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Sommario/riassunto	Adipose tissue is a rich, ubiquitous, and easily accessible source for multipotent mesenchymal stromal/stem cells (MSCs), so-called adipose-derived stromal/stem cells (ASCs). Primary isolated ASCs are a heterogeneous preparation consisting of several subpopulations of stromal/stem and precursor cells. Donor-specific differences in ASC isolations and the lack of culture standardization hinder the comparison of results from different studies. Nevertheless, ASCs are already being used in different in vivo models and clinical trials to investigate their ability to improve tissue and organ regeneration. Many questions concerning their counterparts and biology in situ, their differentiation potential in vitro and in vivo, and the mechanisms of regeneration (paracrine effects, including regeneration-promoting factors and extracellular vesicles, differentiation, and immunomodulation) are not completely understood or remain unanswered. This Special Issue covers research articles investigating various adipose tissues as a source for ASC isolation, specific cultures methods to enhance proliferation or viability, and the differentiation capacity. Furthermore, other studies highlight aspects of various diseases, the immunosuppressive potential of ASCs and their derivates, or the in vivo tracking of transplanted ASCs. This edition is complemented by a review that summarizes the current knowledge of spheroid culture system methods and applications for mesenchymal stem cells.