

1. Record Nr.	UNINA9910346668303321
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Titolo	Tribological Performance of Artificial Joints
Pubbl/distr/stampa	MDPI - Multidisciplinary Digital Publishing Institute, 2019
ISBN	3-03921-079-3
Descrizione fisica	1 electronic resource (178 p.)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>Joint replacement is a very successful medical treatment. However, the survivorship of the implants could be adversely affected due to the loss of materials in the form of particles or ions as the bearing surfaces articulate against each other. The consequent tissue and immune response to the wear products, remain one of the key factors of their failure. Tribology has been defined as the science and technology of interacting surfaces in relative motion and all related wear products (e. g., particles, ions, etc.). Over the last few decades, in an attempt to understand and improve joint replacement technology, the tribological performance of several material combinations have been studied experimentally and assessed clinically. In addition, research has focused on the biological effects and long term consequences of wear products. Improvements have been made in manufacturing processes, precision engineering capabilities, device designs and materials properties in order to minimize wear and friction and maximize component longevity in vivo.</p>