

# Los Angeles Times

## HEALTH

[LOCAL](#) [NATION](#) [WORLD](#) [BUSINESS](#) [SPORTS](#) [ENTERTAINMENT](#) [LIVING](#) [TRAVEL](#) [OPINION](#) [MORE](#)


[HEALTH](#) [HOME](#) [FOOD](#) [IMAGE](#) [TRAVEL](#) [AUTOS](#) [BOOKS](#) [HOT LIST](#) [BRAND X](#) [MAGAZINE](#) [YOUR SCENE](#)

## Booster Shots

ODDITIES, MUSINGS AND NEWS FROM  
THE WORLD OF HEALTH

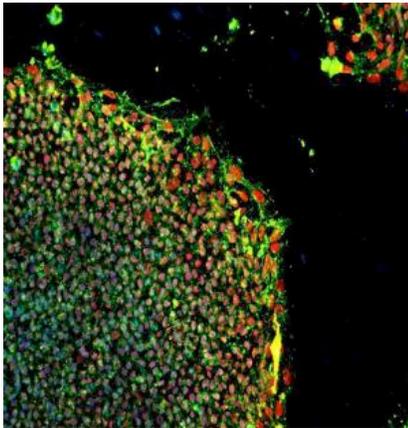
« [Previous Post](#) | [Booster Shots Home](#) | [Next Post](#) »

### Embryonic stem cells may restore brains damaged by radiation

November 10, 2009 | 1:13 pm

Scientists at UC Irvine and UC San Francisco have found a potential new use for [human embryonic stem cells](#) – helping cancer patients recover the cognitive function lost when their brains are treated with radiation.

People with tumors in their head or neck often undergo radiation therapy after the cancer is surgically removed. That radiation helps kill off any malignant cells left behind. But it can also debilitate the region of the brain called the [hippocampus](#), which is responsible for learning, memory and processing of spatial information. It is also one of only two areas in the brain known to produce new neurons.



The UC researchers wondered whether embryonic stem cells could pick up the slack. In their pluripotent state, they have the potential to grow into any type of cell in the body. When injected into the hippocampus, would they naturally replace neurons damaged or killed by radiation therapy?

To find out, they radiated the heads of 18 rats. Two days later, six of those rats got two injections of human embryonic stem cells directly into the hippocampus.

After four months, the researchers used a standard test to measure the rats' cognitive abilities. They placed the animals in an arena with two Lego blocks – borrowed from the son of senior researcher [Charles Limoli](#) – and were allowed to

explore as long as they liked. When they were done, the researchers took the rats out of the arena and moved one of the blocks. Five minutes later, the rats went back in.

All of the animals studied both of the blocks, but the rats that were treated with stem cells spent significantly more time nosing around the one that had been moved. They did so, the researchers say, because they remembered where it used to be and thus were curious about its new position. In fact, they spent almost as much time investigating the block as did a group of control rats that were never subjected to any radiation. But the radiated rats that didn't get stem cells lost roughly half of their cognitive function, [according to the study](#), published in this week's edition of Proceedings of the National Academy of Sciences.

The scientists tested the rats again 24 hours later and got similar – though less pronounced – results.

When the tests were over, the researchers euthanized the rats and studied their brains. Sure enough,

### Stay connected:


[RSS](#)

[twitter](#)

[facebook](#)

advertisement

### About the Bloggers

**Tami Dennis**  
**Melissa Healy**  
**Karen Kaplan**  
**Thomas H. Maugh II**  
**Rosie Mestel**  
**Shari Roan**  
**Jeannine Stein**

### Recent Posts

Now for a look at non-Hodgkin's lymphoma, a diagnosis that could increase | [November 16, 2009, 8:00 pm](#) »

Do these genes make my heart seem big? Study finds a gene for empathy | [November 16, 2009, 6:09 pm](#) »

New drug stimulates sexual desire in women in clinical trial | [November 16, 2009, 2:59 pm](#) »

Come Medicare Part D time (which is now), don't feel daunted -- help is at hand | [November 16, 2009, 1:41 pm](#) »

Screen a heart, save a life | [November 16, 2009, 1:13 pm](#) »

the stem cells had grafted into the hippocampus, where they grew into neurons and another kind of brain cell called astrocytes. In the four months that they were in the rat brains, the stem cells didn't appear to grow into tumors, though that might have happened if the rats lived longer.

The results suggest that embryonic stem cells could spare cancer patients much of the short-term memory loss that results from cranial radiation and perhaps boost long-term memory as well, the researchers wrote. But several hurdles would have to be cleared before it could be tried in people.

Instead of using embryonic stem cells – which many people object to because they are derived from embryos – patients could be treated with induced pluripotent stem cells. Better known as iPS cells, these reprogrammed cells have been found to behave almost exactly like embryonic stem cells in a variety of laboratory tests. They could be custom-made for cancer patients, reducing the risk that the stem cell transplants would be rejected. But more research is needed to ensure that they would not form new tumors.

“Any treatments showing promise at reversing this are worthy of pursuit,” Limoli, an associate professor of radiation oncology at UCI, said in a statement.

The experiments were funded by the [National Institutes of Health](#) and the [California Institute for Regenerative Medicine](#).

-- Karen Kaplan

*Photo: These human embryonic stem cells restored cognitive function to rats whose brains were damaged by radiation. Credit: Munjal Acharya / UCI*

More in: [cancer](#), [research](#), [stem cells](#)

[Permalink](#)  
[Comments \(0\)](#)  
[ShareThis](#)  
[Share](#) [4](#)

### New Stem Cell Treatment

Fight your degenerative disease now Unique European clinic in Germany!  
[www.xcell-center.com](http://www.xcell-center.com)

### Umbilical Cord Banking

Learn the Benefits of Banking Your Baby's Cord Blood. Free Info Here  
[www.ViaCord.com/Cord-Blood-Experts](http://www.ViaCord.com/Cord-Blood-Experts)

ADS BY GOOGLE

## Verify your Comment

## Previewing your Comment

Posted by: |

This is only a preview. Your comment has not yet been posted.

Your comment could not be posted. Error type:  
Your comment has been saved. Comments are moderated and will not appear until approved by the author. Post another comment

The letters and numbers you entered did not match the image. Please try again.

As a final step before posting your comment, enter the letters and numbers you see in the image below. This prevents automated programs from posting comments.

Having trouble reading this image? View an alternate.

## Recent Comments

- RE:** New drug stimulates sexual desire in women in clinical trial | comment by SHarris
- RE:** New drug stimulates sexual desire in women in clinical trial | comment by Karl
- RE:** Softeners in plastics may affect masculinity in young boys, study says | comment by Seriously?
- RE:** Tissue engineers make penises for rabbits; humans next | comment by Kristen Thompson
- RE:** New drug stimulates sexual desire in women in clinical trial | comment by Carolyn Thomas
- RE:** Lupus drug Benlysta passes second crucial test | comment by DSL

## Categories

- addiction adhd adoption aging aids alcohol allergies alzheimer's disease antibiotics arthritis asthma autism beauty **behavior** bicycling blood disorders body image books breastfeeding
- cancer** children clinical trials cognition colonoscopy complementary and alternative medicine contraception cosmetic surgery cpr dance dental care depression diabetes dieting disaster preparedness disease drowning drug use drugs eating disorders editor's picks elderly emergency care end-of-life epilepsy fertility film **fitness flu food and drink** food safety fruit genetics hair loss headaches health insurance **healthcare** hearing **heart disease** history hormones hospitals hygiene hypertension illness infections infertility injuries kidney disease l.a. stories latino health learning live chat lupus malaria medicare **medicine** men's health menopause **mental health** mental illness metabolic syndrome music
- nutrition obesity** odor organ donation osteoporosis pain paralysis parenting parkinson's plastic surgery policy politics & health pollution pregnancy prematurity prescriptions prostate cancer prosthetics **psychology** ptsd relationships religion **research rodent** safety schizophrenia science septicemia sex sick leave sickle cell disease sids skin cancer sleep smoking sports stds stem cells steroids stress stroke sunscreen supplements surgery swine flu television travel **vaccination** violence vision vitamins web/tech weblogs weight loss workplace yoga

## Archives

November 2009

## All L.A. Times Blogs

- Afterword
- Angels Unplugged
- Big Picture
- Brand X
- Company Town
- All The Rage
- Babylon & Beyond
- Booster Shots
- Comments Blog

### Post a comment

If you are under 13 years of age you may read this message board, but you may not participate. Here are the full legal terms you agree to by using this comment form.

Comments are moderated, and will not appear until they've been approved.

If you have a TypeKey or TypePad account, please Sign In

Name:

E-mail Address:

URL:

Remember personal info?

Comments:

### Comments

- Culture Monster
- Daily Dish
- Daily Travel & Deal Blog
- Dodger Thoughts
- Gold Derby
- Hero Complex
- Homicide Report
- Jacket Copy
- L.A. Now
- La Plaza
- Ministry of Gossip
- Opinion L.A.
- Pop & Hiss
- Show Tracker
- Ticket to Vancouver
- Varsity Times Insider
- D.C. Now
- Daily Mirror
- Dish Rag
- Fabulous Forum
- Greenspace
- Holiday Gift Guide
- Idol Tracker
- L.A. at Home
- L.A. Unleashed
- Lakers
- Money & Co.
- Outposts
- Readers' Representative
- Technology
- Top of the Ticket

**DON'T Waste Money at the Dentist**



Single mom discovers 1 simple trick to turn yellow teeth white from home. [Learn More](#)

**Do You Have Yellow Teeth?**



Learn the trick, discovered by a mom, to turn yellow teeth white from home. [Learn More](#)

**MOMs Secret = White Teeth**



Learn the trick, discovered by a mom, to turn yellow teeth white from home. [Learn More](#)

wsgalart.com

---

<p><b>News</b></p> <ul style="list-style-type: none"> <li>Local</li> <li>Nation</li> <li>World</li> <li>Business</li> <li>Technology</li> <li>Sports</li> <li>Opinion</li> <li>Columnists</li> </ul>	<p><b>Entertainment</b></p> <ul style="list-style-type: none"> <li>Television</li> <li>Movies</li> <li>Music</li> <li>Arts &amp; Culture</li> <li>Celebrity</li> <li>The Envelope</li> <li>Calendar</li> <li>Company Town</li> <li>TV Listings</li> <li>Movie listings</li> </ul>	<p><b>Living</b></p> <ul style="list-style-type: none"> <li>Travel</li> <li>Health</li> <li>Food</li> <li>Home</li> <li>Image</li> <li>Magazine</li> <li>Books</li> <li>Autos</li> <li>Hot List</li> <li>Horoscopes</li> </ul>	<p><b>Multimedia</b></p> <ul style="list-style-type: none"> <li>Video</li> <li>Photos</li> <li>Data Desk</li> <li>Your Scene</li> <li>Times on Twitter</li> <li>RSS</li> <li>Newsletters</li> <li>Kindle</li> <li>E-edition</li> </ul>	<p><b>Top Blogs</b></p> <ul style="list-style-type: none"> <li>L. A. Now</li> <li>Dish Rag</li> <li>Hero Complex</li> <li>Top of the Ticket</li> <li>Lakers Blog</li> <li>Pop and Hiss</li> <li>Show Tracker</li> <li>Travel &amp; Deals</li> <li>Gold Derby</li> <li>Booster Shots</li> </ul>	<p><b>About</b></p> <ul style="list-style-type: none"> <li>Corrections</li> <li>Readers' Rep</li> <li>Print Edition</li> <li>Contact Us</li> <li>About Us</li> <li>Place an Ad</li> <li>Subscribe</li> <li>Site Map</li> </ul>
--	---	--	--	--	--

---

[Terms of Service](#) | [Privacy Policy](#)

[Baltimore Sun](#) | [Chicago Tribune](#) | [Daily Press](#) | [Hartford Courant](#) | [LA Times](#) | [Orlando Sentinel](#) | [Sun Sentinel](#) | [The Morning Call](#) | [The Virginia Gazette](#)

Los Angeles Times, 202 West 1st Street, Los Angeles, California, 90012

*A Tribune Web site*