
    - 7.2.4. Parasomnias
    - 7.2.5. Sleep-related movement disorders association to SB
    - 7.2.6. Other sleep problems
8. Obstructive sleep apnea syndrome and SB
9. Recognition of sleep disorders at the chairside
10. Conclusion



## Consensus statement from JPS Global Workshop Kyoto 2012

Kiyoshi Koyano DDS, PhD. *et al.*

*Volume 57, Issue 3 July 2013, Pages 153–155*

This workshop was hosted by the Japan Prosthodontic Society, which was founded in 1933 to promote the many aspects of prosthodontics, such as progress in research, education, and treatment.

The main objective of this workshop was to formalize international understanding and a consensus on issues related to prosthodontics. The 2012 workshop focused on the current status of the prosthodontic specialty, including the requirements for specialty training in different regions of the world.

### **Consensus statement on...**

- Commitment to community and society
- Education
- Research
- Professional organizations