

# Composites and hybrid materials used for implants and bone reconstruction: a state of the art

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## Abstract

This work presents a review, covering the years 2007 to 2020, on the main composite and hybrid materials on which it is investigated for developing medical applications, such as personalized bone implants. Attention is directed to the general qualities that these composite materials must have, from the physical-mechanical and clinical point of view, although occasionally other properties are also considered. Most of the results that are presented have been obtained in experiments carried out with animal models, the main limitations that are faced when evaluating one or another material type for implant are also considered. The fundamental result is that it is not feasible to establish a predominance of a material over others. Nevertheless, the synthesis of nano-hydroxyapatite, due to its similarity to natural bone apatite, should be present in any variant of composite material for bone implants.

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