Prosthetic arm

Prosthetic arms controlled by a brain-computer interface can enable people with tetraplegia to perform functional movements. However, vision provides limited feedback because information about grasping objects is best relayed through tactile feedback. Flesher et al. supplemented vision with tactile percepts evoked using a bidirectional brain-computer interface that records neural activity from the motor cortex and generates tactile sensations through intracortical microstimulation of the somatosensory cortex. This enabled a person with tetraplegia to substantially improve performance with a robotic limb; trial times on a clinical upper-limb assessment were reduced by half, from a median time of 20.9 to 10.2 seconds. Faster times were primarily due to less time spent attempting to grasp objects, revealing that mimicking known biological control principles results in task performance that is closer to able-bodied human abilities [1)].

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