

### Dear GUTS Community,

Thank you for another great year of public health research!

We are happy to announce that **Dr. Rulla Tamimi, ScD has joined GUTS as our new Scientific Director.** Dr. Tamimi is an internationally-recognized expert in breast health, cancer, and molecular epidemiology. Dr. Tamimi’s research is focused on uncovering early risk factors for breast cancer, with the goal of improving cancer prevention, early detection, and treatment.



**Rulla Tamimi, ScD**  
Scientific Director of GUTS  
Associate Professor of Medicine  
Harvard Medical School

Dr. Tamimi has spent nearly 20 years as an active investigator within the Harvard cohort studies, and she brings both a deep understanding of epidemiological research and a passion for bettering health outcomes to her new position.

We look forward to seeing GUTS evolve under Dr. Tamimi’s leadership.

We also want to let you know that **the next GUTS Questionnaire will launch this winter.** This questionnaire will include questions related to your residential history that will make it possible for researchers to explore how the local environment influences health.

GUTS researchers have been busy analyzing the wealth of data already collected to investigate a variety of new topics related to substance use, migraines, hearing loss, and much more. This newsletter highlights some of the recent research findings, all of which were made possible by you.

Once again, thank you for your participation in GUTS and your continued commitment to health research!

- *The GUTS Study Team*

#### Need to update your email address?

Let us know by emailing [guts@channing.harvard.edu](mailto:guts@channing.harvard.edu).

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## HPV Vaccination Disparities

The human papillomavirus (HPV) is the most common sexually transmitted infection (STI). We know that HPV can cause certain types of cancer, including cervical cancer, and that transmission can be decreased by vaccination.



Recent findings using GUTS data indicate that only **56% of female participants reported receiving one or more doses of human papillomavirus (HPV) vaccine**, and a mere **8% of males reported receiving one or more doses of the HPV vaccine**.

This study also examined how HPV vaccination differed across sexual orientation groups. Results from this detailed analysis found that **completely heterosexual and mostly heterosexual males were half as likely to have received even a single dose when compared to gay males in the cohort**. These findings demonstrate that special attention is needed in order to increase HPV vaccination rates for boys and men, especially those who do not identify as gay.

Charlton BM, Reisner SL, Agenor M, Gordon AR, Sarda V, Austin SB. [Sexual orientation disparities in human papillomavirus vaccination in a longitudinal cohort of U.S. males and females](#). *LGBT Health*. 2017 Jun;4(3): 202-209

## Bullying & Mental Health

Many young people experience the stress of being bullied, but researchers are still trying to tease apart how bullying impacts different people, including those who identify as lesbian, gay or bisexual.

Recent research has found that more **bullying victimization was associated with greater depressive symptoms among bisexual women and with greater anxious symptoms among mostly heterosexual women**.



With the goal of helping those most negatively affected, researchers hope to learn more about what may protect some groups from the effects of bullying and the other stresses that are unique to being a sexual minority.

Katz-Wise SL, Rosario M., Calzo JP, Scherer EA, Sarda V, Austin SB. [Associations of timing of sexual orientation developmental milestones and other sexual minority stressors with internalizing mental health symptoms among sexual minority young adults](#). *Archives of Sexual Behavior*. 2017 Jul;46(5):1441-1452.

See a full list of GUTS publications at

[www.gutsweb.org](http://www.gutsweb.org) !

## “Green Spaces” & Mental Health



Previous studies have observed an association between exposure to nature and improved mental health, though few have examined this relationship specifically in adolescents and young adults. With this in mind, Carla Bezold, who recently completed her ScD at the Harvard T.H. Chan School of Public Health, decided to focus part of her dissertation on the effects of nature, particularly green space, on mental and physical health in adolescents and young adults.

By combining satellite data, which provide detailed information about the natural environment in a given area, with de-identified residential history records from GUTS, Carla was able to calculate a measurement of “greenness exposure” (i.e., amount of nearby vegetation) for study participants. She then assessed how this exposure related to depressive symptoms self-reported on GUTS questionnaires. Her analysis found that **GUTS participants living in greener areas were less likely to report high depressive symptoms.** This relationship was stronger in places with higher population densities, which hints that the **mental health**

**benefits of green spaces may be particularly important for people who live in cities and other urban areas.**

Additional research is needed to learn how different uses of green space may impact our health, but thanks to Carla’s efforts, we now know that people may experience lasting health benefits simply by having had more green space in their local childhood community.

Bezold CP, Banay RF, Coull BA, Hart JE, James P, Kubzansky LD, Missmer SA, Laden F. [The relationship between surrounding greenness in childhood and adolescence and depressive symptoms in adolescence and early adulthood.](#) *Annals of Epidemiology* 2018 Apr;28(4):213-219. doi: 10.1016/j.annepidem.2018.01.009. Epub

## Post-Traumatic Stress & Binge Eating

Prior research has established that post-traumatic stress disorder (PTSD) is a risk factor for obesity, yet the pathways that contribute to this association remain unknown. Using data from GUTS questionnaires, researchers found that **men and women with symptoms of PTSD reported binge eating more often** than those who did not report PTSD symptoms. For clinicians working with patients with PTSD symptoms, being aware of potential problematic eating behaviors may prove beneficial to their patients’ care.

Mason SM, Frazier PA, Austin SB, Harlow BL, Jackson B, Raymond NC, Rich-Edwards JW. [Posttraumatic stress disorder symptoms and problematic overeating behaviors in young men and women.](#) *Annals of Behavioral Medicine* 2017.

Even if it’s been a while since you last completed a GUTS questionnaire, your participation this year is valuable!

# Discussing Sleep Health with Dr. Schernhammer



Eva Schernhammer, MD, DrPh  
Associate Professor of Medicine  
Harvard Medical School

## When did you first become interested in researching sleeping patterns and health?

My interest in sleep and night shift work stems from my time as a clinician, when I was doing lots of night shifts myself. I felt tired all the time. I figured that this couldn't be healthy, but the science to support that notion was relatively limited at the time. When I came to Harvard in 1999, I immediately began researching these issues. Over the past few years, I have overseen the GUTS Biorhythm Study. This important biospecimen collection has strengthened our ability to study how sleep and various work schedules relate to health.

## Can sleeping patterns influence our health in the long term?

My research is focused on chronic disease risk, and yes, we see largely consistent evidence for increased risks of major chronic diseases (e.g., cancer, cardiovascular disease, diabetes) among individuals who work night shifts or encounter other forms of sleeping difficulties.

## How are the first morning urine samples from the GUTS Biorhythm Study helping to further this research?

We are using first morning urine samples collected from approximately 1,500 GUTS participants to measure a hormone in the body called melatonin. Melatonin is an ideal biomarker of the circadian system that is tightly linked with sleep and is almost exclusively produced at night. By comparing melatonin levels from so many different individuals, we are able to investigate how varying amounts of nightly melatonin production relate to sleep patterns and other sleep-related health issues.

## What aspects of sleep and health are you currently researching?

We are currently exploring the effects of moms' night shift work during pregnancy on a number of health-related outcomes in their kids who are enrolled in GUTS. We began by examining weight outcomes, and we will turn to mental health outcomes next.

In addition, we will explore how moms' sleep patterns may affect their kids' biomarker levels, specifically melatonin.

## When will findings from the GUTS Biorhythm Study become available?

We are currently analyzing the data from more than 1,000 first morning urine samples, and we hope to have our first results published within the next 6-12 months.



**THE GROWING UP TODAY STUDY**

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