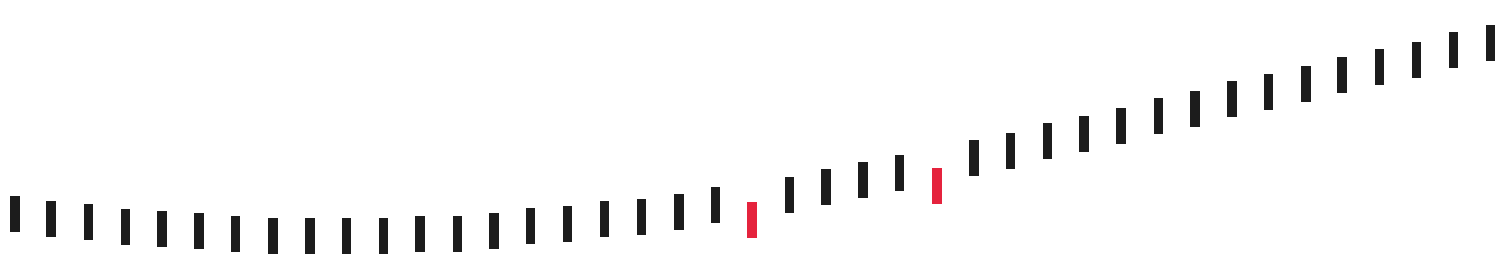


**Abstract**

# Survey and Review on Stem Cell Research

**Survey of researchers and literature review of research involving human embryos and human embryonic stem cells**

**Basel | 12/20/2025**



# Imprint

## **Survey of researchers and literature review of research involving human embryos and human embryonic stem cells**

Abstract

12/20/2025

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# Abstract

The Stem Cell Research Act (StRA) came into force in 2005. In preparation for the act's revision process, this report aims to provide an overview of current and future developments in research involving human pluripotent stem cells (hPSCs) and human embryos. We conducted a scoping review of the literature and interviewed ten experts in the field. Our findings show that both human embryonic stem cells (hESCs) and human induced pluripotent stem cells (hiPSCs, i.e. adult cells that were reprogrammed to pluripotent states) are widely used in research, with hiPSCs dominating in clinical trials. hPSC-derived models are valuable tools to study embryogenesis, organ development, disease mechanisms, and therapeutic strategies. Nevertheless, research on human embryos and fetuses remains of high value, as embryo models currently do not fully replicate in-utero organization and require validation against natural development. Applications of hPSCs in cell differentiation and organ models include the study of physiological development, pathological processes, drug screening and cell transplantation. While some hPSC-based therapies are already being tested in humans, researchers continue to face several limitations. Expert feedback about their experiences with the StRA was generally positive, although some adjustments were proposed. In conclusion, hPSC research enables scientists to study human biology in human tissue and holds promise for advancing specialized treatments.