Couch-potato-itis may be genetic, rat studies at the University of Missouri-Columbia seem to indicate. The findings may eventually translate to sedentary humans.

Frank Booth, professor of biomedical sciences, said the experiments have shown that it's possible to be predisposed to being lazy, an important step for finding the causes of obesity in humans, including children.

Booth's research team has spent four years breeding rats that exhibited traits of either extreme activity or laziness. They gave dozens of rats running wheels and measured how much each rat willingly ran on its wheel over six days. They then bred the top 26 runners with one another and bred the bottom 26 runners with one another.

After 10 generations, tests showed different genetic differences between the active rats and the inactive rats, Booth said. Active rats spent exponentially more time on the running wheels than did the sedentary rats.

Once the researchers created their "super runner" and "couch potato" rats, they studied the levels of mitochondria — parts of cells that burn energy — in muscle cells, compared body composition and conducted genetic evaluations.

Also, they found 36 genes that seem to play a role in predisposition to physical activity motivation, or the lack of it.

The findings opened the door to more questions, Booth said, and the research that needs to follow is considerable.

Some examples:

- The active group had higher levels of anxiety; the inactive group tended to be more laid back. That brings questions of mental health into the mix, he said. For example, was the motivation to run due to attempting to relieve minor depression that the sedentary rats didn't have?

- The examinations showed the genetic influences were more likely from a combination of effects from groups of genes and not simply one active-lazy gene.
• Do the genetic differences increase the activity or increase the desire to be active?

• Can what actually triggers the rat conduct be altered?

Booth has studied the effects of inactivity for decades. He spent 24 years in Houston, where he worked under a grant from NASA for animal studies on the effects of inactivity that could translate to astronauts.

Since arriving at Mizzou more than 13 years ago, he has pondered what could be done about obesity among people and whether his work could help turn around America’s worst epidemic. “We know of 35 conditions that can occur from inactivity,” he said.

Studies show the majority of American adults get less than 30 minutes of exercise a day, which is the minimum recommended by federal guidelines, and that percentage increases as people get older, he said. Maybe getting older isn’t the issue, he said.

Over the years, he has concluded that inactivity is acquired. “Just look at a 1-year-old child, so active his parents wish he’d be inactive for a while,” Booth said.

But over the life span, activity levels decrease, he said, and the reasons why aren’t so simple as people just become sedentary as they get older, even though that’s what happens. Studies show “people who are motivated are the ones who increase their activity,” he said.

Booth wrote in one of his documents about the study, “It would be very useful to know if a person is genetically predisposed to having a lack of motivation to exercise, because that could potentially make them more likely to grow obese,” Booth said.

The study is in the April 3 edition of the American Journal of Physiology: Regulatory, Integrative and Comparative Physiology.
Mizzou stands up for Boston

By Karyn Spory

Joey Greenstein, a junior business administration major at the University of Missouri, was sitting in a marketing class yesterday when he pulled up his Twitter feed and started reading about the people affected by the Boston bombings. Greenstein decided then and there that he wanted to help, and with the help of some friends, Mizzou for Boston was born.

Mizzou for Boston is a drive to collect stuffed animals, Mizzou apparel and money to send to Boston and the families affected by the bombings that happened Monday during the Boston Marathon.

Greenstein said he worried about how children in Boston would feel after seeing images from the Boston Marathon.

"The idea behind it is I wanted the kids to feel like there were still good people out there," Greenstein said.

By 12:30 p.m. yesterday, a Mizzou for Boston event was started on Facebook and drop-off locations were being set up.

"I started going around to people I knew and centers on campus that I thought "would want to be involved," Greenstein said. Drop-off locations include the information desk at the MU Student Center, Women's Center, the Multicultural Center and the New Student Programs Office.

Nick Droege, a junior biological science major at MU, said students have been responding well. Droege said more than 150 shirts had been donated by the bookstore in addition to clothing donations made by students. As of this morning, more than $500 had been raised. Droege said all monetary donations will be sent directly to the American Red Cross to aid in the relief efforts in Boston.

"The stuffed animals will specifically go to the Children's Hospital" in Boston, "and the clothing will be divided up and sent to the American Red Cross and the Children's Hospital," he said.
Greenstein said it has been great to see this project grow so quickly and to have the support of not only his friends but others within the community.

"We always preach about the Mizzou family, but this is where it really starts to show through," Droege said.
COLUMBIA MISSOURIAN

MU student plans bake sale to help Boston Marathon relief effort

By Abbie Wenthe
April 17, 2013 | 2:58 p.m. CDT

COLUMBIA — On Monday, MU student Ally Troiano received a phone call from a friend telling her to watch the Boston Marathon coverage.

Troiano, who grew up in Millbury, Mass., 40 minutes outside of Boston, was horrified. Her friend was running in the marathon, and many people from her hometown were spectators.

She was relieved when she learned her friend escaped with only a few cuts and bruises and none of the spectators she knew were hurt. Still, she wanted to help those who were seriously injured.

“I knew as a citizen of Massachusetts I had to do something,” she said.

A Google search of “Boston relief” led her to USA Today’s list of ways to help the relief effort. Troiano saw that Massachusetts General Hospital is accepting donations for emergency medicine and trauma. She decided to hold a fundraiser for the hospital.

With the help of her Kappa Delta sorority sisters, Troiano is holding a bake sale on Friday from 12 to 4 p.m. in Speakers Circle.

Other sororities will help with baking and selling the goods. Cake pops, cupcakes, Rice Krispie treats, cookies and brownies will be sold for $1. The volunteers will also sell pinwheels, with proceeds donated to the Boston Children’s Hospital.

“It’s all very affordable and we’re planning for a massive amount of people in Speakers Circle,” Troiano said. Troiano is expecting a successful fundraiser because she believes in MU’s students.

“Boston is strong, and so are its people,” she said. “Mizzou is behind Boston.”

Supervising editor is Richard Webner.