

# Study finds minimal risk for serious infection with 'in bone' prosthesis

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A new study in today's issue of the *Journal of Bone and Joint Surgery* found minimal risk for severe infection with osseointegrated implants—a newer prosthetic system, press-fitted directly into the femur bone—that enables bone growth over a metal, robotic prosthetic limb in patients with above knee amputations.

For more than 600 years, patients with amputations above the knee received a prosthesis that fit over the skin and soft tissue of the amputation stump. However, approximately one-third of these patients experience problems, including discomfort and skin irritation, resulting in limited mobility and reduced quality of life. Over the past 20 years, osseointegrated implants—or implants that grow directly into the bone—have emerged, and while most patients do well with these implants, concerns persist about the risk for serious infection.

Using a new infection classification system, researchers tracked adverse events in 86 patients (91 implants) who received a "press-fit" osseointegrated implant between 2009 and 2013. For each patient, the procedure was performed in two stages: first, a porous-coated implant was placed in the femur bone, and second, a stoma, or opening, was created to attach the prosthesis. The patients, ages 25 to 81, were followed for a median of 31 months.

Among the results:

- Thirty-one patients had no side effects or complications related

to the osseointegration system.

- Twenty-nine patients developed a grade one or two infection, successfully managed with "simple measures."
- Twenty-six patients had no infection, but reported other complications such as problems with the orthopaedic hardware, problems with skin and soft tissue, or fracture of the [femur bone](#).
- No [patients](#) had a grade three or four infection.

"For amputees struggling with socket fit, the osseointegrated press-fit implant provides greater comfort, mobility, and the opportunity to function closer to an able bodied person, said study author Munjed Al Muderis, MB ChB, an orthopaedic surgeon at Macquarie University Hospital in Sydney, Australia. "We can confidently say that this type of prosthesis is a viable choice and the new infection classification system, developed by the Osseointegrated Group of Australia, provides an effective tool for the use in patient selection as well as [infection](#) management."

**More information:** Safety of Osseointegrated Implants for Transfemoral Amputees, *J Bone Joint Surg Am*, 2016 Jun 01; 98 (11): 900 -909 . [dx.doi.org/10.2106/JBJS.15.00808](https://doi.org/10.2106/JBJS.15.00808) , [jbjs.org/content/98/11/900#abstract-1](http://jbjs.org/content/98/11/900#abstract-1)

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