

Scientists create artificial skin from stem cells derived from umbilical cord!

Nirmalya Dutta

November 25, 2013 at 10:47 am



In a major breakthrough, scientists have managed to grow artificial skin using stem cells derived from the umbilical cord. Scientists from the Tissue Engineering Research Group at the Department of Histology at the University of Granada demonstrated the ability of Wharton jelly mesenchymal stem cells to turn to oral-mucosa or skin-regeneration epithelia.

To grow the artificial skin, the researchers used, in addition to this new type of epithelia covering, a biomaterial made of fibrin and agarose, already designed and developed by the University of Granada research team. Prior studies from the same team, already pointed to the possibility that Wharton stem cells could be turned into epithelia cells.

That is indeed a lot of science talk. For the layman out there that means that skin can instantly be created for burn victims. Current methods to create artificial skin take weeks since the skin needs to be grown from other parts of the patient's healthy skin.

'Creating this new type of skin using stem cells, which can be stored in tissue banks, means that it can be used instantly when injuries are caused, and which would bring the application of artificial skin forward many weeks,' said Antonio Campos, Professor of Histology at the University of Granada and one of the authors of this study. The study is published in the journal *Stem Cells Translational Medicine*. (Read: [Stem cell therapy – what you ought to know](#))

That's another reason to preserve your child's umbilical cord (a cord containing blood vessels which attaches a foetus to the mother's placenta during gestation).

Why you should preserve your child's umbilical cord?

In the 1970s, researchers discovered that umbilical cord blood contains haemopoetic (blood forming) stem cells. Blood forming stem cells are those cells that are capable of developing into three types of mature blood cells – red blood cells, white blood cells and platelets. Cord blood stem cells are also known for their potential to give rise to other types of cells in the body. Since they are obtained from the baby's own blood and cells, the chances of rejection during medical treatment are very low. Cord blood banking is also a one-time opportunity to help your own family, this is because transplant patients have a better chance of recovery if they receive their own stem cells or those of close family instead of someone unrelated. There are now emerging therapies in which your child could use his/her own cord blood stem cells to help the body repair itself. In the future, children whose parents saved their cord blood will have better access to futuristic treatments.

Diseases that can be treated using stem cells

Stem cells can be used to treat a variety of blood cancers, blood disorders including anaemic anaemia, tumours, immune disorders and metabolic disorders. Also clinical trials on which suggest that in the future stems from the umbilical cord can be used to treat [Alzheimer's](#), Parkinson's, [hydrocephalus](#), [liver cirrhosis](#), [strokes](#) and traumatic brain injuries. Research is also on to check its application for treating type 1 diabetes, multiple sclerosis, cerebral palsy and rheumatoid arthritis.

What stem cell banking options do I have in India?

Cord blood banking was an alien concept in India until a few years back. The concept of retaining the child's umbilical cord is a custom in a number of Indian cultures, but preserving the placental as well as cord blood for future use has just picked up in popularity. According to a leading news paper the facility of cord blood banking has been in India for the past 25 years, but with only about 3 public and 7 private cord blood banks in the country there is a huge shortage of resources to meet the rising demands for this facility. Even [Aishwariya Rai was in the news recently for promoting stem cell banking](#).

There are two types of banking facilities for storing the cord blood cells of your baby; public donor banks and the private banks. In public donor banks, you can donate your baby's cord blood to a central facility for use by anybody who needs it. A Private cord blood banking centre will allow you to use your baby's cord blood either by your child, by his/her siblings or a family member. Some Private Indian cord blood banks are Lifecell International, Cryobanks India, Cordlife India. Jeevan Cord Blood Bank is a public cord blood bank. **(Read more: [Cord blood banking: The future of medical treatment?](#))**

For more articles on diseases and conditions, check out our [diseases & conditions section](#) and for videos, check out our [YouTube Channel](#).

[0 Comments](#)