

Study: Estrogen helps females respond better to stress

By Melissa Pandika, Los Angeles Times

In the battle of the sexes, a new study places females in the lead – concluding that they respond better to repeated stress thanks to estrogen.

“It’s kind of a popular view that males and females respond differently to stress,” said University at Buffalo neuroscientist and study co-author Zhen Yan. “Our study offers the molecular mechanism.”

Yan’s group found that young female rats stressed out by a week of periodic physical restraint showed no impairment in their ability to remember and recognize objects they had been shown a few hours earlier. Young males exposed to the same stress conditions fared worse on the short-term memory test.

But when the researchers manipulated estrogen levels in the brain, female rats respond to stress like males and vice-versa.

The study, published Tuesday in the journal *Molecular Psychiatry*, focused on a region of the brain known as the prefrontal cortex, which is “like a CEO,” Yan explained, controlling high-level executive functions such as memory, planning and decision-making.

The team looked at the activity of receptors in the prefrontal cortex that bind with an amino acid called glutamate, which is involved in the completion of memory and planning tasks. Glutamate receptors comprise the majority of receptors in that part of the brain, Yan said.

In 2012, the team reported that male rats exposed to repeated

stress lost glutamate receptors in their prefrontal cortex region, resulting in impaired performance on a number of memory tasks.

When the researchers later examined female rats as a control, they saw that females exposed to the same stress showed enhanced cognition and memory. Other animal studies have produced similar results.

Yan's group suspected that the female sex hormone estrogen might have a protective effect against stress. It "was kind of an intuitive guess," she said.

For the current study, the scientists physically restrained young male and female rats, placing them in a small cylindrical compartment for two hours a day over a roughly one-week period. The experiment was intended to mimic the challenging – but not dangerous or life-threatening – stress that humans face day-to-day, Yan said.

As expected, the prefrontal cortex of young males exposed to restraint stress showed a loss of glutamate receptors. In contrast, the prefrontal cortex of young females exposed to the same stress showed no change in glutamate receptor numbers.

To test the animals' short-term memory, the researchers showed the rats two identical objects, followed by a second pair an hour later. Three hours later, they presented the rats with one object from each pair. Spending more time exploring the object from the first pair indicated that the animal remembered it from four hours prior. A preference for the more novel object from the second pair signified impaired short-term memory.

Female rats performed better on the memory test than their male counterparts. But when male rats were injected with the female hormone estradiol, they showed increased glutamate transmission, and the restraint stress had no effect on their

ability to recognize objects. And when the researchers suppressed one type of estrogen receptor in the female rats' brains, their performance suffered.

It's still not clear exactly how estrogen protects against stress – for example, whether estrogen is affecting stress hormone release or directly affecting the glutamate receptor. Yan said her group plans to pursue this question in future research.

The study offers a scientific explanation for what has been mainly anecdotal evidence of women being better able to cope with stress than their male counterparts, Yan said.

"It's not that there's no reason," she said, adding that the study might also shed light on sex differences in mental disorders.

Yan cautioned that her group's results are based on rat studies. Still, the findings may hold relevance for humans since many cellular functions are conserved between the two species, she said.

Study: Americans living longer, but are less healthy

By Ron Winslow, Wall Street Journal

Americans are living longer than they did two decades ago, but they are losing ground on key measures of health to people in other developed nations, a study shows.

The findings, from the most comprehensive analysis of the health of the U.S. population in more than 15 years, show

progress in reducing death rates, adjusted for age, across a variety of diseases. But death rates from illnesses associated with obesity, such as diabetes and kidney disease, as well as neurological conditions like Alzheimer's disease, are on the rise.

Meanwhile, the number of years of living with chronic disability, an indicator of quality of life, rose for the average American in the past 20 years, partly reflecting increased longevity.

Despite gains in longevity, Americans are living the extra years "not necessarily in good health," said the researchers, led by Christopher Murray, director of the Institute for Health Metrics and Evaluation at the University of Washington in Seattle.

The study was published Wednesday by JAMA, the Journal of the American Medical Association. Murray also presented the results, along with separate reports on physical activity and obesity in counties across the U.S., at a White House event hosted by first lady Michelle Obama as part of her campaign against childhood obesity.

Murray said the U.S. has also made important headway against such problems as strokes; certain cancers, including colon and breast cancers; and HIV, the virus that causes AIDS. "It's important to recognize that there are some areas where we do well," he said.

With annual health-care outlays in the U.S. totaling nearly 18 percent of gross domestic product, according to federal data, outside experts cast the study's findings in economic terms.

"Despite a level of health expenditures that would have seemed unthinkable a generation ago, the health of the U.S. population has improved only gradually and has fallen behind the pace of progress in many other wealthy nations," said Harvey V. Fineberg, president of the Institute of Medicine, in

an editorial accompanying the report. The IOM advises the government on health matters.

In every measure examined, including life expectancy and quality of life, Fineberg said, the U.S. ranking fell among the 34 members of the Organization for Economic Co-operation and Development, a think tank for developed countries.

Michael Roizen, chief wellness officer at the Cleveland Clinic in Ohio, said the findings put the U.S. at a disadvantage in the global job market. But he said much of the problem could be addressed by better diet, smaller food portions, increased physical activity, quitting smoking and better management of stress. "They are things we totally have control over," he said. "It's a matter of us getting serious about this."

The analysis was based on data for 291 diseases and 67 risk factors for disease, as well as a variety of government-sponsored health surveys. It included data from 187 countries, making it one of the most ambitious efforts undertaken to assess the disease burden not only in the U.S. but around the world.

In the U.S., life expectancy rose three years to 78.2 years in 2010 from 75.2 in 1990, researchers found. But the nation's ranking among OECD countries fell to 27th from 20th 20 years earlier.

A doctor examines a patient in Miami earlier this year. Life expectancy in the U.S. rose three years to 78.2 years in 2010 from 75.2 in 1990.

Moreover, people were in good health, or without short- or long-term disabilities, for just 68.1 of those years on average, the report found. The gap of 10.1 years between total life span and a healthy life span rose from 9.4 years in 1990, and the U.S. ranking for a healthy life span fell to 26th from 14th two decades ago.

Despite progress on cardiovascular disease and some cancers, the lead causes of premature death in the U.S. remained heart disease, lung cancer and strokes. Leading contributors to disability were lower-back pain and other disorders of muscles, nerves and joints, as well as depression and anxiety.

While many chronic disabling conditions play only a limited role in premature death, they are major drivers of health-care costs, Dr. Murray said. "We are not very good at preventing them or curing them and only mildly good at treating them."

Researchers also found that poor dietary habits have overtaken smoking as the most important risk factor associated with years of life lost to disability and to premature death.

Findings from the county studies presented at the White House show a substantial increase in physical activity, including in Kentucky, a state that traditionally has trailed in healthy living habits. But over 20 years, he said, not one county in the U.S. reduced the burden of obesity among its residents.

For Sister Donna Hawk, who left a job as a hospital chaplain at the beginning of this year, the link between longer life and potential disability came into focus when she recently turned 70. Her father died just before turning 70, having had two open heart surgeries, and other family members had similar problems. She herself has seven stents in her heart, and had been overweight.

"So I'm thinking in their older age, they weren't as healthy as they wanted to be," she said. "I feel like I have a few good years ahead of me and I wanted to take care of myself in such a way that I could enjoy myself."

She has lost 25 pounds in the past year, partly through a program at the Cleveland Clinic. She has improved her cholesterol, has started a plant-based diet and has begun exercising regularly.

“I’m not ready to go yet,” she said.

Kyburz Fire fully contained

The Kyburz Fire was completely contained Thursday, a day sooner than originally expected.

U.S. Forest Service personnel repeatedly changed the number of acres that were burned. The latest total is 572 acres.

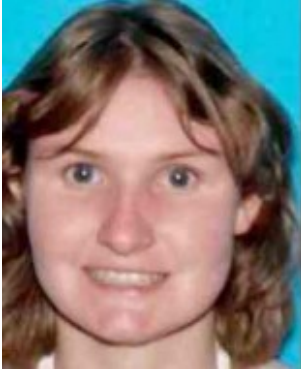
The blaze began Monday afternoon when a vehicle on Highway 50 lost a wheel and that sparked the fire.

The fire took out a shed and an outhouse in the Eldorado National Forest.

– Lake Tahoe News staff report

Missing woman may be in South Lake Tahoe

El Dorado County sheriff’s deputies are looking for a young woman who was last seen July 6 at 7am.



Elise Hays

Elise Hays, 20, has a developmental disorder and has only physically and mentally developed to the age of 12.

She left her residence in Pollock Pines last Saturday morning. She is possibly in the South Lake Tahoe area.

Deputies said Hays has been known to take up residency with homeless subjects in the past.

She is 4-feet-6-inches, 80 pounds, with blonde hair and blue eyes.

If anyone sees her, call 911 or contact Detective Troy Morton at (530) 642.4712 with information regarding her whereabouts.

– Lake Tahoe News staff report

All restrictions lifted in Bison Fire

Updated 7:25pm:

The Bison Fire is at 91 percent containment.

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Firefighters working the Bison Fire in Douglas County have started mopping-up and are conducting fire-line rehab.

All evacuations and road closures have been lifted. One old mining structure was consumed by the fire.

Crews will continue to extinguish the hot spots on the north and southeast edges of the fire that has been burning in the Pine Nut mountains since July 4 when lightning struck.

As of this morning, the 24,136-acre blaze is 80 percent contained. Full containment is expected on Sunday.

Personnel have been pulled off this blaze are being deployed to other fires in the country. One firefighter twisted a knee and another had issues with breathing.

The cost, to date, of fighting the Bison Fire is \$5,657,204.

– Lake Tahoe News staff report

Structures out of harms way from Bison Fire

Firefighters have the Bison Fire in Douglas County more than 65 percent contained, with full containment expected Sunday.

Crews concentrated their efforts Wednesday along a ridge above the evacuated homes and other hot spots.

The voluntary evacuation order for homes in Douglas and Lyon counties has been lifted.

“No residences were damaged or lost in the Bison fire but to lessen the possibility of your home being damaged in another

fire, please clear 30 feet around your residences, reduce the fuel, reduce the risk,” fire officials said in a statement.

The cost, to date, of fighting this fire is \$5,330,979.

The following road closures to non-residents are still in place due to the heavy fire vehicle traffic:

- * Pine Nut Road at the intersection of Out-R-Way

- *East Valley Road at Grandview

- *Sunrise Pass Road at Coyote Rock

- *Brunswick Canyon Road

- *Mexican Dam Road

- *Sunrise Pass Road at Artesia Road.

The fire started July 4 from lightning.

– Lake Tahoe News staff report

Injured hiker plucked from Angora Peak

Updated 12:20pm:

Hillary Brennan-Marquez, 23, from Palo Alto sustained

knee and wrist injuries, and lacerations. She was taken to Barton Memorial Hospital.

Assisting with the rescue were EDSO search and rescue, CHP,

Lake Valley Fire, U.S. Forest Service, Fallen Leaf Fire and CalFire.

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A woman hiking on Angora Peak had to be airlifted out on Wednesday.

El Dorado County search and rescue crews hiked in to where the woman was. She was suffering from a dislocated knee after falling from a rock face, Lt. Pete Van Arnum told *Lake Tahoe News*.



A CHP unit takes an injured hiker to the hospital.
Photo/Damian Frisby

The call came in just after 1pm July 10.

A California Highway Patrol helicopter was able to airlift her out of the backcountry and take her to the hospital. Her condition is unknown.

The name of the woman has not been released.

– *Lake Tahoe News staff report*

N. Nevada casinos do well in May

Northern Nevada's May gaming win far outpaced the rest of the state, which helped bring in a positive number for the entire Silver State.

Stateline and Reno casinos each saw a 9.7 percent increase from May 2012 to 2013 with \$13.3 million in revenue, the Gaming Control Board said in numbers it released July 11. Carson Valley was up 7.4 percent.

Statewide the revenues grew 1.37 percent, with revenues of \$897.2 million in May.

– Lake Tahoe News staff report

Kyburz Fire almost at full containment

The Kyburz Fire burning on Highway 50 between Tahoe and Placerville is 95 percent contained, with full containment expected Friday.

Motorists are advised to watch for debris on the roadway. Granite Springs Road and Webber Mill Road remain closed for public safety.

All campgrounds are open.

The fire, which is in the same location where the Fred's and Cleveland fires burned, has consumed 615 acres.

Firefighters on July 10 continued securing line around the fire perimeter.

The blazed started July 8 when a vehicle tire blew and sparked the fire.

Two outbuildings were lost.

– Lake Tahoe News staff report

Ex-EDSO sergeant arrested on kiddie porn charges

A former El Dorado County sheriff's sergeant has been accused of possessing child pornography.

William Wilson, 51, turned himself in to the county jail in Placerville on July 9. He was booked and released.



William Wilson

The investigation started in January.

"During the course of the investigation the employee retired, but the investigation continued. Eventually information was developed indicating the employee had committed criminal acts," a press release stated.

Wilson worked for the department for 25 years.

He is scheduled to be arraigned July 16.

– *Lake Tahoe News staff report*