

Stem Cells in Reproductive Medicine



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Stem cell biology promises to revolutionize reproductive medicine. Stem cells are undifferentiated cells that have the potential to give rise to other mature cell types. Stem cells can be obtained from embryos or induced genetically.

In addition, many adult cells retain their plasticity and have many characteristics of other stem cells. In reproduction, stem cells have been proposed to exist in both ovary and testes, resulting in gamete production. The topic of ovarian stem cells is controversial, however sperm stem cells are fairly well characterized. Among adult stem cells, the endometrium is a rich source of multipotent stem cells that can be easily obtained through an endometrial biopsy. These stem cells have vast regenerative properties and can be used for derivation of multiple cell types in regenerative medicine. In addition, the bone marrow is a rich source of adult stem cells which help to repopulate the endometrium. Bone marrow derived stem cells are potential treatments for reproductive failure due to defects in uterine receptivity. Endometrial stem cells may be useful in the treatment of Asherman’s Syndrome or the thin endometrium.