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## Large Mississippi Study Traces Heart Disease—Race Link

Andrew Porterfield

In the Jackson Heart Study, the largest trial examining cardiovascular disease among African Americans, researchers have found significantly higher levels of metabolic syndrome, the suite of disorders that typically leads to heart disease.

Herman Taylor Jr, MD, cardiology professor at the University of Mississippi and the study's head, is leading a team that is observing more than 5,000 African-American Mississippians to look for the causes of racial disparities between blacks and Caucasians.

"We've found high levels of obesity, hypertension and diabetes. For the nation, death from cardiovascular disease has declined," Taylor said. "Yet for African Americans, mortality is flat or moving upward."

### REFERENCES

1. Jackson Heart Study, 2005. National Heart, Lung and Blood Institute. [ClinicalTrials.gov](http://ClinicalTrials.gov). [www.clinicaltrials.gov/ct/show/NCT00005485?order=38](http://www.clinicaltrials.gov/ct/show/NCT00005485?order=38).
2. Taylor HA Jr. Establishing a Foundation for Cardiovascular Disease Research in an African-American Community—The Jackson Heart Study. *Ethn. Dis.* 2003;13(4):411-413.

## Genes Point to Inherited Hypertension in African Americans

Andrew Porterfield

Variations in a gene associated with hypertension suggest that the disorder may be inherited more in certain populations, including African Americans, a Vanderbilt University study has found.

The Vanderbilt researchers found three previously unidentified single-nucleotide polymorphisms

(SNPs) for the GRK4 gene, which is associated with inhibition of the dopamine receptor's ability to accelerate sodium excretion and, thus, affects blood pressure. Studying African Americans, Hispanics, Asians and Caucasians, the group found that the structure of GRK4 gene varied among populations, with the largest differentiation between African Americans and Asians when compared to the genome's entire distribution. The researchers also focused on variations in haplotype structure, a relatively new method of determining the extent of genetic variation in complex disorders such as hypertension.

The study underscores the need to match not only genetic variation and disease but also definitions of race and ethnic makeup. "It would be interesting to determine to what extent the study subjects' genotypes have been influenced by race admixture," said Harold Betton, MD, PhD, director of the Little Rock, AR, Betton Clinic and an NMA reviewer.

### REFERENCE

- Lohmueller KE, Wong LJC, et al. Patterns of Genetic Variation in the Hypertension Candidate Gene GRK4: Ethnic Variation and Haplotype Structure. *Ann Hum Genet.* 2006;70 (1):27-41.

## Computer Savvy, Not Access, Key in Telemedicine

Andrew M. Porterfield

Computer skills, and not ownership, are the key factor making telemedicine available to underserved populations with heart disease risks, according to a study at Temple University in Philadelphia.

Alfred A. Bove, MD, PhD, led a team that studied African-American and Caucasian patients in rural areas for their ability and willingness to use computers to

access healthcare. The participants received two hours of computer and Internet training. About 82% of the patients scored very high on basic computer skills, and 37 of the 44 participants reported their blood pressure, weight, cigarette use and other information.

"For underserved populations, telemedicine can address the high prevalence and suboptimal control of CVD risk factors," said Bove. In addition, "Underserved populations can be educated to use a telemedicine system to communicate health status."

### REFERENCE

1. Masucci MM, Homko C, et al. Cardiovascular Disease Prevention for Underserved Patients Using the Internet: Bridging the Digital Divide. *Telemed J E Health.* 2006;12(1):58.

## Treat Hypertension Aggressively, Prevent Thousands of Senior CVD Cases

Andrew M. Porterfield

More aggressive treatment of hypertension among seniors could prevent thousands of heart attacks, strokes and deaths in all 50 states, a study by the actuarial firm Milliman Inc. found.

In regions heavily populated with seniors—California, Florida and Georgia—more than half of seniors had hypertension. In Florida, active treatment could prevent 19,000 deaths, while in California, 26,534 deaths could be prevented. In Atlanta, 7,119 strokes and heart attacks and 2,470 deaths could be prevented. The study "Reducing the Human Impact of High Blood Pressure" was commissioned by the Pharmaceutical Research and Manufacturers of America (PhRMA).

About two-thirds of Medicare beneficiaries have high blood

pressure, which puts seniors at risk of heart attacks, strokes and death. "For most people, high blood pressure can be controlled," said Paul Antony, MD, chief medical officer of PhRMA.

The report did not differentiate among treatments but noted that proper diet, exercise and medications all contribute to preventing cardiovascular disease.

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Cigich S, Fitch K. Reducing the Human Impact of High Blood Pressure. Supplement. Brookfield, WI: Millman, Inc.; 2006.

## Vascularized Artificial Heart Tissue Could Improve Treatments

Andrew M. Porterfield

Rapid advances have been made in the engineering of tissues and organs, but vascularization of these laboratory-made tissues has remained an obstacle to their use in transplants.

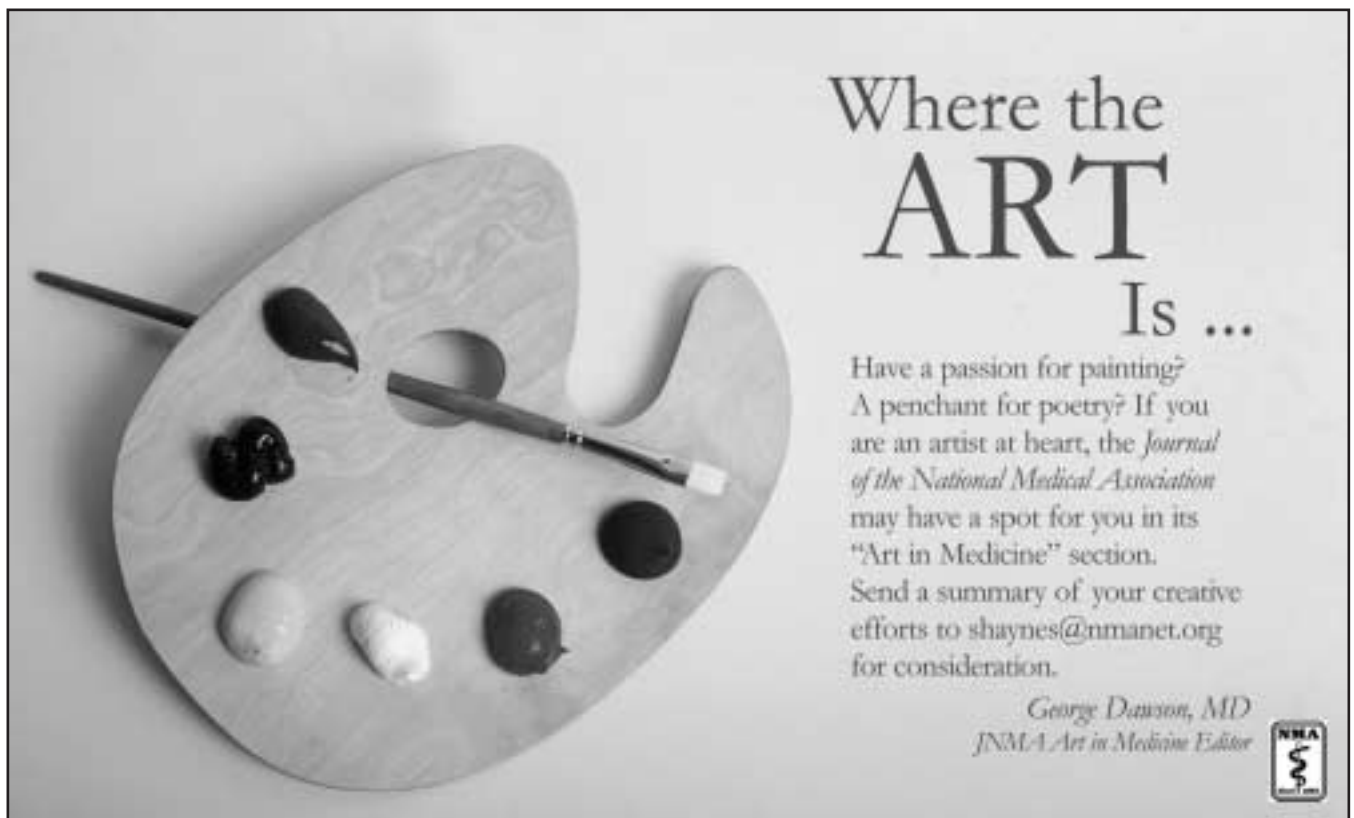
However, Ravi Birla, PhD, and his team at the universities of Michigan and North Carolina—Chapel Hill, developed a model that allows the development of blood vessels to sustain engineered heart tissue. The model heart tissue, called a *cardioid*, when implanted in rats, improved heart contractions. Their research appears in the journal *Artificial Organs*, which has published pa-

pers on artificial tissue and organ development since 1977.

"Tissue-engineered heart muscle can be utilized to treat cases of myocardial infarction and for the treatment of congenital heart defects," said Birla. The model cardioid was presented in an earlier paper, published in *Tissue Engineering*. "This study provides evidence of the degree to which cardiac tissue can now be engineered successfully," said Peter Johnson, MD, editor of *Tissue Engineering*.

#### REFERENCES


1. Birla RK, Borschel GH, et al. In Vivo Conditioning of Tissue-Engineered Heart Muscle Improves Contractile Performance. *Artifi Organs*. 2005;29(11):866-875.
2. Birla RK, Borschel GH, et al. Myocardial Engineering In Vivo: Formation and Characterization of Contractile, Vascularized Three-dimensional cardiac tissue. *Tissue Eng*. 2005;11(5-6):803-813.



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