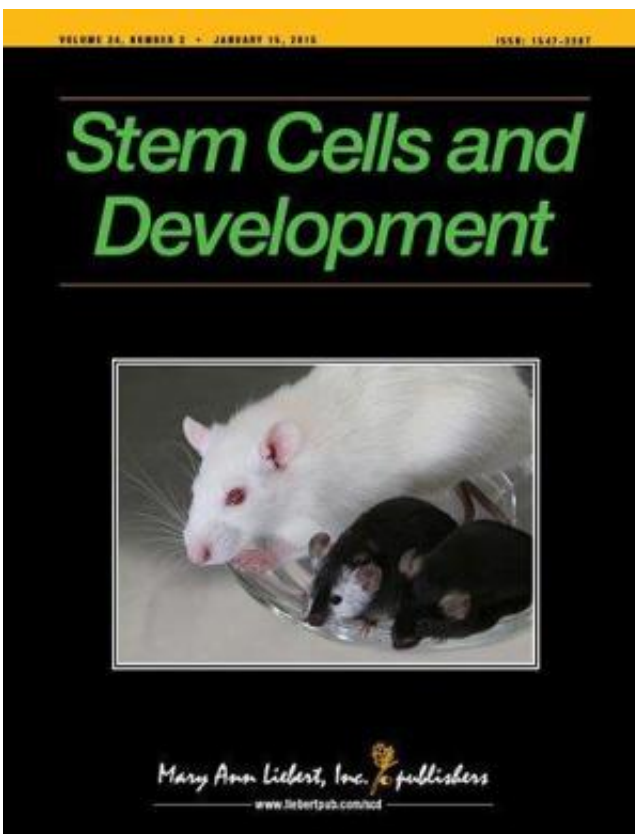


Does gestational diabetes affect the therapeutic potential of umbilical cord-derived stem cells?

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Credit: Mary Ann Liebert, Inc., publishers

Multipotent cells isolated from the human umbilical cord, called mesenchymal stromal cells (hUC-MSCs) have shown promise for use in cell therapy to treat a variety of human diseases. However, intriguing

new evidence shows that hUC-MSCs isolated from women with gestational diabetes demonstrate premature aging, poorer cell growth, and altered metabolic function, as reported in an article in *Stem Cells and Development*.

Jooyeon Kim and coauthors from University of Ulsan College of Medicine, Kyung Hee University College of Medicine, and Seoul National University Bundang Hospital, Seoul, Korea, compared the growth and viability characteristics of hUC-MSCs from the umbilical cords of pregnant women with and without [gestational diabetes](#). They evaluated cell growth, cellular senescence, mitochondrial function-related gene expression as a measure of metabolic activity, and the [stem cells'](#) ability to differentiate into various cell types such as bone and fat cells. They report their findings in the article "[Umbilical Cord Mesenchymal Stromal Cells Affected by Gestational Diabetes Mellitus Display Premature Aging and Mitochondrial Dysfunction](#)."

"We are only just beginning to scratch the surface of understanding how environmental and gestational stressors of all kinds affect stem cell populations," says Editor-in-Chief Graham C. Parker, PhD, The Carman and Ann Adams Department of Pediatrics, Wayne State University School of Medicine, Detroit, MI. "The work described offers a non-invasive assay to help determine risk of developmental clinical vulnerability."

More information: The article is available free on the [Stem Cells and Development](#) website until February 17th, 2015.

Provided by Mary Ann Liebert, Inc

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