

Technology: [Methods and compositions for vein harvest and autografting](#)

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Abstract: The leading cause of graft failure is the subsequent development of intimal hyperplasia, which represents a response to injury that is thought to involve smooth muscle proliferation, migration, phenotypic modulation, and extracellular matrix (ECM) deposition. Surgical techniques typically employed for vein harvest--stretching the vein, placing the vein in low pH, solutions, and the use of toxic surgical skin markers--are shown here to cause injury. The invention therefore provides for non-toxic surgical markers than also protect against stretch-induced loss of functional viability, along with other additives. Devices and compositions for reducing physical stress or protecting from the effects flowing therefrom, also are provided.