

Standards for Dental Materials

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1. Abstract

Dental materials include many types of dental products of variable characteristics that are designed and manufactured for use in dentistry including materials present in instruments used in dental implants. Standards for the practice of dentistry and the dental materials have been recognized for a long time play as playing important contribution to the quality and safety of the practice of dentistry and dental treatments by professional dentists [1-3].

Derek W. Jones emphasized the United Kingdom role in the emergence and development of international dental standards (ISO) aiming at guaranteeing the safety and quality of dental practice through its significant role in the establishment of the ISO which helped countries in the local approval and use of dental materials [4,5].

ISO specifies the general requirements for the dental materials use.

Important requirements include [3-5]:

1. Dental materials used in dental implant procedures should be known to be well tolerated by users. And not associated with serious adverse effects.
2. Dental materials should be manufactured under appropriate design and processes that guarantee an acceptable level of biological response that can be expected when they are appropriately used.

Figure 1 shows an example of dental material.

Standards for Dental Materials Include [3-5]:

1. Development and evaluation of dental materials.



2. Defining the ideal characteristics of dental materials including:
 - a. Biocompatibility characteristics that make the used materials non-toxic and unlikely to cause neither significant allergic reactions nor serious irritation.
 - b. Mechanical and dimensional characteristics that make the used materials physically powerful, stable, long-lasting and experience little dimensional change with temperature changes and exposure to solvents.
 - c. Resistance to corrosion.
 - d. Physical characteristics that make the used materials have adequate manipulability (Do not require much effort and long time when used) and also tasteless, odorless and do not cause unpleasant feeling.

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- e. Cost benefits characteristics that make the used materials affordable with more benefits than disadvantages.
- f. Practical characteristics that make the used materials cleanable, repairable, easily maintained.
- 3. Ensuring safe and healthy use.
- 4. Ensuring effectiveness.
- 5. Determining the duration of use.

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