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## Nano toxicity in dentistry

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The ever inquisitive, innovative minds of scientists and researchers have led to the evolution of nano materials which are utilized in various medical, dental and industrial fields. Due to their nano metric size these nano particles can translocate to any part of the human body and cause toxicity too. Toxicity being one of the most worst night mares, this tiny little particle too has kept researchers on their toes to relentlessly keep doing their trial and error tests. But still the debate on the biosecurity of these materials still prevails. The myriad of applications of nano materials in dentistry has led to the emergence of nano dentistry. There are two methods by which nano technology creates structures. In dentistry, the top down approach is followed. Unlike the gastro intestinal tract and lungs the human skin plays as a best barrier against the passage of foreign particles. Umpteen number of studies have proved nano particle toxicities but again it depends on various other factors like shape, size and mode of synthesis. Nano materials are used in numerous ways in the various branches of dentistry. Hence these particles get into any part of the human system through the oral cavity. Heravi in his *in vitro* cytotoxicity assessment of an orthodontic adhesive composite with titanium oxide nano particles reported that addition of 1% by weight of titanium oxide nano particles into the composite structure showed less hazards as compared to pure adhesive. Another study by Libonati revealed that leached composite materials caused embryotoxicity in mouse blastocyst *in vitro* whereas no toxicity *in vivo* when subcutaneously implanted. Hence, this review paper discusses the various toxicological effects of the nano dental materials as it becomes imperative for us to have an in-depth knowledge of the toxicity of these, as we pave the way for these nano material particles entering into our circulatory system through the oral route for a good cause but might also be noxious.

## Biography

Reshma Karkera is a Professor in the Department of Prosthodontics at A J Institute of Dental Sciences, Mangalore, India, working as an Academician and Clinician for the past 16 years. She has recently undergone a clinical update course at Otago Dental College, Dunedin, New Zealand. She has a keen interest in material science involving implants, maxillofacial prosthetics, dental materials and nano technology. Currently, she is pursuing her PhD.

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