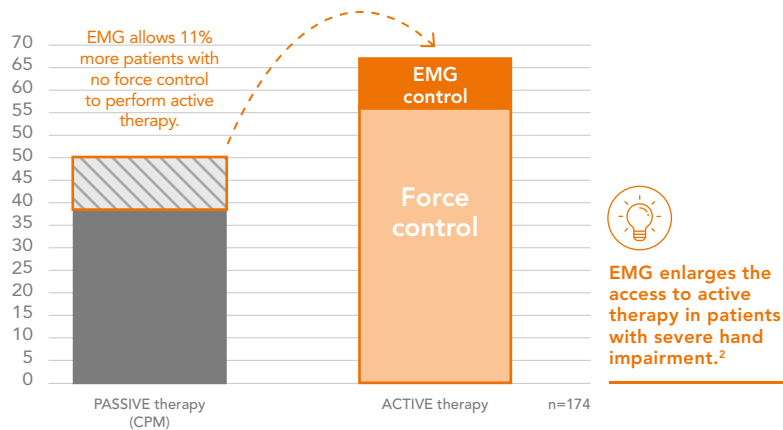# AMADEO® EMG-MODULE

Early Active Hand Therapy

Surface electromyography (EMG) can detect muscle activation in severely affected patients with little to no movement in their fingers and hand. The combination of AMADEO® and EMG allows patients, unable to produce detectable force at fingertips, to benefit from active therapy.[1]

EMG allows 11% more patients with no force control to perform active therapy.

EMG control

Force control

EMG enlarges the access to active therapy in patients with severe hand impairment.[2]

PASSIVE therapy (CPM)

ACTIVE therapy   n=174

EMG Benefits

· Closed-loop sensory feedback
  provides information on which muscle group is active, even if no finger movement can be seen.

· Detection of the patient´s intention
  to perform a hand movement enables early active therapy.

· Biofeedback of co-contraction patterns
  to reduce co-activation of agonist and antagonist muscles.

1 Turolla A, Baldan F, Baba A, Mahmoud A, Jakob I. Effect of Rehabilitation Robotics controlled by sEMG Closed-Loop System for the Recovery of Hand Function after Stroke. WCNR 2018 Oral Abstracts in Neurorehabil Neural Repair 32(4-5):324.

2 Baldan F, Turolla A, Rimini D, Pregnolato G, Maistrello L, Agostini M, Jakob I. Robot-assisted rehabilitation of hand function after stroke: Development of prediction models for reference to therapy. J Electromyogr Kinesiol. 2021 Feb 16; 57:102534.

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