

Nickel Allergy and Orthodontics

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Abstract: Nickel is a component of nickel-titanium and stainless steel alloys which are widely used in orthodontic appliances. Level of nickel in saliva and serum increases significantly after the insertion of fixed orthodontic appliances. A threshold concentration of approximately 30 ppm of nickel may be sufficient to elicit a cytotoxic response. Experimental and clinical studies indicate that oral exposure to nickel-containing alloys may reduce the chance of nickel sensitization by later exposure to the metal, i.e., induce a certain tolerance. Alternatives include twistflex stainless steel, fibre-reinforced composite archwires, TMA, pure titanium, and gold-plated wires may also be used without risk.

Key words: Nickel, Type IV hypersensitivity, Sensitization, Nickel dermatitis

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