

3D Bioprinting Technologies in Regenerative Medicine Applications

Sang Jin Lee, Ph.D.

Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine,
Medical Center Boulevard, Winston-Salem, NC 27157 USA

Three-dimensional (3D) bioprinting technologies combined with tissue engineering principle have been developed to offer creation of biological tissue constructs that mimic the structural, anatomical, and functional features of native tissues or organs. These cutting-edge technologies could make it possible to precisely deposit multiple cell types and biomaterials in a single 3D tissue architecture. Consequently, 3D bioprinting has rapidly become of the most attractive and powerful tool to bioengineer more anatomical and functional similarity of human tissues or organs for future clinical regenerative medicine applications. Here, we will discuss challenges and opportunities in the field and provide an outlook to the future of 3D bioprinting technologies in regenerative medicine applications.