

RESEARCH NOTES

Women prone to different hot flash, night sweat patterns

Most women will get hot flashes or night sweats at some point in life. However, when these symptoms occur and how long they last can vary dramatically. New findings show that women fit into four distinct groups when it comes to getting hot flashes and night sweats, with potential ramifications for therapy and prevention of future health conditions, according to research led by the Graduate School of Public Health.

The epidemiological investigation followed hundreds of women for an average of 15 years and identified characteristics that predisposed them to certain trajectories for getting hot flashes and night sweats, collectively known as “vasomotor symptoms.” The findings were published in *Menopause: The Journal of the North American Menopause Society*.

Said senior author **Rebecca Thurston**, faculty member in the Department of Psychiatry and an epidemiologist at the public health school: “Most women get vasomotor symptoms, and we used to think these symptoms lasted from three to five years, right around the time of the final menstrual period. We now know that these symptoms persist for far longer — typically seven to 10 years — and occur at different times for different women. This is strong evidence that we need to further investigate the underlying physiological causes of vasomotor symptoms and their link to potentially preventable health conditions.”

Hot flashes and night sweats involve a sudden flush of feverish heat and are linked to menopause, the time when a woman’s menstrual periods stop.

Thurston and her colleagues followed 1,455 women enrolled in the Study of Women’s Health Across the Nation (SWAN) who had not yet gone through menopause when they enrolled. The women lived in Pittsburgh; Boston; Detroit; Chicago; Los Angeles; Oakland, California; and Newark, New Jersey, and were not on hormone therapy, nor did they have a hysterectomy. Each year, the women reported their vasomotor symptoms. They received a clinical examination and sometimes a blood test.

The researchers found that the women could be relatively equally divided into four distinct trajectories for vasomotor symptoms

as they went through menopause transition, and that certain characteristics were more common in different categories:

- A consistently low chance of having symptoms throughout the menopause transition was more common in Chinese women.

- A consistently high chance of having symptoms throughout the transition was more common in black women, those with less education, those who reported drinking alcohol moderately or heavily, and those who reported symptoms of depression or anxiety.

- An early onset of symptoms in the decade before the final menstrual period with cessation thereafter was more common among women who were obese, had symptoms of depression or anxiety, were in poorer health than their peers and at an older age at menopause.

- A late onset of symptoms after the final period that gradually declined in the following decade was more common in women with a lower body mass index (ratio of weight to height), those who smoked and black women.

- Hormonal fluctuations were correlated with vasomotor symptoms but were not perfectly consistent, indicating that they did not fully account for the symptoms.

Said co-author **Maria M. Brooks**, faculty member in epidemiology and biostatistics and principal investigator of the coordinating center for SWAN: “When we see patterns like this, it indicates that there’s something going on beyond hot flashes and night sweats being a passing nuisance. Depending on which category a woman falls into, there may be important implications regarding her health.”

In a different, recent study, Thurston found evidence that some of these trajectories were associated with risk factors for cardiovascular disease.

“At this point, we can’t completely untangle any causal relationship between vasomotor symptoms and health outcomes or suggest preventative measures for vasomotor symptoms without further study,” said Thurston. “But women and their doctors can use these findings now to help them get a better idea what they’re likely to experience as they go through menopause and to plan the best ways to manage their symptoms.”

Additional Pitt authors on this study were **Ping G. Tepper, Samar R. El Khoudary, Joyce T. Bromberger, Kristine Rup-**

pert and Bobby Jones. Also contributing were colleagues from the University of Massachusetts, the University of Michigan, the University of California-Davis, Harvard, the University of Utah and Wake Forest University.

The NIH grant was awarded through the National Institute on Aging, the National Institute of Nursing Research and the Office of Research on Women’s Health.

Katz prof wins best conference paper

Cait Lambertson, the Ben L. Fryrear Chair of Marketing and faculty member in business administration in the Katz Graduate School of Business, received the best conference paper award at the American Marketing Association’s 2016 marketing and public policy conference.

“Will I Pay for Your Pleasure? Consumers’ Perceptions of Negative Externalities and Responses to Pigovian Taxes” explores consumer behavior with co-authors from West Virginia University.

A Pigovian tax is a tax levied on any market activity that generates negative externalities. The tax is intended to correct an inefficient market outcome and is set equal to the social cost of the negative effects of a certain behavior (i.e., smoking, consuming fast food or drinking sugary soda).

Said Lambertson: “We all recognize that our behavior affects ourselves. That’s an ‘internality.’ But when we believe that our behavior creates costs for others, we believe in ‘externalities.’ Some people believe in them; some people don’t.”

Lambertson’s research findings suggest that policymakers may want to reconsider their approach to imposing the tax.

“We learned that people’s attitudes toward these taxes depend on a fundamental belief about the way the world works,” said Lambertson. “Our data indicates that people who think these taxes are unfair may be Democrat or Republican, young or old, male or female. Policymakers who try to beat them over the head with a Pigovian tax will fail because they’re not addressing a root issue that underlies its rejection.”

Lambertson added that one way to nudge healthier behavior is to reframe the price differences in beverages as rewards for good behavior rather than punishments for damaging behavior, meaning that consumers who choose to buy a less sugary drink will receive

a discount.

“While mathematically, this could work out to exactly the same price levels, allowing people to feel that they could be rewarded for good behavior seemed much more fair and more acceptable to our respondents, regardless of their belief in externalities,” said Lambertson. “The reward associated with a less unhealthy option may be enough to nudge us toward a new habit, while helping to fund a healthier society at the same time.”

The paper was published in the *Journal of the Association for Consumer Research*.

Cancer centers’ ads tripled since 2005

Cancer centers promoting their services dramatically increased their advertising spending from 2005 to 2014, with the bulk of the spending by for-profit organizations, according to the results of a study from researchers at Pitt’s School of Medicine, Graduate School of Public Health and Indiana University.

They reported that 890 cancer centers spent \$173 million for advertising in 2014, and just 20 centers accounted for 86 percent of the spending.

One company, Cancer Treatment Centers of America, a for-profit firm with a national network of five hospitals, spent \$101.7 million, 59 percent of the total. In contrast, 25 of the nation’s 60 National Cancer Institute (NCI)-designated cancer centers spent no money on advertising and, of those that did, half spent less than \$4,000, the authors found.

Of the 20 centers that accounted for the bulk of spending, five were for-profit institutions, 17 were Commission on Cancer-accredited and nine were NCI-designated centers.

The report was published in *JAMA Internal Medicine*.

Spending on cancer center advertising has more than tripled since 2005. Additional work is needed to better understand how advertising may affect the cost and quality of care, the authors said.

The researchers used data from Kantar Media, an agency that tracks advertising and calculates expenditures. They obtained data for television, magazine, radio, newspaper, billboard and internet advertising. The expenditures were adjusted to 2014 U.S. dollars using the Consumer Price Index. The researchers also identified the centers by location.

Growth in spending in all advertising categories was led by television, where \$37 million was spent in 2005, rising to a peak of \$107 million in 2011. Television spending declined somewhat after that, but still stood at \$87 million in 2014. Print media spending rose from \$11 million to \$34 million. In a time when internet advertising was growing, cancer center online ads were among them: internet display advertisements rose from \$300,000 in 2005 to \$9 million in 2014.

Said senior author **Yael Schenker**, School of Medicine faculty member: “More work is needed to understand the effects of cancer center advertising on the web, as more and more people search for health information online. One concern is that when advertisements are listed at the top of

internet search results, patients may have trouble finding and recognizing good information.”

After Cancer Treatment Centers of America, the two biggest advertisers in 2014 were MD Anderson Cancer Center, which spent \$13.9 million, and Memorial Sloan Kettering Cancer Center at \$9.1 million.

The authors noted that the expenditure calculations could be low because advertising in cancer-specific magazines was not included, nor was advertising by affiliated organizations designed to encourage charitable donations.

The research was supported by NIH and by a Pitt Department of Medicine Junior Scholar Award.

Other Pitt researchers included **Julie M. Donohue** and **Seo Young Park**.

Pitt to help lead million-person study

NIH announced that of \$55 million in awards in fiscal year 2016 to launch the cohort program of President Obama’s Precision Medicine Initiative (PMI), \$4.2 million will go to Pitt to build the foundational partnerships and infrastructure needed. The PMI cohort program is a longitudinal research effort announced in the 2015 state of the union address that aims to engage 1 million or more U.S. participants to change how disease is prevented and treated based on individual differences in lifestyle, environment and genetics.

Over five years, the total amount that will be awarded to Pitt is anticipated to top \$46 million, pending progress and availability of funds. Pitt is one of several organizations receiving awards to support a network of healthcare provider organizations (HPO). The HPOs will include regional medical centers, of which Pitt will be one; selected federally qualified health center pilot sites; and selected VA medical centers. The awards set NIH on course to begin initial enrollment into the PMI cohort program this year, with the aim of meeting its 1-million person enrollment goal by 2020. NIH awards also will support a data and research support center and a participant technologies center.

Said Arthur S. Levine, senior vice chancellor for the Health Sciences and John and Gertrude Petersen Dean of Medicine: “We are on the cusp of a new era in medicine in which we can apply knowledge in genetics and genomics, combined with lifestyle and environmental data and other disciplines, to improve disease prevention strategies and tailor treatment options for everyone.”

Led by Pitt’s Clinical and Translational Science Institute (CTSI) — a collaboration of the Schools of the Health Sciences and UPMC — the Pitt PMI project, called the Precision Approach to healthCARE (PA CARES), will be launched at 11 enrollment sites across the western half of Pennsylvania and neighboring states. In its first year, PA CARES aims to recruit and enroll 10,000 volunteer participants, primarily from CTSI’s research participant registry of more than 103,000 participants as well as an additional 165,000 individuals over the five-year award period.

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Teaching Survey Are you teaching this summer and looking for student feedback?

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Trustees increase some student fees

The Board of Trustees student affairs committee has approved increases to student fees on the Pittsburgh and Johnstown campuses, beginning in the fall term.

Pittsburgh campus wellness fee

In a July 12 meeting, the committee voted to raise the wellness fee for Pittsburgh campus students to \$120 per semester for full-time graduate and undergraduate students, an increase of \$15 per semester.

In addition, the committee has instituted a \$60 per semester wellness fee for part-time graduate and undergraduate students. Currently, part-time students are not automatically billed for the wellness fee, but must purchase it prior to using the Student Health Service.

The wellness fee supports the Student Health Service, the University Counseling Center and the Office of Intramurals and Recreation.

The fee increase will “provide

additional resources to better meet the evolving needs of students through expanded programs and services,” committee documents stated.

The committee cited reasons for the increase: a 30 percent increase in visits to student health and the counseling center since their move in 2013 to Nordenberg Hall; growing participation in HealthyU wellness programming; and the need for maintenance and renovations to campus recreational facilities.

Pitt-Johnstown activity fee

The committee voted to increase Pitt-Johnstown’s activity fee for full-time undergraduate students, currently \$83 per term in fall and spring terms, to \$90 per term in fall and spring terms. The fee last was increased in the 2007-08 academic year.

According to board background documents, income from the fee is used “to increase the number and quality of social, cultural and diversity-oriented activities and to enhance the

campus learning environment.”

The increase, which was approved by the UPJ board of advisers on recommendation of the UPJ student government, “would bolster accessible funding and, ultimately, yield more events for the campus community,” board documents stated.

UPJ’s Student Government Association allocates the funds to the Student Senate allocations committee and other student organizations.

The current fee was termed inadequate to fund the growing numbers of clubs and organizations and increased costs.

—**Kimberly K. Barlow**

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PMI cohort program volunteers will be asked to contribute a wide range of health, environment and lifestyle information. They also will be invited to answer questions about their health history and status, share their genomic and other biological information through simple blood and urine tests and grant access to their clinical data from electronic health records.

In addition, mobile health devices and apps will provide lifestyle data and environmental exposures in real time. Data acquisition will be accomplished with essential privacy and security safeguards. Participants will have ongoing input into study design and implementation, as well as access to a wide range of their individual and aggregated study results.

Nearly 50 jobs will be created across Pennsylvania as a result of this grant, in patient recruitment, data collection and processing. Individuals wishing to enroll in the CTSI registry can do so at www.researchregistry.pitt.edu.

Pitt co-investigators are **Steven E. Reis**, **Shyam Visweswaran** and **Oscar Marroquin**.

HIV/AIDS cure research funded

Pitt and 17 other medical institutions will collaborate with George Washington University, which has been awarded a five-year NIH grant totaling \$28 million to find a cure for HIV.

This award is the second iteration of the Martin Delaney collaboratory program, which fosters public-private partnerships to accelerate HIV/AIDS cure research. Delaney, an influential AIDS activist, championed partnerships involving government, academia and industry.

The Pittsburgh arm of the project is being led by **Thomas Smithgall**, the William S. McElroy Professor and chair of the Department of Microbiology and Molecular Genetics in the School of Medicine.

The project, “Bench to Bed Enhanced Lymphocyte Infusions to Engineer Viral Eradication (BELIEVE),” aims to find ways to eliminate HIV reservoirs through an innovative cell therapy approach that will focus on augmenting individuals’ natural immunity. Work in the Smithgall laboratory is focused on drug discovery targeting an HIV-1 protein that suppresses the body’s immune response to the virus.

Said Smithgall: “Working with the BELIEVE consortium, we

will be in a position to examine the potential of these novel compounds to restore natural immune responses to HIV-infected cells, a critical component of an HIV cure strategy.”

The Pitt researchers are part of a team led by George Washington University, working with Altor Bioscience and Torque.

In addition to Pitt, the institutions involved in this research are Children’s National Health System; NIH; Howard University; University of Arizona; Brigham Young University; University of Minnesota; Johns Hopkins; Seattle Children’s Hospital; Beth Israel Deaconess Medical Center, Harvard; Penn; Georgetown; Albert Einstein College of Medicine; University of Toronto; Simon Fraser University; Centro de Investigación en Enfermedades Infecciosas, Mexico; and the University of São Paulo, Brazil.

Six biomedical devices gain pilot funding

The Center for Medical Innovation (CMI) awarded grants totaling \$140,000 to six research groups through its 2016 round-1 pilot funding program for early stage medical technology research and development. The latest funding proposals include developing a novel vascular access system, a shunt for treatment of fetal hydrocephalus in utero, a system for stroke rehabilitation, a cell therapy for treatment of aortic aneurysm, a method for treatment of sickle cell anemia and a novel mechanical device for use in general surgery.

CMI, in the Swanson school, supports applied technology projects in the early stages of development with kick-start funding toward the goal of transitioning the research to clinical adoption. Proposals are evaluated on the basis of scientific merit, technical and clinical relevance, potential health care impact and significance, experience of the investigators and potential in obtaining further financial investment to translate the particular solution to health care.

Said Alan D. Hirschman, CMI executive director: “This early-stage interdisciplinary research helps to develop highly specific biomedical technologies through a proven strategy of linking UPMC’s clinicians and surgeons with the Swanson school’s engineering faculty.”

The six awards were:

- Electro-targeted vascular

access: a novel way to quickly and accurately place peripheral and central venous catheters — to design, build and test an advanced vascular catheter and guidance system for rapid, accurate placement in critical care. **Cameron Dezfulian**, critical care and clinical and translation medicine; and **William Clark**, engineering and materials science.

- VASFAS (Ventriculo-Amniotic Shunt for Fetal Aqueductal Stenosis) — a continuation award for pre-clinical testing of a newly developed shunt to treat fetal hydrocephalus in utero. **Stephen P. Emery**, obstetrics, gynecology and reproductive sciences; **Youngjae Chun**, industrial engineering and bioengineering; and **Stephanie Greene**, neurosurgery.

- I-HITS: Individualized hand

improvement and tracking system after stroke — continuation award for development and clinical evaluation of a system to track therapeutic progress in stroke patients with impaired upper extremity function. **Amit Sethi**, occupational therapy, and **Ervin Sejdic**, electrical and computer engineering.

- Minimally invasive delivery of therapeutic cells to abdominal aortic aneurysm — to develop and perform preclinical testing of a new biological therapy for prevention and treatment of abdominal aortic aneurysm. **Kory Blöse**, bioengineering; **Justin Weinbaum**, bioengineering; **Ryan McEnaney**, vascular surgery; and **John Curci**, vascular surgery.

- Reducing alloimmunization and sickle crisis in SCD patients

using a novel method of replacing HbS with donor Hb in patient’s RBCs — continuation award to develop and test a new method for reconditioning the blood of sickle cell patients. **Marina V. Kameleva**, surgery and bioengineering; **Jonathan H. Waters**, anesthesiology and bioengineering; and **Mark Gartner**, bioengineering.

- A motorized flexible arm retractor for open abdominal surgery — continuation award for development and testing of a novel mechanical device that improves and simplifies the management of surgical devices in the OR. **Peter Allen**, general surgery; **Garth Elias**, general surgery; and **Jeffrey S. Viperman**, mechanical engineering and materials science.

—**Compiled by Marty Levine**

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