Nerve autograft

Currently, nerve autograft is the preferred treatment modality for peripheral nerve defects, while the therapy is constantly plagued by the limited donor, loss of donor function, formation of a neuroma, nerve distortion or dislocation, and nerve diameter mismatch. To address these clinical issues, the emerged nerve guidance conduits (NGCs) are expected to offer effective platforms to repair peripheral nerve defects, especially those with large or complex topological structures. Up to now, numerous technologies are developed for preparing diverse NGCs, such as solvent casting, gas foaming, phase separation, freeze-drying, melt molding, electrospinning, and three-dimensional (3D) printing. 3D printing shows great potential and advantages because it can quickly and accurately manufacture the required NGCs from various natural and synthetic materials [1)]

1)
Liu K, Yan L, Li R, Song Z, Ding J, Liu B, Chen X. 3D Printed Personalized Nerve Guide Conduits for Precision Repair of Peripheral Nerve Defects. Adv Sci (Weinh). 2022 Feb 18:e2103875. doi: 10.1002/advs.202103875. Epub ahead of print. PMID: 35182046.