

## Family health and fitness

### Study focuses on link between genetics and exercise

BY DAVE AMBER  
The Battalion

There might be bad news for some dieters and fitness freaks. Genetic limits might keep them from reaching their desired goals.

Jack Wilmore, Texas A&M department head and professor of health and kinesiology, is part of a large international study of genetics' role in fitness. Based on results from the recent study, Wilmore said it might not matter how hard some people try to achieve a high fitness level.

People respond to exercise stimuli in different ways and each person has his own fitness range, affected more by genes than race or gender.

That people's genes might limit their fitness potential might seem like an obvious result, but this is the first large-scale population study to suggest this.

Wilmore and fellow investigator Jim Skinner, an Indiana University professor of kinesiology, compiled a large inter-generational data set of families' responses to exercise to provide a clearer quantitative difference between those who respond to exercise and those who do not.

Their project, the Heritage Family Study, examined sex, age and racial differences in exercise response.

The study, funded by the National Institutes of Health, is in its fifth of eight years.

Scientists generally agree that African-Americans have a higher incidence of hypertension than Caucasians. However, before the Heritage study, the race and age effects on training response was unclear.

"There really is not much information in terms of racial differences," said Wilmore, who began examining sex differences in exercise during the 1960's.

"We usually think of training as a form of adaptation, and with increasing age the ability to adapt goes down," Skinner said.

Skinner said the research team found a wide range of responses to exercise stim-

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— Dr. Jim Skinner  
Indiana University professor of kinesiology

uli in all age groups, races and genders.

"There is a low correlation between how you are right now and how you will be in the future," Skinner said.

A person might respond a certain way to exercise at one age, but differently when he's older.

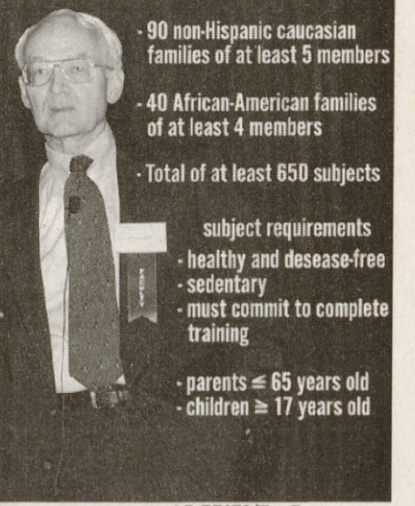
In other words, there might be no easy way to predict who will not respond to exercise.

Skinner said that although genetics might limit a person's fitness potential, family genetics probably matter more than the genetics of race or sex.

The study now will begin a time-consuming scan to find gene sequences that may indicate differences between responders and nonresponders to exercise.

Research into variations in health by gender and race can sometimes be controversial, especially if results show large differences, said Dr. Reuben Wright, a professor of physical education at Prairie View A&M University, who studies health variations in different ethnic groups.

## The Heritage Family Study



- 90 non-Hispanic caucasian families of at least 5 members
- 40 African-American families of at least 4 members
- Total of at least 650 subjects

subject requirements

- healthy and disease-free
- sedentary
- must commit to complete training

- parents ≤ 65 years old
- children ≥ 17 years old

J.P. BEATO/THE BATTALION

Dr. Jack Wilmore, health and kinesiology professor and department head, spoke about recent exercise research to the American College of Sports Medicine Texas Regional Chapter's 21st Annual Meeting last week at the Bush Conference Center.

Wright said the key is to present clear factual results from large population samples.

On the practical level, Skinner said that since activity and fitness do not necessarily go together, athletic coaches

might want to focus on the regularity of exercise rather than fitness goals that may be unattainable. "Coaching is both an art and a science because we don't know how somebody will respond based on current fitness," he said.

## First artificial asteroid orbits satellite

LAUREL, Md. (AP) — With near-flawless precision, a spacecraft slipped into orbit around the asteroid Eros, becoming the first manmade satellite of an asteroid. The craft now starts a year-long close-up study of the potato-shaped rock, hoping to determine its origins and help scientists mount a strategy to protect Earth from boulders from outer space.

A short rocket firing on Monday changed the orbital path of the Near Earth Asteroid Rendezvous (NEAR) spacecraft to allow it to settle into an orbit of Eros. The maneuver successfully completed a four-year odyssey

that included a failed attempt to rendezvous with the rock last year.

"The NEAR spacecraft is in orbit around the asteroid Eros," mission director Robert Farquhar announced minutes after engineers received a signal that a rocket had fired with an error of less than 1 percent.

"We are very happy and very excited," Farquhar said.

Automatic instructions stored aboard the craft triggered the rocket firing at 10:33 a.m. EST and engineers waited tensely in Mission Control for almost 20 minutes before success was confirmed. They broke into applause

and high-fives when it was clear that NEAR had reached its target.

Farquhar said the rocket firing aimed for an Eros orbit of about 200 by 299 miles and the craft hit that target within 30 to 40 miles. This is considered excellent "shooting" for such a small object that is 160 million miles away. Eros is so far out that a radio signal takes 14 1/2 minutes to reach Earth.

Project scientist Andrew Cheng said the success thrilled scientists eager to get an unprecedented close-up view of an asteroid and gather data with five different instruments.

"Monday may be Valentine's Day

for most people, but its Christmas Eve for me and all the presents are piled about, waiting to be opened," said Cheng.

NEAR will spend a year orbiting Eros, dropping in stages to lower orbits.

It will gather basic research that one day may help humans defend the Earth against a "killer asteroid" like the one thought to have wiped out the dinosaurs 65 million years ago.

"Understanding the physical characteristics of asteroids will be very important if we are ever called on to deflect one coming at the Earth," said NASA's Carl Pilcher.

## Thieves worldwide steal Copernican texts

MOSCOW (AP) — Copies of one of the world's rarest and most valuable books have been disappearing — a rash of mysterious thefts that have perplexed police from the former Soviet Union to the United States.

The first-edition copies of 16th century astronomer Nicolaus Copernicus' renowned treatise in Latin, "De revolutionibus orbium coelestium" (On the Revolutions of Heavenly Spheres) have vanished from collections across the globe.

In Poland, a reader said he had to use the bathroom — and made off with the treasured volume. A thief in Kiev, Ukraine, pilfered the book using a fake police ID. The latest theft of the book, published in 1543 and valued at up to \$400,000, was discovered earlier this month in Russia.

Russian police said they have appealed to Interpol for help in locating that book, which disappeared from the Academy of Sciences Library in St. Petersburg. Police would give no further details.

At least seven of the 260 known copies of the 1543 edition of "De revolutionibus" have disappeared in recent years, including one copy each from the University of Illinois at Champaign-Urbana and the Mittag-Leffler Institute in Stockholm, Sweden,

according to Owen Gingerich, a professor at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Mass.

Five copies remain missing.

Some police have speculated that a ring of thieves and collectors is behind the rash of thefts or that the books may have been stolen on some collectors' orders.

However, Gingerich said there is no evidence to suggest an international conspiracy to steal copies of the treatise, which describes Copernicus' then-revolutionary theory that the Sun, not the Earth, was at the center of the universe.

Gingerich has worked for a quarter-century compiling a list of all known copies of the first- and second-editions of the work, a quest that has taken him to cities and libraries worldwide — and has helped him trace at least two stolen copies.

While the book is a tempting target for thieves because of its value, it's also "a very dangerous title to steal," Gingerich said in an Internet interview, noting that his census can help identify any known copy, making it risky to try to sell a stolen copy at auction or on the international antique market.

Still, the disappearances continue.

The theft in Poland occurred in November 1998 at the Polish Academy of Sciences' library in Krakow, where a man in his 40s asked to read a first-edition copy of "De Revolutionibus" valued at \$320,000.

Sometime later, the reader said he had to visit the toilet — and disappeared.

He left behind his belongings and the book's covers, said Krakow's deputy police head Eugeniusz Szerbak.

Three months earlier, a man walked out of the Ukrainian National Library in Kiev carrying a first-edition Copernicus.

The thief had an apparently fake police ID and appeared to be well-acquainted with the library's security arrangements.

Librarians said he requested six books, including the Copernicus.

He then returned the books to secure a receipt, took a break and came back to request more books, including the Copernicus.

The man vanished with the rare book just before closing time, apparently showing the guard the initial receipt to prove he had returned it.

## Science Briefs

### Eye surgery more common for whites

CHICAGO (AP) — A study of Medicare claims found that African-Americans were only half as likely as whites to undergo surgery for glaucoma, the most common cause of blindness in African-Americans.

The researchers, whose study appears in the February issue of Archives of Ophthalmology, said the reasons could include lack of health-care access, inadequate education about the disease, overtreatment of whites and racial bias.

An estimated 3 million Americans have glaucoma, the nation's second-leading cause of irreversible vision loss.

The researchers noted that more than \$1 billion is spent on federal aid yearly to about 120,000 blind glaucoma patients.

Glaucoma is characterized by a buildup of pressure within the eyeball. Excessive pressure may damage the optic nerve.

The most common form usually occurs after age 40. Treatment typically begins with medication, followed by surgery — either conventional or with lasers — if that fails.

The disease is at least four times more prevalent in black Americans than in whites, but the current study and others suggest blacks are undertreated.

The researchers, led by Dr. Uday Devgan, a UCLA ophthalmologist, analyzed Medicare claims for both types of glaucoma surgery for 30,495 blacks and 160,792 whites between 1991 and 1994. Patients were at least 65 years old.

Taking into account the prevalence of glaucoma in patients of both races, the researchers determined that the rate of surgery for blacks was nearly

half that of whites and 47 percent below what would have been expected. Previous researchers found a racial gap in glaucoma surgery when examining Medicare records from the late 1980s through 1991.

Though Devgan and colleagues said the gap appeared to be narrowing in the mid-1990s, they said the disparities still were troubling.

### UPenn: therapy death an accident

WASHINGTON (AP) — The University of Pennsylvania told the federal government Monday an Arizona teenager's death from a gene therapy experiment was an unavoidable tragedy, not the result of research violations.


The Food and Drug Administration (FDA) last month suspended all the university's gene therapy studies, citing 18 rule violations in the experiment that killed 18-year-old Jesse Gelsinger, of Tucson, Ariz., last fall.

On Monday, the university filed a response with the FDA acknowledging some "procedural" problems but disagreeing with some of the charges.

The university insisted it immediately notified the FDA of Gelsinger's death, fully cooperated in the ensuing investigation, and that none of the alleged violations would have changed Gelsinger's care.

"With the best medical judgment and scientific information we had, we just didn't anticipate — nor in retrospect do we believe we could have anticipated — this tragic event," said Dr. Richard Tannen, the university's medical vice dean.

Gelsinger's liver was injected with a virus bearing genes designed to correct a genetic liver disorder.



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