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(Corrosion of the nickel contained in Stainless Steel Crown in artificial saliva)

ABSTRACT

Background: *Stainless steel crown (SSC) which contained nickel chromium (NiCr) alloys are often used for restoration in the field of pediatric dentistry that requiring strength, such as crown. NiCr alloys containing 68-80% nickel, 11.9 to 26.3% chromium, and additional components such as molybdenum, niobium, beryllium, silicon, aluminum, and titanium. Unfavorable effects of dental metals is due to the corrosion process, which resulted in the release of metal ions. In the oral cavity, corrosion process occurs due to the reaction of metal with oral electrolyte fluid which called saliva. Nickel was choosen to be measured because nickel is the main composition of SSC.* **Purpose:** *To determine the number of nickel corroded in artificial saliva with two diferrent pH which are neutral pH (7) and acidic pH (5) on immersing for 1, 3, and 7 days.* **Methods:** *A whole research sample divided into three groups. Each group consists of eight samples. Group 1 as a control group were using an aquadest as a media, group 2 were using artificial saliva with acidic pH (5), group 3 were using artificial saliva with neutral pH (7). All of the samples immersed for 1, 3, and 7 days. Then, the level of nickel corroded measured with Atomic absorption spectrophotometer (AAS).* **Results:** *The level of nickel corroded increased from day 1 to 3, and the peak is on the 7th day, and the level of nickel corroded that immersed in acidic artificial saliva were higher than the group that immersed in neutral artificial saliva.* **Conclusion:** *The highest level of nickel corroded found at the group that immersed in acidic artificial saliva and on the day 7 of immersion.*

Keywords: *Stainless steel crown, nickel, artificial saliva, corrosion*