

Preface

Stem-cell therapy uses stem cells to treat or prevent a disease or condition. As of 2024, the only FDA-approved therapy using stem cells is hematopoietic stem cell transplantation. This usually takes the form of a bone marrow or peripheral blood stem cell transplantation, but the cells can also be derived from umbilical cord blood. Research is underway to develop various sources for stem cells as well as to apply stem-cell treatments for neurodegenerative diseases and conditions such as diabetes and heart disease.

Stem-cell therapy has become controversial following developments such as the ability of scientists to isolate and culture embryonic stem cells, to create stem cells using somatic cell nuclear transfer, and their use of techniques to create induced pluripotent stem cells. This controversy is often related to abortion politics and human cloning. Additionally, efforts to market treatments based on transplant of stored umbilical cord blood have been controversial.¹

In the present book, fourteen typical literatures about Stem-cell therapy published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on Stem-cell therapy. We hope this book can demonstrate advances in Stem-cell therapy as well as give references to the researchers, students and other related people.

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¹ https://en.wikipedia.org/wiki/Stem-cell_therapy