

Applications of nanotechnology in Dentistry

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Abstract

In the last few decades, nanotechnology has become prominent in medical sciences, especially in dentistry, including the treatment and prevention of oral and dental disease using nanosciences. Therefore, an understanding of nanotechnology is an essential to further understanding how these materials can be used in dentistry. Further, various modern nanotechnology products and new therapies are on the way. This study discusses the latest advances of nanotechnology in dentistry; including nano-based oral and dental technologies being the major improvements in restorative dentistry (nano-composites, nano-resin modified GIC, nano-GIC, mineral solutions); in Prosthodontics (nano-hybrid composites); in Endodontics (sealers); in Periodontics (Grafts, nano-materials for tissue regeneration); in Oral Implantology (nanonite implant); and in Orthodontics (nanorobots, archwires). With the development of nanotechnology and the use of nanomaterials in dentistry, it will eventually improve the quality of lives of millions of persons by improving examinations and medical and dental treatments with new technologies.

Speaker Publications:

1. Verma S K, Prabhat K C, Goyal L, Rani M and Jain A (2010) A critical review of the implication of nanotechnology in modern dental practice. National Journal of Maxillofacial Surgery 1:41-4.
2. Kasaj A, Willershausen B, Reichert C, Rohrig B, Smeets R and Schmidt M (2008) Ability of nanocrystalline hydroxyapatite paste to promote human periodontal ligament cell proliferation. International Journal of Oral Science 50:279-85.
3. D'Attilio M, Traini T, Di Iorio D, Varvara G, Festa F and Tecco S (2005) Shear bond strength, bond failure, and scanning electron microscopy analysis of a new flowable composite for orthodontic use. Angle Orthodontist 75(3):410-5.
4. Schleyer T L (2000) Nanodentistry. Fact or fiction? The Journal of the American Dental Association 13(11):1567-8.

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Biography:

Omid Panahi has completed his graduation in the field of Doctor of Dental Medicine (DMD) at Centro Escolar University in 2013. He has completed his MSc in Oral and Maxillofacial Surgery at Yeditepe University, Istanbul, Turkey. He has published more than 40 papers in reputed journals and has been serving as an Editorial Board Member of ISI journals.