

P73. THE BENEFITS AND POTENTIAL RISKS OF MERCURY IN DENTAL AMALGAM

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Dental amalgam is a restorative material has been used in dentistry for a long time which contains elemental mercury approximately %50 with other metals such as silver, tin, copper and zinc. In recent years, new restorative dental materials have become more convenient for dental filling. However, dental amalgams maintain their popularity due to the properties such as strength, longevity, easy application and lower cost. Despite these advantages, usage of amalgam restorations is restricted because of the side effects and toxicity, even more it is banned in some countries such as Norway, Denmark and Sweden. Dental amalgam continuously releases low levels of mercury vapor. Elemental mercury in dental amalgam is exposed via inhalation from filling, then get into the bloodstream and mainly target the brain by crossing blood brain barrier rapidly. In addition to toxic effects on central nervous system, elemental mercury may cause damages on renal, respiratory and cardiovascular system, also gingival tattoos. Current evidence suggests that amalgam poses a clear risk to developing fetuses and children and to people with common genetic susceptibilities. This statement is not intended to imply that other dental materials are without risk. Several factors affect the release of mercury from amalgam restorations; number and surface of dental amalgam, inhalation/ingestion absorption levels, magnification factors, individual habits such as eating, tooth brushing, nose-mouth breathing ratio and body weight. Estimated average intake of elemental mercury from dental amalgam is 1-5 µg/day and tolerable intake for elemental mercury vapor is 0.2 ug/ m³ established by World Health Organization. The daily elemental mercury in-take levels lower than the identified threshold level. Therefore, further studies are needed to elucidate this confliction.

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