

Recommendation

1. There is insufficient evidence to recommend one surgical amputation procedure over another.

(Neither for nor against | Not reviewed, Not changed)

Discussion

The primary objective of a lower limb surgical amputation procedure is a well-healed and well-shaped residual limb that is free from pain or other complications with excellent function and soft tissue characteristics. While the surgical procedure chosen is most often related to the surgeon's preference and experience or is determined after a conversation between the surgeon and the patient, involving other members of the care team can better align expected surgical outcomes with expected rehabilitation outcomes. For example, if there is uncertainty regarding the optimal length of a residual limb, a pre-operative consultation with an experienced physiatrist or prosthetist should be considered. Of the many contemporary lower limb surgical amputation procedures, only a few (e.g., Burgess versus Ertl, Gritti-Stokes versus traditional transfemoral) have been compared in non-randomized observational studies.[\(61-66\)](#) No one procedure has been shown to be clearly superior to another, or to lead to a clear advantage in prosthesis use or rehabilitation potential. Each procedure has its own advantages and disadvantages. Further research is needed to explore how different surgical techniques impact functional outcomes based on underlying indication for amputation (e.g., trauma, vascular deficiency, infection). Also, more research is needed to further outline the potential strengths and weaknesses of the available procedures beyond expert opinion.

The Work Group considered the assessment of the evidence from the 2017 VA/DOD LLA CPG and did not systematically review the evidence related to this recommendation in this update.[\(61-66\)](#) Therefore, this recommendation is categorized as *Not reviewed, Not changed*. The Work Group's confidence in the quality of the evidence overall was very low. The benefits and harms were balanced as there were no major differences in serious adverse effects between surgical amputation procedures. Patient values and preferences may have large variation. Other implications the Work Group considered included subgroup considerations surrounding patient demographics and the feasibility of training for specific surgical procedures. Thus, the Work Group decided upon a *Neither for nor against* recommendation.

Recommendation

2. For patients with transfemoral amputation who meet eligibility criteria, we suggest osseointegration as an option to improve prosthesis use.

(Weak for | Reviewed, New-added)

Discussion

Osseointegration, as described by Atallah et al. (2018)[\(67\)](#), is "the direct connection of a 'nonvital' component incorporated in living bone". This procedure originated in the dental field in the 1960s and was integrated into the audiology field through bone-anchored hearing aids in the late 1970s. The introduction of osseointegration as a technique for individuals with limb loss as a bone-