

## Science News

from research organizations

# Older adults grow just as many new brain cells as young people

*Date:* April 5, 2018

*Source:* Cell Press

*Summary:* Researchers show for the first time that healthy older men and women can generate just as many new brain cells as younger people.

*Share:* [f](#) [t](#) [G+](#) [p](#) [in](#) [✉](#)

### FULL STORY



Rendering of a brain.

*Credit:* © gorbovoi81 / Fotolia

Researchers show for the first time that healthy older men and women can generate just as many new brain cells as younger people.

There has been controversy over whether adult humans grow new neurons, and some research has previously suggested that the adult brain was hard-wired and that adults did not grow new neurons. This study, to appear in the journal *Cell Stem Cell* on April 5, counters that notion. Lead author Maura Boldrini, associate professor of neurobiology at Columbia University, says the findings may suggest that many senior citizens remain more cognitively and emotionally intact than commonly believed.

"We found that older people have similar ability to make thousands of hippocampal new neurons from progenitor cells as younger people do," Boldrini says. "We also found equivalent volumes of the hippocampus (a brain structure used for emotion and cognition) across ages. Nevertheless, older individuals had less vascularization and maybe less ability of new neurons to make connections."

The researchers autopsied hippocampi from 28 previously healthy individuals aged 14-79 who had died suddenly. This is the first time researchers looked at newly formed neurons and the state of blood vessels within the entire human hippocampus soon after death. (The researchers had determined that study subjects were not cognitively impaired and had not suffered from depression or taken antidepressants, which Boldrini and colleagues had previously found could impact the production of new brain cells.)

In rodents and primates, the ability to generate new hippocampal cells declines with age. Waning production of neurons and an overall shrinking of the dentate gyrus, part of the hippocampus thought to help form new episodic memories, was believed to occur in aging humans as well.

The researchers from Columbia University and New York State Psychiatric Institute found that even the oldest brains they studied produced new brain cells. "We found similar numbers of intermediate neural progenitors and thousands of immature neurons," they wrote. Nevertheless, older individuals form fewer new blood vessels within brain structures and possess a smaller pool of progenitor cells -- descendants of stem cells that are more constrained in their capacity to differentiate and self-renew.

Boldrini surmised that reduced cognitive-emotional resilience in old age may be caused by this smaller pool of neural stem cells, the decline in vascularization, and reduced cell-to-cell connectivity within the hippocampus. "It is possible that ongoing hippocampal neurogenesis sustains human-specific cognitive function throughout life and that declines may be linked to compromised cognitive-emotional resilience," she says.

Boldrini says that future research on the aging brain will continue to explore how neural cell proliferation, maturation, and survival are regulated by hormones, transcription factors, and other inter-cellular pathways.

#### Story Source:

Materials provided by **Cell Press**. *Note: Content may be edited for style and length.*

---

#### Journal Reference:

1. Maura Boldrini, Camille A. Fulmore, Alexandria N. Tartt, Laika R. Simeon, Ina Pavlova, Verica Poposka, Gorazd B. Rosoklija, Aleksandar Stankov, Victoria Arango, Andrew J. Dwork, René Hen, J. John Mann. **Human Hippocampal Neurogenesis Persists throughout Aging**. *Cell Stem Cell*, 2018; 22 (4): 589 DOI: 10.1016/j.stem.2018.03.015

---

#### Cite This Page:

MLA	APA	Chicago
-----	-----	---------

Cell Press. "Older adults grow just as many new brain cells as young people." ScienceDaily. ScienceDaily, 5 April 2018. <[www.sciencedaily.com/releases/2018/04/180405223413.htm](http://www.sciencedaily.com/releases/2018/04/180405223413.htm)>.

---

#### RELATED STORIES

Genders Differ Dramatically in Evolved Mate Preferences

Aug. 6, 2015 — Men's and women's ideas of the perfect mate differ significantly due to evolutionary pressures, according to a cross-cultural study on multiple mate preferences. According to the study, men favor ...

**read more »**



### Many Older Brains Have Plasticity, but in a Different Place

Nov. 19, 2014 — Brain scientists have long believed that older people have less of the neural flexibility, or plasticity, required to learn new things. A new study shows that older people learned a visual task just ... [read more »](#)



### Sport in Old Age Can Stimulate Brain Fitness, but Effect Decreases With Advancing Age

Oct. 20, 2014 — Physical exercise in old age can improve brain perfusion as well as certain memory skills, say neuroscientists who studied men and women aged between 60 and 77. In younger individuals regular ... [read more »](#)



### Younger People Have 'High Definition' Memories

Jan. 14, 2014 — It's not that younger people are able to remember more than older people. Their memories seem better because they are able to retrieve them in higher definition. So says a researcher, in a study that ... [read more »](#)

#### FROM AROUND THE WEB

---

*Below are relevant articles that may interest you. ScienceDaily shares links and proceeds with scholarly publications in the TrendMD network.*

#### **GABAA Receptor Subtypes: Therapeutic Potential in Down Syndrome, Affective Disorders, Schizophrenia, and Autism**

Fred Volkmar et. al., Annual Reviews

#### **The Emerging Picture of Autism Spectrum Disorder: Genetics and Pathology**

Jason A. Chen et. al. ĩagarikano, T. Grant Belgard, Vivek Swarup, and Daniel H. Geschwind, Annual Reviews

#### **AUTISM: A Window Onto the Development of the Social and the Analytic Brain**

Simon Baron-Cohen and Matthew K. Belmonte, Annual Reviews

#### **The Yin and Yang of Autism Genetics: How Rare De Novo and Common Variations Affect Liability**

Pauline Chaste et. al., Annual Reviews

#### **Advances in Autism**

Daniel H. Geschwind, Annual Reviews

#### **Sense and the Senses: Anthropology and the Study of Autism**

Olga Solomon, Annual Reviews

#### **Autism in Infancy and Early Childhood**

Fred Volkmar et. al., Annual Reviews

#### **Research Findings Suggest TREM2 Levels Could Serve as Biomarker During Alzheimer's Progression**

360Dx

## Free Subscriptions

---

Get the latest science news with ScienceDaily's free email newsletters, updated daily and weekly. Or view hourly updated newsfeeds in your RSS reader:

 [Email Newsletters](#)

 [RSS Feeds](#)

## Follow Us

---

Keep up to date with the latest news from ScienceDaily via social networks:

 [Facebook](#)

 [Twitter](#)

 [Google+](#)

 [LinkedIn](#)

## Have Feedback?

---

Tell us what you think of ScienceDaily -- we welcome both positive and negative comments. Have any problems using the site? Questions?

 [Leave Feedback](#)

 [Contact Us](#)

[About This Site](#) | [Editorial Staff](#) | [Awards & Reviews](#) | [Contribute](#) | [Advertise](#) | [Privacy Policy](#) | [Terms of Use](#)

Copyright 2018 ScienceDaily or by other parties, where indicated. All rights controlled by their respective owners.

Content on this website is for information only. It is not intended to provide medical or other professional advice.

Views expressed here do not necessarily reflect those of ScienceDaily, its staff, its contributors, or its partners.

Financial support for ScienceDaily comes from advertisements and referral programs, where indicated.