Bio-Scaffolds and Cellular Medicine

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Abstract:

The use of bio-scaffolds and stem cells has taken many directions. Scaffolds may be of various constructs. Scaffolds and matrices of various natural sources both macroscopic ranging from complete grafts to microscopic particles including inherent cells and bio-active growth factors. These various scaffolds may be of many origins. Allogenic, autologous, 3-D bio-printed, xenographic, and may also be in combination with stem cells.

Stem cells may be autologous, allogenic, perinatal, and expanded in laboratories.

Cellular sources may be also derived from various perinatal sources such as cord blood, whartons jelly, and amnion. Adult human derived may be of bone marrow and adipose, both non-expanded and expanded. Additionally, embryonic and induced pluripotent stem cells (IPS) have been studied and involved in clinical trials.

An understanding of the nature and pathophysiology of stem cells and scaffolds is necessary to individualize treatment. Problems with the cellular niche especially the aging population, also must be accounted for, as disease states associated with this may affect successive outcome.

Biography:

Dr. Dennis Lox is a world renown expert in Sports and Regenerative Medicine. Dr. Lox has edited two medical textbooks, eight medical textbook chapters, and authored numerous scientific articles and abstracts. Dr. Lox lectures internationally on the field of Regenerative Medicine and Stem Cell Therapy.

Dr. Lox maintains an active Sports and Regenerative Medicine practice in Beverly Hills, California and Tampa Bay, Florida.