



Pregnancy Study Online (PRESTO)

BOSTON
UNIVERSITY



We are excited to share the 2024 Pregnancy Study Online (PRESTO) annual newsletter with you!

This year, we received several grants to expand our research on reproductive health. Specifically, we received funding from the National Institutes of Health to assess how fertility is associated with mid-life health and from the International Society for the Study of Women's Sexual Health to examine how chemical exposures affect sexual health. In 2025, we plan to form a new Participant Advisory Board to receive input about the participant experience and ideas for future topics to study.

The PRESTO team is tremendously grateful for your participation, and we hope you find this newsletter helpful and informative. **We could not do any of this without you!**

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Research Highlight: Environmental Chemicals and Ovarian Reserve

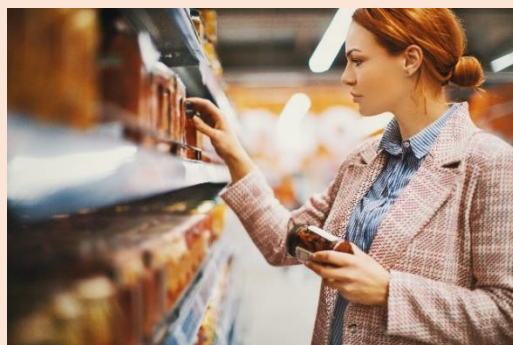
Take-Home Messages

- Per- and polyfluoroalkyl substances (PFAS) are chemicals used to make fabrics, packaging, and other products resistant to stains, grease, or water.
- Most people in industrialized countries are exposed to PFAS, but we do not know enough about the effect of PFAS exposure on reproductive health.
- In PRESTO, higher levels of PFAS were associated with lower ovarian reserve (the number and quality of eggs in the ovaries), but only among participants who had never given birth.

PFAS are chemicals commonly found in stain-resistant textiles, waterproof outdoor gear, and grease-repellant food packaging, and often make their way into drinking water. In previous studies, exposure to PFAS has been linked with reproductive health problems, including infertility.

Using data from E-PRESTO (Environmental Pregnancy Study Online), we studied how concentrations of PFAS in participants' blood samples are associated with their ovarian reserve (the number and quality of eggs in their ovaries). We assessed ovarian reserve by measuring concentrations of anti-Müllerian hormone (AMH) in blood, which can indicate how many eggs remain in the ovary and can predict the timing of menopause. We found that while there was a weak overall link between PFAS and AMH, there was an association between higher PFAS exposure and lower AMH (lower ovarian reserve) among participants who had never given birth.

We have several other projects underway which examine the effect of chemical concentrations on reproductive health, and we will share these results when they are available.



We are also excited to announce that within the next few months, we plan to expand our mail-based biospecimen sub-study to collect four new biospecimens: toenails, hair, saliva, and vaginal swabs. With these new biospecimens, we can analyze the presence of hormones like cortisol (a marker of stress) and other chemical exposures (like metals), and study how these exposures influence reproductive health.

You can read the full paper [here](#).

Research Highlight: Reproductive Health Effects of COVID-19 Vaccination



When the COVID-19 vaccines came out in early 2021, many people expressed concern that the vaccines could adversely affect reproductive health, including fertility. To address this concern, we added questions on COVID-19 vaccination and infection to the PRESTO questionnaires in the Spring of 2021. We used these data to examine the association between COVID-19 vaccination, COVID-19 infection and reproductive health.

First, we examined the association of COVID-19 vaccination and infection with fertility. We found no association between COVID-19 vaccination in either partner and fertility. We also found that male partners that had recent **infection** with COVID-19 had lower fertility for 1-2 months after infection.

Take-Home Messages

- COVID-19 vaccination was not associated with fertility or miscarriage.
- COVID-19 **infection** in male partners was associated with a temporary reduction in fertility.
- Menstrual cycles tended to be slightly longer immediately after COVID-19 vaccination but returned to normal within 1-2 cycles.

Next, we assessed whether COVID-19 vaccination was associated with higher risk of miscarriage. We found that COVID-19 vaccination in either partner at any time before pregnancy was not associated with miscarriage risk.

Finally, we looked at whether menstrual cycle characteristics changed after COVID-19 vaccination. We found that menstrual cycles immediately after vaccination tended to be slightly longer (~1 day) than pre-vaccination cycles, but that cycles returned to normal within 1-2 cycles. Other menstrual cycle characteristics (including heavy bleeds and menstrual pain) were similar before and after vaccination.

You can read the full papers [here](#), [here](#), and [here](#).

Other Recent PRESTO Findings

Flu Vaccine and Miscarriage

Flu vaccination before or during pregnancy in either partner was not associated with higher risk of miscarriage. Read more [here](#).



Job Control and Fertility

Female participants whose jobs carried low levels of independence (freedom to make decisions at work) experienced a longer time-to-pregnancy. Read more [here](#).

Body Mass Index and Semen Quality

High body mass index, waist circumference, and adult weight gain were associated with poor semen quality. Read more [here](#).



Sugar Sweetened Beverage Consumption and Semen Quality

Greater intake of sugar sweetened beverages was associated with poorer semen quality. Read more [here](#).

Male Dietary Fat Intake and Fertility

Greater intake of total and saturated fatty acids among male participants was associated with a slightly shorter time-to-pregnancy. Read more [here](#).



Sleep and Miscarriage

Short sleep duration in the male partner but not the female partner was associated with higher miscarriage risk. In both partners, working non-daytime hours was associated with higher risk of miscarriage. Read more [here](#).



Oral Health and Miscarriage

Female participants who had a history of an adult tooth becoming loose without injury had a higher risk of miscarriage. History of gum disease was not associated with miscarriage. Read more [here](#).

Please contact us at bupresto@bu.edu if there is an article you are interested in reading and have trouble accessing the full paper.



Ongoing Research



Research on Racial Diversity in PRESTO

People of color are underrepresented in fertility research. Adequate representation is essential for improving health outcomes and reducing health disparities. We designed a research study to understand barriers to participation in fertility research among self-identified women of color and to help us devise a strategy for improving their participation in PRESTO. To date, we have recruited 37 participants, representing African American, Latina, Asian American, and Native American women into this substudy. Through focus groups and interviews, we have learned about various barriers to engagement in fertility and pregnancy research, including stigma, fear of research, lack of awareness, mistrust, apprehension regarding potentially fraudulent activities, and concerns regarding privacy breaches or confidentiality lapses.

Participants suggested various methods to address these concerns, including but not limited to:

- Promoting research on social media with influencers and researchers who resonate with the target population to raise awareness and boost trust
- Enhancing incentives through increased financial compensation, ovulation tests, and supplementary wellness services
- Improving participant retention via support groups and access to fertility information (e.g., monthly newsletter).

We are still recruiting for this study, so if you are interested or know anyone who might want to share their thoughts with us, [please visit this link](#) or email Dr. Jasmine Abrams (jasmine.abrams@yale.edu).

Fertility and Future Health

There is some evidence that fertility can serve as a marker of future health; in fact, reproductive health has been referred to as “the sixth vital sign.” Recently, we received funding from the NIH to study the health of PRESTO participants 10 years after their initial enrollment to see if there is an association between time-to-pregnancy and health later in adulthood.

If you joined PRESTO 10 or more years ago, we will contact you in 2025 and invite you to complete a supplemental questionnaire and with the option to provide us with access to your medical records. We will study the effects of reproductive health on later-life health, including heart health, blood pressure, diabetes, mental health, menopause, and quality of life.

We look forward to reconnecting with PRESTO participants from the beginning of the study as we start collecting data next year. Thank you in advance for supporting us in this new research endeavor!

We look forward to sharing the results of these research projects with you when they become available.

PRESTO Team Member Spotlight



Andrea Kuriyama, MPH

Andrea Kuriyama recently graduated from Boston University School of Public Health with her Master's of Public Health degree this Spring. Her concentrations were in epidemiology and community health program implementation. Beginning in 2021, she worked as a Research Assistant for PRESTO during her time as an MPH student and is excited to continue working on the PRESTO team as a Research Fellow post-graduation. Her research interests are mainly focused on reproductive health, maternal and child health, and social determinants of health.

Andrea grew up in New Jersey where she currently lives as well. In her free time, she enjoys reading, trying out new recipes, and exploring new parks and coffee shops in her area.



Julia Bond, PhD

Julia Bond received her PhD from the Boston University School of Public Health in May 2024. Her research has evaluated the relationship between oral health and reproductive health. She is also interested in sexual health and well-being and has used PRESTO data to publish studies on the importance of pain-free and positive sexual experiences in the preconception period. She will be continuing her work on women's sexual and reproductive health as a postdoctoral researcher at Boston Medical Center.

Julia had many hobbies before having two children during her doctoral studies, among them gardening, birdwatching, running, and traveling. These days, she enjoys sleeping in and being constantly surprised by her children.

Have questions about participation in PRESTO?
Want to enroll again, or invite a friend to enroll?
Curious to learn more about our findings?
Have suggestions for future research or future newsletters?
Contact us at bupresto@bu.edu or (617) 358-3424