



News Channels

- Kerala News
- India News
- India Election 2009
- World News
- Business India
- Sports News
- Cricket News
- Travel News
- Health News
- Technology News
- News Reviews
- Literature News
- Education News
- NRI News
- Special Features

Entertainment News

- Bollywood News
- Hollywood News
- Malayalam Cinema
- Tamil Cinema News
- Kannada Cinema
- Telugu Cinema News

Regional News

- Andhra Pradesh News
- Gujarat News
- Karnataka News
- Maharashtra News
- Orissa News
- Punjab News
- Rajasthan News
- Tamil Nadu News
- West Bengal News
- More India News

Top Sections:



India Travel



Dance Forms of India



Festivals of India



Temples of India



NEWKERALA.COM News Section:

[Home](#) > [News](#) > [health-news](#)

Blood stem cells programmed to become vision cells

Washington, August 1 : Scientists at the University of Florida have announced that they have successfully programmed bone marrow [stem cells](#) to repair damaged retinas in mice, moving a step closer to developing a potential treatment for one of the most common causes of [vision loss](#) in older people.

[New Stem Cell Treatment](#)

High standard German clinic treats degenerative diseases. Request info www.xcell-center.com/StemCells

[Stem Cell Health Builder](#)

All natural health breakthrough Reactivate your Stem Cell Release www.stemcellhealthbuilder.com

[Stem Cell Biotech Stocks](#)

Free Report On Stem Cell Biotech. 3 Top Stem Cell Companies Under \$6. www.TodaysFinancialNews.com

V V Ads by Google

The researchers say that the success in repairing a damaged layer of retinal cells in mice indicates that blood [stem cells](#) taken from bone marrow can be programmed to restore a variety of cells and tissues, including ones involved in cardiovascular disorders like atherosclerosis and [coronary artery disease](#).

"To our knowledge, this is the first report using targeted gene manipulation to specifically program an adult stem cell to become a new cell type. Although we used genes, we also suggest you can do

the same thing with drugs but ultimately you would not give the drugs to the patient, you would give the drugs to their cells. Take the cells out, activate certain chemical pathways, and put the cells back into the patient," said Dr. Maria B. Grant, a professor of pharmacology and therapeutics at UF's College of Medicine.

The researchers revealed that they used a virus carrying a gene to that pushed cultured adult stem cells from mice toward a fate as retinal cells.

According to them, only after the stem cells were reintroduced into the mice did they completely transform into the desired type of vision cells, apparently taking [environmental](#) cues from the damaged retinas.

Studying the cell-transformation process enabled the scientists to bypass the gene manipulation step entirely, and instead use chemical compounds that mirrored environmental conditions in the body, thus pointing the stem cells toward their ultimate identities as vision cells.

"First we were able to show you can overexpress a protein unique to a retinal cell type and trick the stem cell into thinking it is that kind of cell," said Grant, who collaborated with Dr. Edward Scott, the director of the Program in Stem Cell Biology and Regenerative Medicine at UF's McKnight Brain Institute.

"As we proceeded, we found we could activate the stem cells by mimicking the body's natural signaling channels with chemicals. This implies a whole new field of stem cell research that uses drug manipulation rather than genetic manipulation to send these immature cells along new pathways," Grant added.

Scientists chose to build retinal pigment epithelial (RPE) cells, which form the outer barrier of the retina.

Apart from being very specialized and easy to identify, RPE cells are faulty in many retinal diseases, including age-related macular degeneration.

"This work applies to 85 percent of patients who have age-related macular degeneration. There are no [therapies](#) for this devastating disease," Grant said.

During the study, the researchers removed blood stem cells from the bone marrow of mice, modified the cells in cultures, and injected them back into the animals' circulatory systems. From there, the stem cells were able to home in on the eye injury and become retinal cells.

The researchers say that 28 days after receiving the modified stem cells, the

Photo News



[Entertainment](#) | [Sports](#) | [Current Affairs](#)

Best of NewKerala.Com

| | |
|--|-----------------------------------|
| | Self Help |
| | Greeting Cards |
| | India Education |
| | Recipes |
| | India Travel Maps |

Photo Gallery:



[Bollywood Photos](#)



[South Indian Cinema Photos](#)

