

Evidence insufficient to recommend routine antibiotics for joint replacement patients

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The American Academy of Orthopaedic Surgeons (AAOS), and the American Dental Association (ADA) found that there is insufficient evidence to recommend the routine use of antibiotics for patients with orthopaedic implants to prevent infections prior to having dental procedures because there is no direct evidence that routine dental procedures cause prosthetic joint infections.

The AAOS and ADA's recommendations are based on a collaborative evidence-based [clinical practice guideline](#) that focuses on the possible linkage between orthopaedic implant infection and patients undergoing dental procedures.

"As clinicians, we want what is in the best interest of our patients, so this clinical practice guideline is not meant to be a stand-alone document. Instead it should be used as an [educational tool](#) to guide clinicians through [treatment decisions](#) with their patients in an effort to improve quality and effectiveness of care," said David Jevsevar, MD, MBA, chair of the AAOS Evidence Based Practice Committee which oversees the development of clinical practice guidelines.

"It has been long debated that patients with [orthopaedic implants](#), primarily hip and knee replacements, are prone to implant infections from routine dental procedures," added Dr. Jevsevar who also is an [orthopaedic surgeon](#) in St. George, Utah. "What we found in this analysis is that there is no conclusive evidence that demonstrates a need to routinely administer antibiotics to patients with an orthopaedic implant, who undergo dental procedures.

- In 2010, there were more than 302,000 hip replacement and 658,000 [knee replacement](#) procedures performed in the United States.[1]
- Infections can occur when foreign

organisms enter the wound during or at any point following joint replacement, and can lead to additional surgery and prolonged [antibiotic treatment](#).[2]

- For studies of hip and knee included in this guideline, the mean rate of infection was 2 percent.[3]

Elliot Abt, DDS, MS, MSc, who served as member of the AAOS-ADA work group on behalf of the ADA, pointed out that the review committee conducted a thorough review of existing clinical research published in the peer-reviewed literature.

"This guideline was based primarily on clinical research which examined a large group of patients, all having a prosthetic hip or knee and half with an infected prosthetic joint," said Dr. Abt, a general dentist in Skokie, Ill., and a member of the ADA Council on Scientific Affairs. "The research showed that invasive dental procedures, with or without antibiotics, did not increase the odds of developing a prosthetic joint infection."

This clinical practice guideline, with three recommendations, is based on a systematic review of the correlation between dental procedures and prosthetic joint infection (PJI).

- Recommendation one, which is based on limited evidence, supports that practitioners consider changing their longstanding practice of prescribing prophylactic antibiotics for patients who undergo dental procedures. Limited evidence shows that dental procedures are unrelated to PJI.
- Recommendation two addresses the use of oral topical antimicrobials (topical antibiotic administered by a dentist) in the prevention of PJI in patients undergoing dental procedures. There is no direct evidence that the use of oral topical antimicrobials before dental procedures will prevent PJI.

- Recommendation three is the only consensus recommendation in the guideline, and it supports the maintenance of good oral hygiene.

"Research is always changing and we need to work to improve clinical research databases, so in the future any type of prospective research done in this area will help shed light on prophylaxis and orthopaedic infection rates," Dr. Jevsevar said.

More information: The "Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures" guideline replaces the previous AAOS Information Statement, "Antibiotic Prophylaxis for Bacteremia in Patients with Joint Replacement." The full guideline along with all supporting documentation and workgroup disclosures is available on the AAOS website:

www.aaos.org/guidelinesand the ADA website:

www.ada.org/2583.aspx?currentTab=2#replace

1. HCUPnet. Healthcare Cost and Utilization Project (HCUP). 1993-2010. Agency for Healthcare Research and Quality, Rockville, MD. hcupnet.ahrq.gov/Accessed November 29, 2012.

2. Della Valle CJ, Zuckerman JD, Di Cesare PE. Periprosthetic Sepsis. Clin Orthop 2004;(420):26-31.

3. American Academy of Orthopaedic Surgeons and the American Dental Association Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures Guideline. Rosemont (IL): AAOS: 2012.

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