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Study: Age slows rebound after nerve injury

Atlanta Business Chronicle - by Urvaksh Karkaria

Age dramatically delays the time it takes to recover the sense of taste following a significant nerve injury, according to **Medical College of Georgia** researchers.

When old rats received nerve injuries similar to ones that can occur in ear or dental surgery, their taste buds took essentially twice as long to recover function as their younger counterparts, Dr. Lynnette McCluskey, a neuroscientist in the MCG Schools of Graduate Studies and Medicine, noted in a statement.

McCluskey uses taste buds to study regeneration of sensory nerves that enable touch, vision and hearing as well as taste. Similar studies have shown that age only slightly delays recovery time for neurons that enable movement.

In younger rats, injury to the chorda tympani nerve, which innervates the front of the tongue, typically prompts an infusion of immune cells called neutrophils to the injury site and surrounding tissue. Short term, the neutrophils, which are like a frontline demolition crew pulverizing tissue for removal, can actually hinder the function of nearby nerves. But soon a similar number of white blood cells called macrophages move in to call off the neutrophils and start cleaning things up.

Within 45 days, the withered taste bud is regenerated, the nerve has recovered and taste is intact.

But older rats experience a much bigger invasion of neutrophils, although McCluskey notes it doesn't seem to impact nearby nerve function as with younger rats. They also have proportionately fewer subsequent macrophages moving in, which she suspects may be part of the reason for the significantly delayed recovery.

In a paper published in Neuroscience, McCluskey and co-authors suggest a balanced response between neutrophils and macrophages enhance recovery. In adult rats, they documented the usual, rapid neutrophil response at the immediate site of a taste system injury and in nearby tissue. When they blocked the neutrophil response, nearby nerve function was unaffected and when they increased neutrophils, it decreased function — at least initially — in injured and nearby uninjured nerves.

McCluskey hopes to determine if neutrophils have some lasting impact, particularly when there are a lot of them. She also wants to know why they are not nearly as mobile in the older rats.

New funding

Four community-based organizations have received \$60,000 in funding from **Emory University** and the **Morehouse School of Medicine** to facilitate health initiatives and research in community settings.

The Community Engagement and Research Program is a component of the Atlanta Clinical and Translational Science Institute, a collaborative effort of Emory, Morehouse and Georgia Tech, a statement noted.

The community-based organizations receiving the grants include: Atlanta-based <u>AIDS Alliance for Faith</u> and Health; <u>Atlanta Lesbian Health Initiative</u>; Doraville, Ga.-based BPSOS; and Albany, Ga.-based <u>Phoebe Putney Memorial Hospital</u>.

The Collaborative Research Capacity Grants Program seeks to bridge a gap between the academy and the community, Michelle Kegler, director of the **Emory Prevention Research Center** and associate professor of behavioral sciences and health education at Emory's **Rollins School of Public Health**, said in the statement.

The grants will help pair community organizations with academic researchers around questions and topics of interest to both parties, Kegler said. The grants are made possible as part of a \$600,000 grant award from the **National Center for Research Resources** at the **National Institutes of Health**, issued under the American Recovery and Reinvestment Act of 2009.

New surgery center

The Piedmont Surgery Center, a subsidiary of <u>Piedmont Healthcare</u>, has opened at the <u>Piedmont Hospital Outpatient</u> Center, according to a statement.

The new 15,600-square-foot facility, at Piedmont West Medical Office Park on Howell Mill Road, provides services in general, orthopedic, gynecological, urological and plastic surgeries.

The surgery center, which employs 10, has four operating rooms, two procedure rooms and 17 perioperative beds (for preoperative care and post-operative recovery).

The center expects to do 2,200 cases in its first year of full operation.

Free seminar

A group of medical and advocacy experts will gather in Atlanta on Saturday, May 8, to discuss sports-related traumatic brain injury (TBI).

TBI is defined as a blow to the head or a penetrating head injury that disrupts normal brain functions, leading to problems with reasoning and thinking, or, in severe cases, coma or death, according to a statement.

The event will be held from 10 a.m. to noon at Emory University Hospital Midtown's Glenn Auditorium at 550 Peachtree St. N.E.

Panelists at the free seminar will discuss the best ways to prevent sports-related TBI, first steps to take if an injury is suspected, current treatments and research, and support and resources available for caregivers and individuals living with TBI. To register, visit www.neuroclinical.emory.edu.

The seminar is sponsored by the **Emory Neurosciences Initiative**, as part of the Emory Neurosciences Education Series. The goal of the series is to translate new research and knowledge about the brain into clinical innovations.

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