

What do Dental Teams need to know about Antibiotic Prophylaxis Prior to Invasive Dental Procedures in Patients with Total Joint Replacement (TJR)?

- Dental procedures pose no greater risk for systemic bacteremia than activities of daily living, such as brushing your teeth or eating.
- The use of antibiotic prophylaxis is not recommended. The use of antibiotic prophylaxis poses unnecessary risk of adverse drug reactions and/or antibiotic resistance.
- Recommendations for antibiotic prophylaxis should be considered individually in each patient, depending on their medical history.
- Following is a summary of the literature supporting this public health recommendation:

Year

Key Points

2024

A retrospective cohort study of 10,894 patients evaluated antibiotics prior to dental procedures and the association between dental procedures and periprosthetic joint infection (PJI). Routine antibiotics prior to dental procedures were not shown to affect the risk of late-presenting PJI. ***These findings suggest that routine antibiotic prophylaxis before dental procedures is not necessary after total hip and total knee arthroplasty (THA/TKA).***(1)



2023

An analysis of 2,344 patients who were admitted with late periprosthetic joint infections (PJI) noted no relationship with prior dental procedures. Authors' conclusion: ***“In the absence of benefit, the continued use of antibiotic prophylaxis poses an unnecessary risk to patients from adverse drug reactions and to society from the potential of antibiotic prophylaxis to promote development of antibiotic resistance. Dental antibiotic prophylactic use to prevent late PJI should, therefore, cease.”*** (2)



2022

Antibiotic prophylaxis is not utilized in the UK. An analysis of dental records for more than 9000 British patients admitted for treatment of late PJI showed ***no significant association between invasive dental procedures and subsequent late PJI.*** (3)



2016

In 2016, the American Academy of Orthopaedic Surgeons developed Appropriate Use Criteria for the Management of Patients with Orthopaedic Implants Undergoing Dental Procedures stating that ***“the chance of oral bacteremia being related to joint infections is extremely low, with no evidence for an association.”*** A tool was developed to help clinicians make patient specific decisions for prophylaxis. (4) In 2016, the American Association of Orthopaedic Surgeons removed clindamycin as an option for dental prophylaxis due to the high risk of C. difficile diarrhea.



2014

In 2014, the ADA’s Council on Scientific Affairs assembled an expert panel to conduct a systematic review that recommended: ***“...for patients with prosthetic joint implants, prophylactic antibiotics are not recommended prior to dental procedures.”*** (5)



References

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- 2 - Thornhill MH, Gibson TB, Pack C, Rosario BL, Bloemers S, Lockhart PB, Springer B, Baddour LM. Quantifying the risk of prosthetic joint infections after invasive dental procedures and the effect of antibiotic prophylaxis. J Am Dent Assoc. 2023 Jan;154(1):43-52.e12. doi: 10.1016/j.adaj.2022.10.001. Epub 2022 Dec 2. PMID: 36470690.
- 3 - Thornhill MH, Crum A, Rex S, Stone T, Campbell R, Bradburn M, Fibisan V, Lockhart PB, Springer B, Baddour LM, Nicholl J. Analysis of Prosthetic Joint Infections Following Invasive Dental Procedures in England. JAMA Netw Open. 2022 Jan 4;5(1):e2142987. doi: 10.1001/jamanetworkopen.2021.42987. PMID: 35044470; PMCID: PMC8771300.
- 4 - American Academy of Orthopaedic Surgeons Appropriate Use Criteria for the Management of Patients Undergoing Dental Procedures [aaos.org/dentalauc](https://www.aaos.org/dentalauc) Published September 23, 2016.
- 5 - Sollecito T, Abt E, Lockhart P, et al. The use of prophylactic antibiotics prior to dental procedures in patients with prosthetic joints: Evidence-based clinical practice guideline for dental practitioners — a report of the American Dental Association Council on Scientific Affairs. JADA. 2015;146(1):11-16.