

MOHAMMAD HOSSEIN NEKOOFAR



CV

CURRENT JOB:

- Associate Professor of Endodontics: August 2016- present School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran
- Associate Professor in Tissue Engineering & Applied Cell Sciences: 2015-present School of Advanced Technologies in Medicine, Tehran University of Medical Sciences, Tehran, Iran
- Honorary Senior Lecturer in Endodontics & Dental Biomaterial: 2012- present School of Dentistry, Cardiff University, Cardiff, UK
- Director of International Relations, Accreditation & Ranking: 2013-present Tehran University of Medical Sciences, Tehran, Iran
- Immediate Past President of Iranian Association of Endodontics (IAE): July 2016-present

WORK HISTORY:

- President of Iranian Association of Endodontics (IAE): 2013-2016
- Vice-dean of Administrative and Financial Affairs: December 2013- October 2015 School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran
- Vice-dean of International Affairs: December 2012-December 2013 School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran
- Assistant Professor of Endodontics: 1995- August 2016 School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

- Group Leader of Endodontology Research Group: September 2004-2016 Endodontology research group, School of Dentistry, Cardiff University, Cardiff, UK
- Clinical Lecturer in Endodontics: December 2005-August 2012 School of Dentistry, Cardiff University, Cardiff, UK
- Honorary Visiting Lecturer: April 2004-December 2005 School of Dentistry, Cardiff University, Cardiff, UK

RESEARCH THESES:

- DDS thesis (1989): Association of Central Giant Cell Granuloma and HLA-DR10; Tehran University of Medical Sciences, Tehran, Iran
- MSc thesis (1993): Evaluation of the accuracy of two models of the Electronic apex locators (Root ZX & Formatron V); Tehran University of Medical Sciences, Tehran, Iran
- PhD thesis (2011): The effect of contamination on selected physical and chemical characteristics of Mineral Trioxide Aggregate; Cardiff University, Cardiff, UK
DateDegreeSubjectAwarding Body 2011PhDDentistry (Dental Biomaterial)Cardiff University, Cardiff, UK 1994Diplomate, Iranian Board of EndodonticsIranian Board of Endodontics; Ministry of Health & Health education, Tehran, Iran 1993MScEndodonticsSchool of Dentistry, Tehran University of Medical Science, Tehran, Iran 1989DDSGeneral DentistrySchool of Dentistry, Tehran University of Medical Science, Tehran, Iran

RESEARCH EXPERIENCES:

- A member of "Endodontology Research Group", Department of Adult Dental Health, Cardiff University
- Group Leader of Electronic apex locators study
- Group Leader of Mineral Trioxide Aggregate study
- Supervising more than 45 final projects and dissertations of BDs and DDs students in Iran and UK
- Supervising more than 11 theses of postgraduate and master of clinical dentistry postgraduate students in UK and Iran
- Publication of more than 50 original articles in English and Persian

RESEARCH INTERESTS:

- Electronic root canal length measurement devices
- Mineral trioxide aggregate (MTA)
- Post-Operative pain in Endodontics
- Treatment of immature root canals
- Automated root canal preparation
- Physiopathology of periapical lesions
- Regenerative Endodontics

ORIGINAL PUBLICATIONS:

- Nekoofar MH*, Sadeghi K, Sadighi Akha E, Namazikhah MS. The accuracy of the Neosono Ultima EZ apex locator using files of different alloys: an in vitro study. *J Calif Dent Assoc* 2002;30:681-4. (Cited by 37)
- Nekoofar MH*, Sadeghipanah M, Dehpour AR. Evaluation of meloxicam (A cox-2 inhibitor) for management of postoperative endodontic pain: a double-blind placebocontrolled study. *J Endod* 2003;29:634-7. (Cited by 49)
- Nekoofar MH*. Electronic apex locators. *Int Endod J* 2005;38:417-8. (Cited by 2)
- Nekoofar MH*, Ghandi MM, Hayes SJ, Dummer PM. The fundamental operating principles of electronic root canal length measurement devices. *Int Endod J* 2006;39:595-609. (Cited by 188)
- Sabeti MA*, Nekoofar MH, Motahhary P, Ghandi M, Simon JH. Healing of apical periodontitis after endodontic treatment with and without obturation in dogs. *J Endod* 2006;32:628-33. (Cited by 64)
- Nekoofar MH*, Adusei G, Sheykhrezae MS, Hayes SJ, Bryant ST, Dummer PM. The effect of condensation pressure on selected physical properties of mineral trioxide aggregate. *Int Endod J* 2007;40:453-61. (Cited by 100)
- Namazikhah MS, Nekoofar MH*, Sheykhrezae MS, Salariyeh S, Hayes SJ, Bryant ST, et al. The effect of pH on surface hardness and microstructure of mineral trioxide aggregate. *Int Endod J* 2008;41:108-16. (Cited by 130)
- Uzun O, Topuz O, Tinaz C, Nekoofar MH*, Dummer PM. Accuracy of two root canal length measurement devices integrated into rotary endodontic motors when removing gutta-percha from root-filled teeth. *Int Endod J* 2008;41:725-32. (Cited by 25)

- Kayahan MB, Nekoofar MH*, Kazandag M, Canpolat C, Malkondu O, Kaptan F, et al. Effect of acid-etching procedure on selected physical properties of mineral trioxide aggregate. *Int Endod J* 2009;42:1004-14. (Cited by 92)
- Nekoofar MH*, Haddad DC, Nolde J, Aseeley Z. Water content of ampoule packaged with ProRoot MTA. *Int Endod J* 2009;42:549-51; author reply 52-3. (Cited by 10)
- Nekoofar MH*, Namazikhah MS, Sheykhrezae MS, Mohammadi MM, Kazemi A, Aseeley Z, et al. pH of pus collected from periapical abscesses. *Int Endod J* 2009;42:534- 8. (Cited by 48)
- Yazdi KA, Bayat-Movahed S, Aligholi M, Hayes SJ, Nekoofar MH*. Microleakage of human saliva in coronally unsealed obturated root canals in anaerobic conditions. *J Calif Dent Assoc* 2009;37:33-7.
- Nekoofar MH*, Aseeley Z, Dummer PM. The effect of various mixing techniques on the surface microhardness of mineral trioxide aggregate. *Int Endod J* 2010;43:312-20. (Cited by 51)
- Nekoofar MH*, Oloomi K, Sheykhrezae MS, Tabor R, Stone DF, Dummer PM. An evaluation of the effect of blood and human serum on the surface microhardness and surface microstructure of mineral trioxide aggregate. *Int Endod J* 2010;43:849-58. (Cited by 48)
- Nekoofar MH*, Stone DF, Dummer PM. The effect of blood contamination on the compressive strength and surface microstructure of mineral trioxide aggregate. *Int Endod J* 2010;43:782-91. (Cited by 53)
- Shokouhinejad N, Nekoofar MH*, Iravani A, Kharrazifard MJ, Dummer PM. Effect of acidic environment on the push-out bond strength of mineral trioxide aggregate. *J Endod* 2010;36:871-4. (Cited by 103)
- Shokouhinejad N, Sharifian MR, Aligholi M, Assadian H, Tabor RK, Nekoofar MH*. The sealing ability of resilon and gutta-parcha following different smear layer removal methods: an ex vivo study. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2010;110:e45-9. (Cited by 22)
- Houshmand B, Ghandi M, Nekoofar MH*, Gholamii GA, Tabor RK, Dummer PM. SEM Analysis of MTAD Efficacy for Smear Layer Removal from Periodontally Affected Root Surfaces. *J Dent (Tehran)* 2011;8:157-64. (Cited by 7)
- Nekoofar MH*, Davies TE, Stone D, Basturk FB, Dummer PM. Microstructure and chemical analysis of blood-contaminated mineral trioxide aggregate. *Int Endod J* 2011;44:1011-8. (Cited by 33)

- Khedmat S, Rouhi N, Drage N, Shokouhinejad N, Nekoofar MH*. Evaluation of three imaging techniques for the detection of vertical root fractures in the absence and presence of gutta-percha root fillings. *Int Endod J* 2012;45:1004-9. (Cited by 62)
- Nosrat A, Nekoofar MH*, Bolhari B, Dummer PM. Unintentional extrusion of mineral trioxide aggregate: a report of three cases. *Int Endod J* 2012;45:1165-76. (Cited by 21)
- Shokouhinejad N, Nekoofar MH*, Razmi H, Sajadi S, Davies TE, Saghiri MA, et al. Bioactivity of EndoSequence root repair material and bioaggregate. *Int Endod J* 2012;45:1127-34. (Cited by 65)
- Basturk FB, Nekoofar MH*, Gunday M, Dummer PM. The effect of various mixing and placement techniques on the compressive strength of mineral trioxide aggregate. *J Endod* 2013;39:111-4.
- Ghandi M, Houshmand B, Nekoofar MH*, Tabor RK, Yadeghari Z, Dummer PM. The effect of MTAD, an endodontic irrigant, on fibroblast attachment to periodontally affected root surfaces: A SEM analysis. *J Indian Soc Periodontol* 2013;17:188-92.
- Kayahan MB, Nekoofar MH*, McCann A, Sunay H, Kaptan RF, Meraji N, et al. Effect of acid etching procedures on the compressive strength of 4 calcium silicate-based endodontic cements. *J Endod* 2013;39:1646-8. (Cited by 26)
- Oloomi K, Saberi E, Mokhtari H, Mokhtari Zonouzi HR, Nosrat A, Nekoofar MH*, et al. Evaluation of the effect of blood contamination on the compressive strength of MTA modified with hydration accelerators. *Restor Dent Endod* 2013;38:128-33. (Cited by 12)
- Shokouhinejad N*, Razmi H, Nekoofar MH, Sajadi S, Dummer PM, Khoshkhounnejad M. Push-out bond strength of bioceramic materials in a synthetic tissue fluid. *J Dent (Tehran)* 2013;10:540-7. (Cited by 6)
- Basturk FB, Nekoofar MH*, Gunday M, Dummer PM. Effect of various mixing and placement techniques on the flexural strength and porosity of mineral trioxide aggregate. *J Endod* 2014;40:441-5. (Cited by 18)
- Bolhari B, Nekoofar MH*, Sharifian M, Ghabrai S, Meraji N, Dummer PM. Acid and microhardness of mineral trioxide aggregate and mineral trioxide aggregate-like materials. *J Endod* 2014;40:432-5. (Cited by 12)
- Graziotin-Soares R, Nekoofar MH*, Davies TE, Bafail A, Alhaddar E, Hubler R, et al. Effect of bismuth oxide on white mineral trioxide aggregate: chemical characterization and physical properties. *Int Endod J* 2014;47:520-33. (Cited by 25)

- Khedmat S, Dehghan S, Hadjati J, Masoumi F, Nekoofar MH*, Dummer PM. In vitro cytotoxicity of four calcium silicate-based endodontic cements on human monocytes, a colorimetric MTT assay. *Restor Dent Endod* 2014;39:149-54. (Cited by 12)
- Shokouhinejad N*, Jafargholizadeh L, Khoshkhounejad M, Nekoofar MH, Raoof M. Surface microhardness of three thicknesses of mineral trioxide aggregate in different setting conditions. *Restor Dent Endod* 2014;39:253-7. (Cited by 6)
- Shokouhinejad N*, Nekoofar MH, Ashoftehyazdi K, Zahraee S, Khoshkhounejad M. Marginal adaptation of new bioceramic materials and mineral trioxide aggregate: a scanning electron microscopy study. *Iran Endod J* 2014;9:144-8.
- Shokouhinejad N*, Yazdi KA, Nekoofar MH, Matmir S, Khoshkhounejad M. Effect of acidic environment on dislocation resistance of endosequence root repair material and mineral trioxide aggregate. *J Dent (Tehran)* 2014;11:161-6. (Cited by 6)
- Basturk FB, Nekoofar MH*, Gunday M, Dummer PM. Effect of varying water-topowder ratios and ultrasonic placement on the compressive strength of mineral trioxide aggregate. *J Endod* 2015;41:531-4. (Cited by 12)
- Nekoofar MH, Sheykhrezae MS*, Meraji N, Jamee A, Shirvani A, Jamee J, et al. Comparison of the effect of root canal preparation by using WaveOne and ProTaper on postoperative pain: a randomized clinical trial. *J Endod* 2015;41:575-8. (Cited by 32)
- Saatchi M, Rahimi I*, Khademi A, Farhad AR, Nekoofar MH, Dummer PM. Influence of tooth length on the accuracy of the Root ZX electronic apical foramen locator: an ex vivo study. *Acta Odontol Scand* 2015;73:101-6.
- Shokouhinejad N, Nekoofar MH*, Pirmoazen S, Shamshiri AR, Dummer PM. Evaluation and Comparison of Occurrence of Tooth Discoloration after the Application of Various Calcium Silicate-based Cements: An Ex Vivo Study. *J Endod* 2016;42:140-4. (Cited by 10)
- Bakhtiar H, Mirzaei H, Bagheri MR, Fani N, Mashhadiabbas F, Baghaban Eslaminejad M*, Sharifi D, Nekoofar MH*, Dummer P. Histologic tissue response to furcation perforation repair using mineral trioxide aggregate or dental pulp stem cells loaded onto treated dentin matrix or tricalcium phosphate. *Clin Oral Investig*. 2017; 21(5):1579- 1588. (Cited by 1)
- Bakhtiar H, Esmaeili S, Fakhr Tabatabayi S, Ellini MR, Nekoofar MH*, Dummer PM. Second-generation Platelet Concentrate (Platelet-rich Fibrin) as a Scaffold in Regenerative Endodontics: A Case Series. *J Endod*. 2017; 43(3):401-408. (Cited by 3)
- Bakhtiar H, Nekoofar MH, Aminishakib P, Abedi F, Naghi Moosavi F, Esnaashari E, Azizi A, Esmailian S, Ellini MR, Mesgarzadeh V, Sezavar M, About I*. Human Pulp Responses

to Partial Pulpotomy Treatment with TheraCal as Compared with Biodentine and ProRoot MTA: A Clinical Trial. Publication stage: J Endod. In Press * Correspondence Author;

SOME OF THE PUBLISHED ABSTRACTS – POSTERS & MEETING PRESENTATIONS

- M.H Nekoofar: MTA options; Invited Lecturer of the 2008 Irish Endodontic Society Annual Scientific Meeting -Dublin Ireland
- M.H Nekoofar: The Evolution of Electronic Working Length Measurement; Keynote Speaker of the 2008 American Association of Endodontics Annual congress
- M.H Nekoofar Biomaterials in Endodontics Keynote Speaker of 10th International Congress of the Turkish Endodontic Society.
- M.S. SheykhRezai; A. Yusefi; S.A.Ghazinouri; M.H. Nekoofar: Evaluation of the stress distribution in the maxillary central incisor during endodontic and restorative cavity preparation. Journal of Endodontics Vol.29, No.4 April 2003(316) PR69. American Association of Endodontics 2003 Annual Session, Tampa, USAM.
- M.H.Nekoofar; S.A. Ghazinouri; S. Niknam; M. Eslami. An in-vitro comparison of the efficacy of the Protaper engine driven vs. stainless steel K-files in canal debridement. Journal of Endodontics Vol.29, No.4 April 2003(316) PR49.American Association of Endodontics 2003 Annual Session, Tampa, USA
- M.H. Nekoofar; F. Niknam; M.S. SheykhRezai; E. SadighiAkha. An in-vitro comparison of the efficacy of Ni-Ti Engine Driven and. Stainless Steel K-Files in Canal debridement. International Endodontic Journal Oct 2001(24), R67. European Society of Endodontology, 10th Biennial Congress-Munich, Germany

CLINICAL APPLICATION OF HYDRAULIC CALCIUM SILICATE CEMENTS, AN UPDATE

According to the results of numerous studies, the clinical use of calcium silicate cements or so called "MTA and MTA like materials" in various fields of dentistry -particularly "endodontics"- has increased dramatically.

MTA is now the material of choice in the following clinical applications:

- Vital pulp treatment modalities

- Orthograde root end closure (non-surgical approach)
- Sealing of perforation
- Regenerative Endodontics
- Retrograde Root end closure (surgical approach)

One of the unique advantages of calcium silicate cements over other dental materials is the hydraulic property of this type of cements. Hydraulic calcium silicate cement can be hardened inside and/or in contact with water. They are also able to seal the cavity against bacterial passage while releasing "calcium hydroxide". Hydraulic calcium silicate cements are also biocompatible, osteoconductive, bioactive, antibacterial and able to provide an environment for cementum re-growth. They also provide a high pH environment and facilitate control of bleeding. In addition, they are low soluble and dimensionally stable and set in an aqueous environment. However, in clinical dentistry, the exposure of calcium silicate cements to tissue fluids may have detrimental effects on physical, chemical and/or biological effects of cement. Therefore, for an effective clinical application of calcium silicate cement, enquiring an updated background knowledge of applied chemistry, physics, biomechanics and biology is crucial. Moreover, for proper clinical decision making the evidence-based dentistry (EBD) approach is globally recommended.

In this presentation, by reviewing the recent evidence, clinical applications of hydraulic calcium silicate cements in various dental fields -particularly vital pulp treatment modalities- will be reviewed.

Moreover, in most of the clinical applications the cement will be in direct contact with tissue fluids including saliva, pus and/or blood, therefore, the effect of various clinical conditions on physical and chemical properties of MTA materials will be demonstrated and the possible correlation of some of these adverse effects on the biological outcome will be discussed.