

**Selected Scientific Literature Related to
DENTAL BIOCOMPATIBILITY AND ORAL GALVANISM**
Prepared by the [International Academy of Oral Medicine and Toxicology](#)
(IAOMT)
to accompany our Dental Biocompatibility and Oral Galvanism
Online Learning Video

Agarwal A, Tyagi A, Ahuja A, Kumar N, De N, Bhutani H. Corrosion aspect of dental implants—an overview and literature review. *Open Journal of Stomatology*. 2014 Feb 6;2014. Available from: https://www.scirp.org/html/3-1460226_42956.htm

*Augustynek M, Cihak J, Vilimek D, Kubicek J, Penhaker M, Fiedorova K. Biocompatibility of Medical Devices and Their Risks. In 2019 8th European Workshop on Visual Information Processing (EUVIP) 2019 Oct 28 (pp. 228-231). IEEE. Available from: https://www.researchgate.net/profile/Dominik_Vilimek/publication/338368280_Biocompatibility_of_Medical_Devices_and_Their_Risks/links/5e4cf632a6fdccd965b0d3af/Biocompatibility-of-Medical-Devices-and-Their-Risks.pdf

Balasubramaniam R, Klasser GD, Delcanho R. Separating oral burning from burning mouth syndrome: unravelling a diagnostic enigma. *Australian Dental Journal*. 2009 Dec;54(4):293-9. Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1834-7819.2009.01153.x>

Bánóczy J, Roed-Petersen B, Pindborg JJ, Inovay J. Clinical and histologic studies on electrogalvanically induced oral white lesions. *Oral Surgery, Oral Medicine, Oral Pathology*. 1979; 48(4): 319-323.

Basu N, Goodrich JM, Head J. Ecogenetics of mercury: From genetic polymorphisms and epigenetics to risk assessment and decision-making. *Environmental Toxicology and Chemistry*. 2014 Jun;33(6):1248-58. Available from: <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/106903/etc2375.pdf?sequence=1>

Bengtsson UG, Hylander LD. Increased mercury emissions from modern dental amalgams. *Biometals*. 2017 Apr 1;30(2):277-83. Available from: https://www.researchgate.net/publication/313850359_Increased_mercury_emissions_from_modern_dental_amalgams/fulltext/58aaf029a6fdcc0e079afd32/Increased-mercury-emissions-from-modern-dental-amalgams.pdf

*Cambiaghi A. Biological Evaluation of Medical Devices as an Essential Part of the Risk Management Process: Updates and Challenges of ISO 10993-1: 2018. Available from: https://cdnmedia.eurofins.com/european-west/media/1927774/9432_biological-evaluation-of-medical-devices_whp.pdf

Chaubey AK, Mishra SK, Chowdhary R. Positive Material Identification testing of dental implant to correlate their compositions with allergic conditions. *Journal of Oral Biology*

and *Craniofacial Research*. 2019 Jul 1;9(3):294-8. Available from:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6593213/>

Ciszewski A, Baraniak M, Urbanek-Brychczyńska M. Corrosion by galvanic coupling between amalgam and different chromium-based alloys. *Dental Materials*. 2007 Oct 1;23(10):1256-61. Abstract available from:

<https://www.sciencedirect.com/science/article/abs/pii/S0109564106002983>

*Djerassi E, Berova N. The possibilities of allergic reactions from silver amalgam restorations. *Internat Dent J*. 1969; 19(4):481-8.

Evans P. A Multiple Chemical Sensitivity: A Novel Disease Mechanism. Public Submission To The National Casemix And Classification Centre For Inclusion Of Multiple Chemical Sensitivity Under A Novel Classification Of Diseases Title Chapter: Environmental Diseases In The International Classification Of Diseases Version 10 Australian Modification (ICD-10-AM). July 2011. Available from:

<http://sacfs.asn.au/download/NCCC%20MCS%20ICD10AM%20Submission.pdf>

Homme KG, Kern JK, Haley BE, Geier DA, King PG, Sykes LK, Geier MR. New science challenges old notion that mercury dental amalgam is safe. *Biometals*. 2014 Feb 1;27(1):19-24. Available from: <https://link.springer.com/article/10.1007/s10534-013-9700-9>

*Hosoki M, Nishigawa K. Book Chapter "Dental Metal Allergy" in *Contact Dermatitis*, edited by Young Suck Ro, ISBN 978-953-307-577-8, InTech, December 12, 2011.

Available from: <http://www.intechopen.com/download/get/type/pdfs/id/25247>

Johansson BI, Bergman B. Corrosion of titanium and amalgam couples: Effect of fluoride, area size, surface preparation and fabrication procedures. *Dental Materials*. 1995 Jan 1;11(1):41-6.

*Kall J, Just A, Aschner M. What is the risk? Dental amalgam, mercury exposure, and human health risks throughout the lifespan. *Epigenetics, the Environment, and Children's Health across Lifespans*. David J. Hollar, ed. Springer. 2016. pp. 159-206 (Chapter 7). Abstract available from: http://link.springer.com/chapter/10.1007/978-3-319-25325-1_7

Katehsari VH, Niedermeier W. Solubility of dental core build-up materials in electric fields. *Journal of Dental Sciences*. 2019 Dec 1;14(4):346-51. Available from:

<https://www.sciencedirect.com/science/article/pii/S1991790218311747>

*Laske M, Opdam NJ, Bronkhorst EM, Braspenning JC, Huysmans MC. Longevity of direct restorations in Dutch dental practices. Descriptive study out of a practice based research network. *Journal of Dentistry*. 2016 Mar 1;46:12-7. Available from:

<https://repository.ubn.ru.nl/bitstream/handle/2066/201886/201886.pdf?sequence=1#page=21>

Mortazavi SM, Daiee E, Yazdi A, Khiabani K, Kavousi A, Vazirinejad R, Behnejad B, Ghasemi M, Mood MB. Mercury release from dental amalgam restorations after magnetic resonance imaging and following mobile phone use. *Pak J Biol Sci*. 2008 Apr 15;11(8):1142-6. Available from: <https://www.osti.gov/etdeweb/servlets/purl/21511720>

Mortazavi G, Mortazavi SM. Increased mercury release from dental amalgam restorations after exposure to electromagnetic fields as a potential hazard for hypersensitive people and pregnant women. *Reviews on Environmental Health*. 2015 Dec 1;30(4):287-92.

Mortazavi G, Mortazavi SA, Mehdizadeh AR. "Triple M" Effect: A Proposed Mechanism to Explain Increased Dental Amalgam Microleakage after Exposure to Radiofrequency Electromagnetic Radiation. *Journal of Biomedical Physics & Engineering*. 2018 Mar;8(1):141. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5928305/>

Mumford JM. Electrolytic action in the mouth and its relationship to pain. *Journal of Dental Research*. 1957 Aug;36(4):632-40.

Naguib EA, Abd-el-Rahman HA, Salih SA. Role of fluoride on corrodability of dental amalgams. *Egyptian Dental Journal*. 1994 Oct;40(4):909-18.

Paknahad M, Mortazavi SM, Shahidi S, Mortazavi G, Haghani M. Effect of radiofrequency radiation from Wi-Fi devices on mercury release from amalgam restorations. *Journal of Environmental Health Science and Engineering*. 2016 Dec 1;14(1):12. Available from: <https://link.springer.com/article/10.1186/s40201-016-0253-z>

Pigatto PD, Minoia C, Ronchi A, Brambilla L, Ferrucci SM, Spadari F, Passoni M, Somalvico F, Bombeccari GP, Guzzi G. Allergological and toxicological aspects in a multiple chemical sensitivity cohort. *Oxidative Medicine and Cellular Longevity*. 2013;2013. Available from: <http://downloads.hindawi.com/journals/specialissues/727303.pdf#page=9>

Plessas A, Pepelassi E. Dental and periodontal complications of lip and tongue piercing: prevalence and influencing factors. *Australian Dental Journal*. 2012 Mar;57(1):71-8. Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1834-7819.2011.01647.x>

*Pleva J. Corrosion and mercury release from dental amalgam. *J. Orthomol. Med*. 1989; 4(3): 141-158. Available from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.456.8237&rep=rep1&type=pdf>

Podzimek S, Tomka M, Sommerova P, Lyuya-Mi Y, Bartova J, Prochazkova J. Immune markers in oral discomfort patients before and after elimination of oral galvanism. *Neuroendocrinology Letters*. 2013 Jan 1;34(8):802-8.

Polychronis G, Al Jabbari YS, Eliades T, Zinelis S. Galvanic coupling of steel and gold alloy lingual brackets with orthodontic wires: Is corrosion a concern?. *The Angle*

Orthodontist. 2018 Jul;88(4):450-7. Available from:

<https://www.zora.uzh.ch/id/eprint/169361/9/092917-655.1.pdf>

Prochazkova J, Podzimek S, Tomka M, Kucerova H, Mihaljevic M, Hana K, Miksovsky M, Sterzl I, Vinsova J. Metal alloys in the oral cavity as a cause of oral discomfort in sensitive patients. *Neuroendocrinology Letters*. 2006 Dec 1;27(1):53-8. Available from:

<http://www.nel.edu/userfiles/articlesnew/NEL270706A03.pdf>

*Richardson GM, Clemow SR, Peters RE, James KJ, Siciliano SD. Assessment of exposures and potential risks to the US adult population from wear (attrition and abrasion) of gold and ceramic dental restorations. *Journal of Exposure Science and Environmental Epidemiology*. 2016 Jan 1;26(1):70-7. Abstract available from:

<https://www.nature.com/articles/jes201517>

Rossi S, Pitidis A. Multiple chemical sensitivity: review of the state of the art in epidemiology, diagnosis, and future perspectives. *Journal of Occupational and Environmental Medicine*. 2018 Feb;60(2):138.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5794238/>

Schalock PC, Menné T, Johansen JD, Taylor JS, Maibach HI, Lidén C, Bruze M, Thyssen JP. Hypersensitivity reactions to metallic implants—diagnostic algorithm and suggested patch test series for clinical use. *Contact Dermatitis*. 2012 Jan 1;66(1):4-19. Available from <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1600-0536.2011.01971.x>

*Stejskal V. Metals as a common trigger of inflammation resulting in non-specific symptoms: diagnosis and treatment. *The Israel Medical Association Journal: IMAJ*.

2014 Dec;16(12):757. Available from: <http://www.melisa.org/wp-content/uploads/2015/01/Metals-as-a-Common-Trigger-of-Inflammation.pdf>.

*Stejskal VD, Cederbrant K, Lindvall A, Forsbeck M. MELISA—an in vitro tool for the study of metal allergy. *Toxicology in vitro*. 1994 Oct 1;8(5):991-1000. Available from

<http://www.melisa.org/pdf/MELISA-1994.pdf>.

*Sterzl I, Procházková J, Hrdá P, Bártová J, Matucha P, Stejskal VD. Mercury and nickel allergy: risk factors in fatigue and autoimmunity. *Neuro Endocrinol Lett*. 1999; 20:222. Available from: <http://www.melisa.org/pdf/nialler.pdf>.

*Sterzl I, Prochazkova J, Hrdá P, Matucha P, Bartova J, Stejskal V. Removal of dental amalgam decreases anti-TPO and anti-Tg autoantibodies in patients with autoimmune thyroiditis. *Neuroendocrinology Letters*. 2006 Dec;27:103. Available from:

http://www.melisa.org/pdf/Sterzl_Am_2006.pdf.

Tahmasbi S, Ghorbani M, Masudrad M. Galvanic corrosion of and ion release from various orthodontic brackets and wires in a fluoride-containing mouthwash. *Journal of Dental Research, Dental Clinics, Dental Prospects*. 2015;9(3):159. Available from:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4682012/>.

*Teo ZW, Schalock PC. Hypersensitivity reactions to implanted metal devices: facts and fictions. *J Investig Allergol Clin Immunol*. 2016 Jan 1;26(5):280. Available from: <https://pdfs.semanticscholar.org/698e/e81a0e73f24113646ef6e9d0ec9f34b7e135.pdf>

Tibau AV, Grube BD, Velez BJ, Vega VM, Mutter J. Titanium exposure and human health. *Oral Science International*. 2019 Apr;16(1):15-24. Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/osi2.1001>

Yilmaz S, Adisen MZ. Ex vivo mercury release from dental amalgam after 7.0-T and 1.5-T MRI. *Radiology*. 2018 Sep;288(3):799-803. Available from: <https://pubs.rsna.org/doi/pdf/10.1148/radiol.2018172597>

*Zohdi H, Emami M, Shahverdi HR. Chapter 7: Galvanic Corrosion Behavior of Dental Alloys. *Environmental and Industrial Corrosion – Practice and Theoretical Aspects*. 2012.

**Also noted in References and Resources Section for Dental Biocompatibility and Oral Galvanism Online Learning Video.*