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A review of evidence-based techniques for improving adipose tissue harvesting for grafting or as a source of regenerative cells

Adipose tissue contains multipotent elements with phenotypic and gene expression profiles similar to human mesenchymal stem cells (hMSCs) and pericytes. The viability and cellular activity of autologous, hMSC/pericyte-enriched fat graft product as well as that of adipose derived regenerative cells, stromal vascular fraction or micronized structural tissue is highly dependent on the utilization of appropriate harvesting and processing techniques. Here, I review the evidenced based data supporting an entirely new approach to adipose tissue harvesting. This will include a review of the relevant anatomy of adipose tissue, review of various manual and automated harvesting techniques, as well as techniques for the avoidance or treatment of harvesting complications. This information will be extremely useful to the non-plastic surgeon who desires to learn best practices for safe and efficient adipose derived regenerative cell harvesting. In addition, the experienced plastic surgeon will benefit from learning these techniques which are a significant departure from the methodology used for routine liposuction.

Biography

Todd Malan is considered one of the true pioneers of fat derived stem cell therapies in the USA. In October of 2009, He was the first U.S. physician to utilize adipose or fat derived stem cells for soft tissue reconstruction. He has described his techniques and experience as an author in two medical textbooks as well as having presented at dozens of stem cell conferences worldwide. He has been pivotal in developing safe protocols for stem cell harvesting and deployment for regenerative medicine and has trained hundreds of physicians worldwide in the safe and effective use of adipose derived stem cells. He began to seek out ways to utilize adipose stem cells for regenerative applications after a close family member was diagnosed with multiple sclerosis (MS). He now divides his practice time into cosmetic stem cell procedures and regenerative medicine research for patients with chronic disease and degenerative disorders.

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