This video demonstrates the agonist-antagonist myoneural interface technique at the time of transtibial amputation. The coaptation of agonist-antagonistic muscle pairs restores natural contraction-relaxation relationships and improves proprioceptive feedback if using a prosthetic limb compared with a traditional isometric myodesis performed during amputation. This video highlights a case study and includes indications for the procedure and a brief review of the literature on agonist-antagonist myoneural interface amputation.