



**Ronald E. Hatcher**  
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**Osteoarthritis of the hip and knee: the science  
behind the pain, and how new research is  
revolutionizing treatment**

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**ABSTRACT:**

Osteoarthritis of the hip and knee is a condition that affects over 50 million Americans and is a common cause of disability and activity limitation. Biologic, environmental, and mechanical factors contribute to the development of this condition. The pathophysiology of the disease from a molecular to gross level will be discussed. Symptoms of joint pain and stiffness can be treated with a combination of physical therapy, activity modification, anti-inflammatory medications, weight loss, ice and heat, various injections, however these do not reverse the process of cartilage degeneration. The ultimate treatment for debilitating osteoarthritis is arthroplasty, or joint replacement. Surgical technique of total hip and knee replacement will be reviewed, along with overview of various implants and their function. Lastly, treatments on the horizon will be discussed. As our understanding of the immune system improves, we are developing agents that leverage a patient's natural immune response to provide joint-preserving treatment for arthritis. In the future, definitive treatment for the disease may be largely medical, not surgical, and these future possibilities will be explored.

**BIOGRAPHY:**

Christina Gutowski, MD MPH is a practicing orthopaedic oncology surgeon at MD Anderson Cancer Center at Cooper University Hospital, in Camden, NJ. She grew up in Princeton, NJ and attended Science on Saturdays as a Princeton High School student! After graduating from PHS, she pursued dual majors in Biology and Economics at the University of Virginia prior to returning to NJ for medical school. During medical school, she obtained her Masters in Public Health from University of California- Berkeley, focusing in Health Policy and Management. She then completed an orthopaedic surgery residency at Thomas Jefferson University Hospital in Philadelphia, PA. After residency, Christina pursued a surgical fellowship in musculoskeletal oncology at Memorial Sloan Kettering Cancer Center in New York, NY, and then joined the Cooper faculty as an orthopaedic tumor surgeon in 2017. Her practice focuses on bone and soft tissue tumors, metastatic bone disease, and complex joint reconstruction. She resides in Haddonfield, NJ with her husband and enjoys marathons, triathlons, and international mountain climbing.