

# Umbilical cord could be new source of plentiful stem cells, researchers say

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Stem cells that could one day provide therapeutic options for muscle and bone disorders can be easily harvested from the tissue of the umbilical cord, just as the blood that goes through it provides precursor cells to treat some blood disorders, said University of Pittsburgh School of Medicine researchers in the [online version](#) of the *Journal of Biomedicine and Biotechnology*.

Umbilical cord tissue cells can be expanded to greater number, are remarkably stable and might not trigger strong immune responses, said senior investigator Bridget M. Deasy, Ph.D., assistant professor in the Department of Orthopaedic Surgery, Pitt School of Medicine. The cells are obtained from the gelatinous material in the cord known as Wharton's jelly and from blood vessel walls.

"Our experiments indicate also that at least 21 million [stem cells](#), and possibly as many as 500 million, could be banked from a single [umbilical cord](#) after the birth of a baby," she noted. "So, the cord could become an accessible source of a multitude of stem cells that overcomes many of the restrictions, such as limited quantity as well as donor age and donor sex issues, that come with other adult stem cell populations."

Dr. Deasy and her team analyzed sections of two-foot-long human umbilical cords that were donated for research, looking for cells in Wharton's jelly and blood vessel walls that displayed the characteristic protein markers found in stem cells derived from other sources. The researchers then sought to find the best way to isolate the stem cells

from the cords, and tested them in the lab to confirm their ability to produce specialized cells, such as bone and cartilage, while retaining their invaluable ability to renew themselves.

To build on these findings, the team will test the umbilical cord stem cells in animal models of cartilage and bone repair, as well as muscle regeneration.

**More information:**

[www.hindawi.com/journals/jbb/2009/789526.html](http://www.hindawi.com/journals/jbb/2009/789526.html)

Provided by University of Pittsburgh Schools of the Health Sciences

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