

40 yrs of Research on the Menstrual Cycle: Looking Back, Moving Forward

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June 23, 2017

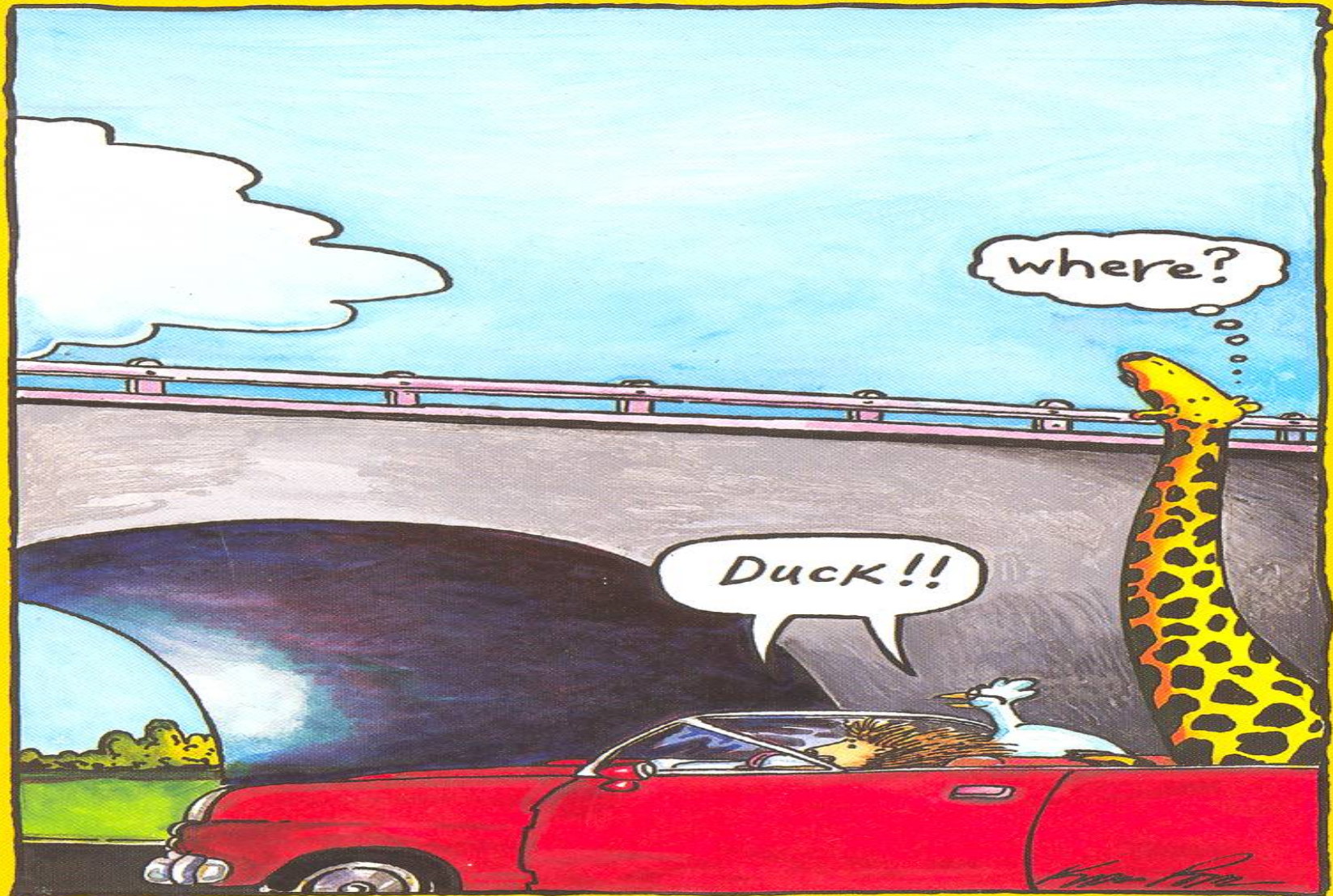


First, a Caveat:

I use the term “women” in this paper to refer to anyone who has, or has previously had, a menstrual cycle. This follows the general use of the term “women’s health” in the academic health care community to discuss health issues around pregnancy, menstruation, menopause and breast cancer. I acknowledge not all people who have a menstrual cycle identify as women, and not all people who identify as women have a menstrual cycle.

adapted from Epstein et al, 2017

The Far Side, G. Larson.



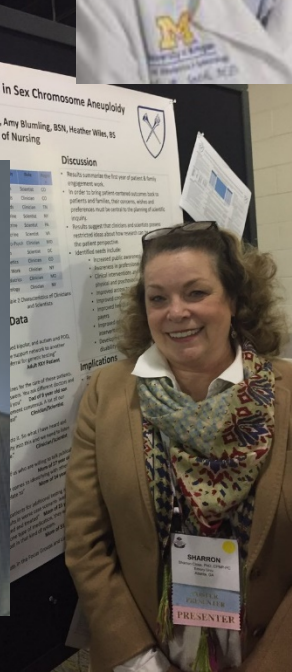
Unfortunately, animals sometimes lack the necessary skills to communicate with each other.



To all my menstrual (post) “sisters”!



My Mentees



Special Dedication: Esther Rome, co-founder OBOS (1945-1995)



Her menstruation brochure, printed in red ink, was one of the collective's first spin-off publishing projects and grew into a long-term project related to toxic shock syndrome and the need to develop uniform absorbency labeling for tampons.

Esther also advocated for better testing and FDA regulation of silicone-gel breast implants. She led support groups in Boston for women who had problems with breast implants and frequently spoke with the media about this and larger issues surrounding body image and societal pressures on women to alter their bodies.

Just before her death, Esther completed "Sacrificing Our Selves for Love," a book coauthored with Jane Wegscheider Hyman that addresses cosmetic surgery, dieting, domestic violence, and HIV infection.

A NURSING RESEARCH PROGRAM IN WOMEN'S HEALTH: clinical science \$

Ovulation:

PMS
Spinal cord injury
Oral contraceptives
Menstruation

Menstrual Cycle



Infertility:

Anorexia
Hypothalamic
Amenorrhea
PCO, obesity

Peri/Menopause:

Ethnicity & syx (SWAN, WHI)
Brain aging
Sleep
Hot flash mediators, Rxs
Bone Health
Testosterone patch Rx
Spinal cord injury, polio, diabetes
HIV

- \$ NIH: NINR, NICHD, NIA
- Easter Seals Foundation
 - FDA
 - Kimberly-Clark
 - Novo-Nordisk Pharm
 - Pfizer
 - Proctor & Gamble
 - VA
 - Wyeth
 - Trimel Pharma

A NURSING RESEARCH PROGRAM IN WOMEN'S HEALTH: health policy

Ovulation:

Public Health Campaigns:

- FDA safety standards for tampons
- Menstrual Cycle as a Vital Sign*

Research Organizations:

Society for Menstrual Cycle Research

Advocacy Organizations:

- Natl Women's Health Network
- OurBodies, Ourselves

Menstrual Cycle

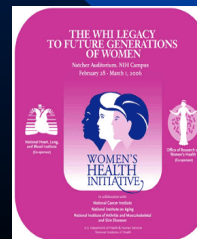
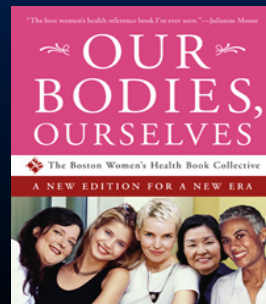
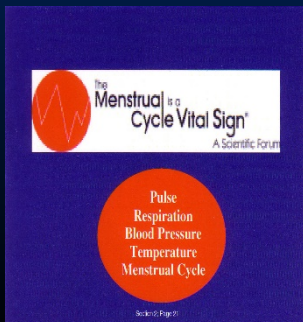
Infertility/Fertility

- NCC Infertility Nursing
- NIH Natl Center for Infertility Research
- AWHONN Testimony
- IOM Nurse Scholar in Bioethics of Reproduction
- Commentator, AJBioethics
- VA Women's Health

Menopause:

North Am Menopause Society guidelines:

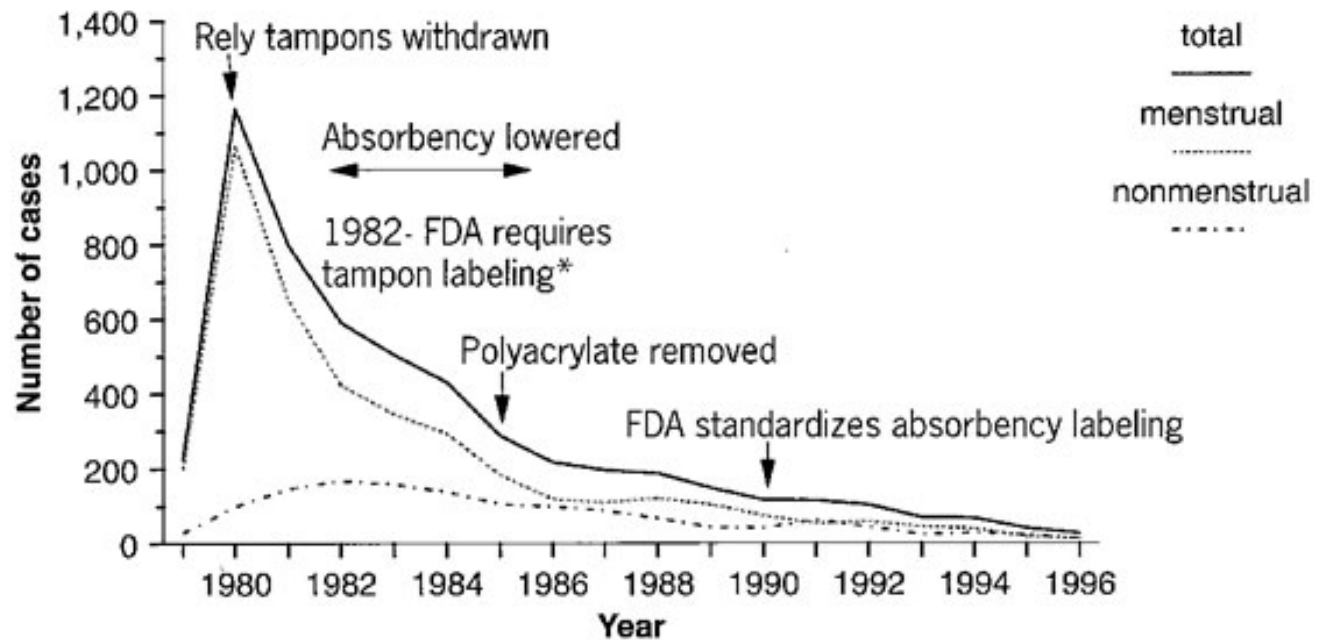
- HRT
- “bioidentical” hormones
- testosterone in women



TOXIC SHOCK SYNDROME

A 3-IN-1 MEDICAL REFERENCE

Medical Dictionary

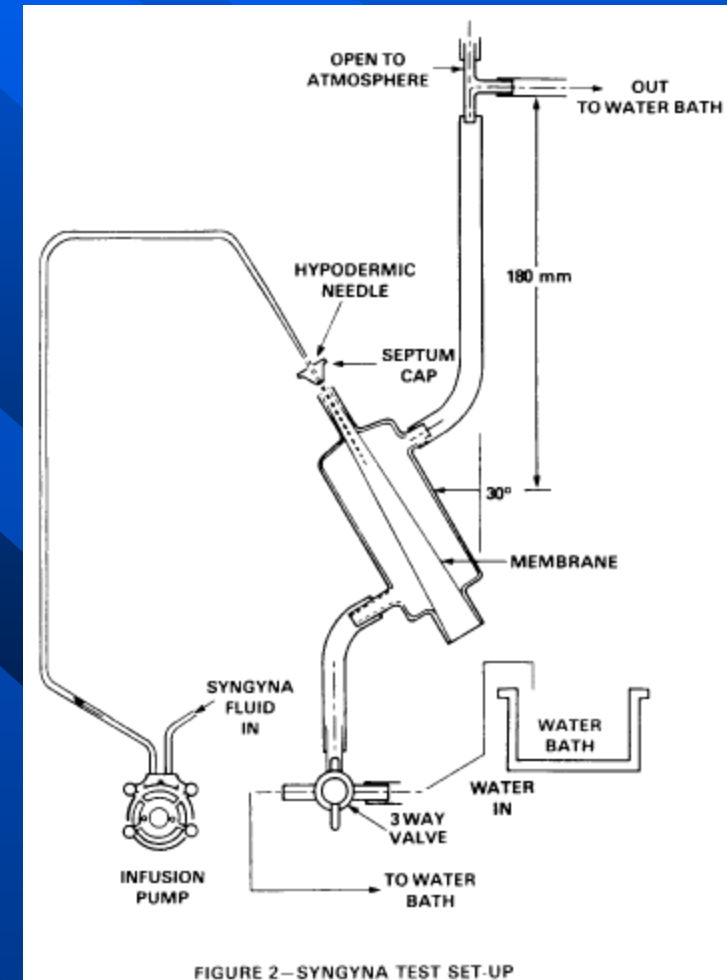
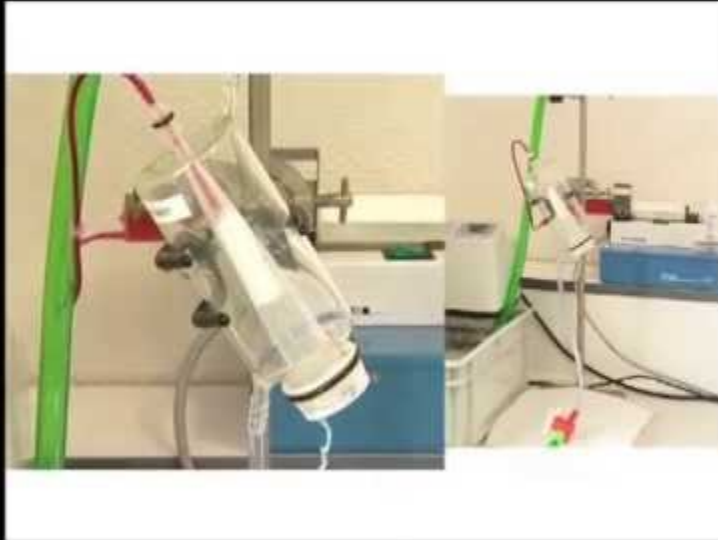


*FDA, Food and Drug Administration; includes definite and probable toxic shock syndrome cases



“Sally” Syngina test

<https://www.youtube.com/watch?v=KYXUQDzSg4o>



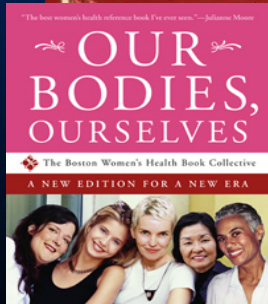
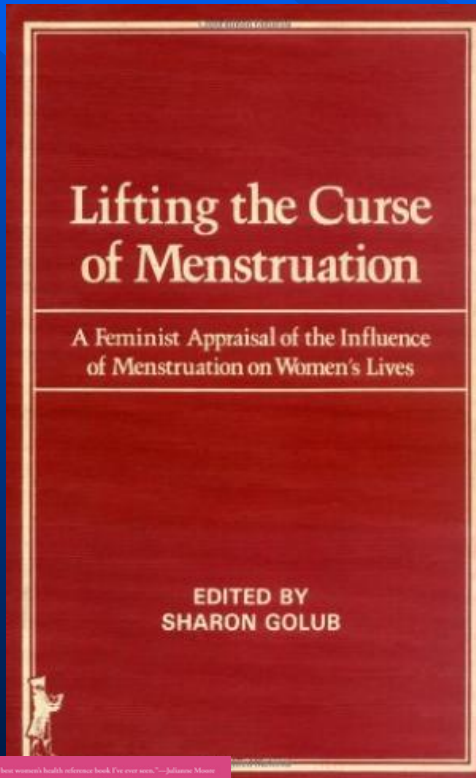
“...We disagree with Dr Wolfe on ignoring the terms "regular," "super," and "super plus." Not regulating these terms only increases confusion, especially among less-sophisticated users. All "regulars" should be less absorbent than all "supers," which should be less absorbent than all "super pluses." It is essential, as Dr Wolfe stated, that there be a statement next to the absorbency rating that encourages women to use lower absorbencies to reduce their risk of toxic shock syndrome...”

Rome, Wolhandler, Reame, *The Absorbency of Tampons. JAMA*, 1988.

A Well-positioned Letter to the Editor...



FDA finally standardizes absorbency, 1990!



Absorbency	Range
Regular	6 to 9 grams
Super	9 to 12 grams
Super Plus	12 to 15 grams

- Always select the lowest tampon absorbency to meet your needs.
- Remember to remove or change your tampon every 4 to 6 hours.

Your satisfaction is our highest priority. If you are not completely satisfied, we will gladly replace or refund your



Toxic shock syndrome, tampons and laboratory standard-setting

Sharra Vostral PhD

Associate professor, Department of History, Purdue University
CMAJ 2017 May 23;189:E726-8.

....” Analyzing the intersection of menstruation, tampons, laboratory practices and policy-making during the 1980s highlights the important health outcomes related to standard setting. The intuitive understanding of Rome and Reame to use blood (vs “blue goo”) defied standard laboratory procedure..... Saline test fluid and the syngyna apparatus were not only inadequate for their stated purposes of representing women’s bodies and fluids, but benefited industrial and corporate needs. ...This case study highlights the importance of...the materiality of women’s bodies in the standard setting process.”

CMAJ Podcasts: author interview at

<https://soundcloud.com/cmajpodcasts/161479-medsoc>

COMING SOON: Toxic Shock Syndrome: A History, from NYU press, 2018

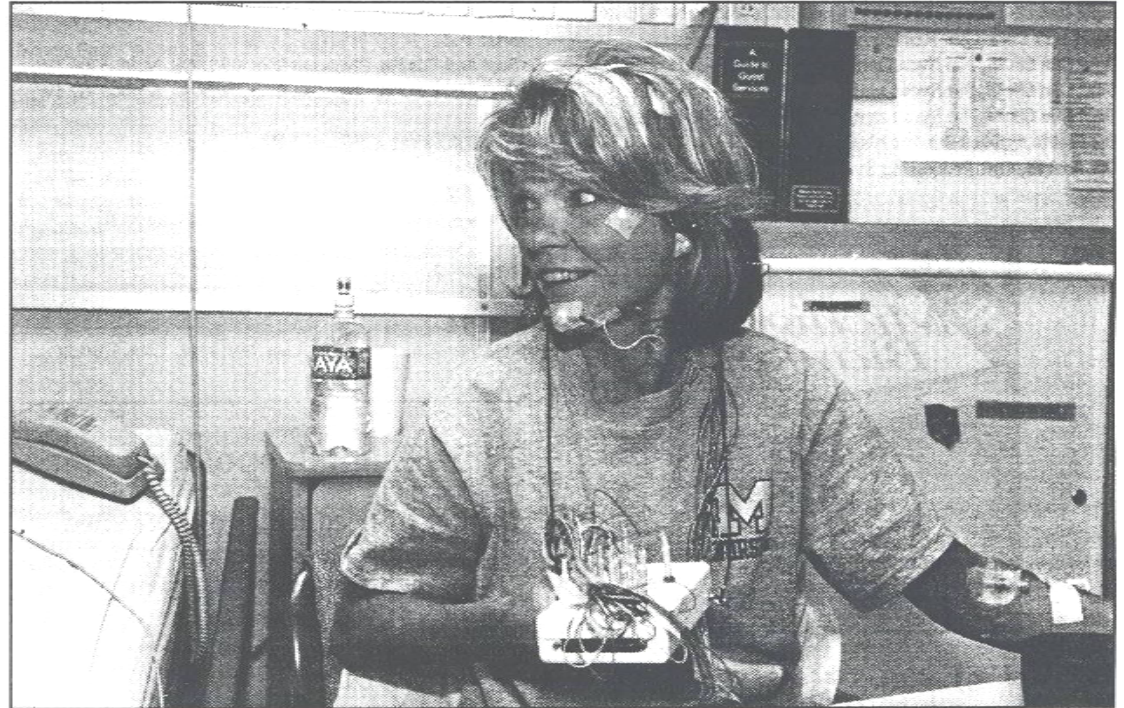
Ethical Challenges in Clinical Research: when the Researcher is the Subject

Researcher tests protocols on self first

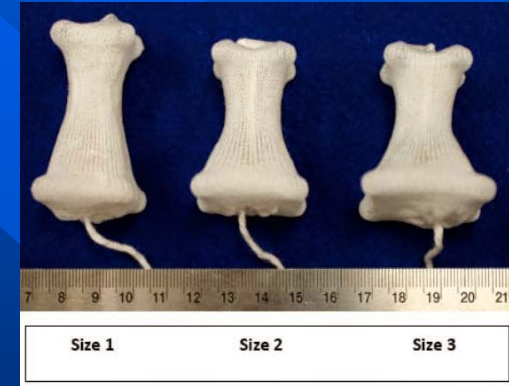
Nancy Reame is conducting research to test the theory that menopause starts in the brain, rather than in the ovary where the gradual loss of eggs leads to a fall in estrogen. A professor of nursing and a research scientist in the Reproductive Sciences Program, Reame believes in testing out the protocol she expects her volunteers to undergo, and recently spent a night in the Sleep Study Room at University Hospital. In addition to EEG monitoring during the night, Reame had blood drawn from an IV every 10 minutes for a 24-hour period.

Some scientists believe that aging changes in the hypothalamus, the part of the brain that controls the hormone rhythms of the menstrual cycle, may actually trigger the acceleration of oocyte depletion that begins after age 35 and results in a dramatic decline in fertility. Reame's work will compare the 24-hour pattern of secretion of pituitary hormones known to show distinct diurnal rhythms in young, ovulatory women with those in women over age 40 with and without menstrual cycles.

Reame's research is supported by a \$1 million, four-year National Institute on Aging grant to the School of Nursing and Medical School. Photo by Bob Kalmbach

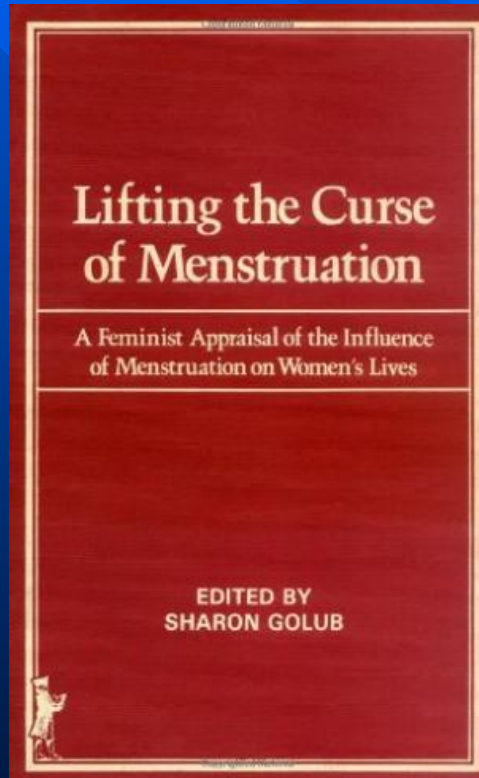


We've come a long way (baby)..or have we??



What is Poise Impressa? It is a non-absorbent device that is inserted like a tampon which expands and puts pressure on the urethra to help leaks from occurring in the first place.

2017: We've come a long way (baby)..or have we??



The Washington Post

'How do I know my tampons are safe?': More women push for detailed labels on feminine care products

By **Michael Alison Chandler**

June 20, 2017

Millennials: Rethinking the Tampon



LOLA, “the first 100% cotton, direct-to-consumer, customized tampon-subscription service”

www8.gsb.columbia.edu/articles/columbi-business/innovation-women-women-period

Google images, June 14, 2017

Millenials and Feminine Care: passing the baton to the next generation

“Nobody has really thought about tampons before in an objective way. Women (have) never been given an opportunity – or never thought they wanted an opportunity – to talk about their periods.”

Jordana Kier, Columbia Univ , 14,
co-founder of *LOLA*





Making Menstruation Matter

Society for Menstrual Cycle Research
20th Biennial Conference
New York City

June 8, 2012



“The Menstrual Cycle is a Vital Sign®”

Scientific Session Agenda

Date: September 21, 2004
Time: 8:30 AM – 2:30 PM
Location: The New York Academy of Sciences

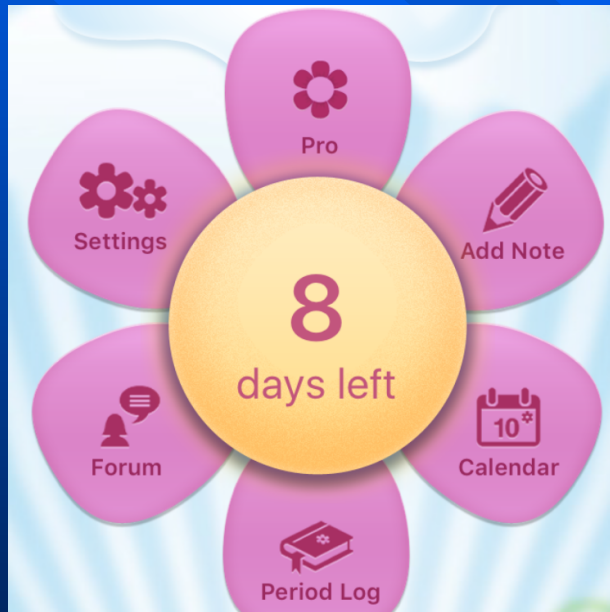
*co-sponsored by the **Society for Menstrual Cycle Research** & Rachel's Well, Inc.
supported by an unrestricted educational grant
from Procter & Gamble*


Featuring: Jane Brody, health columnist, *The New York Times*

Press Release: *Leading Health Experts Define Menstrual Cycle as Critical Indicator of Women's Overall Health*



Period Trackers



 **HHS Public Access**
Author manuscript
Proc SIGCHI Conf Hum Factor Comput Syst. Author manuscript; available in PMC 2017 May 15.

Published in final edited form as:
Proc SIGCHI Conf Hum Factor Comput Syst. 2017 May 2; 2017: 6876–6888. doi: 10.1145/3025453.3025635.

Examining Menstrual Tracking to Inform the Design of Personal Informatics Tools

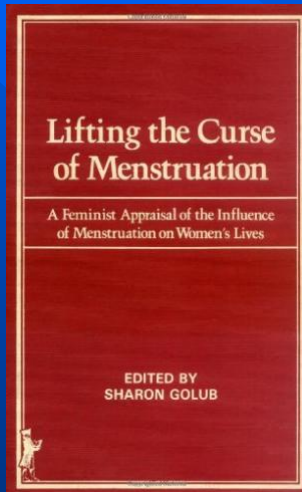
Daniel A. Epstein, Nicole B. Lee^{*}, Jennifer H. Kang, Elena Agapie, Jessica Schroeder, Laura R. Pina, James Fogarty, Julie A. Kientz, and Sean A. Munson
DUB Group, University of Washington

Abstract

We consider why and how women track their menstrual cycles, examining their experiences to uncover design opportunities and extend the field's understanding of personal informatics tools. To understand menstrual cycle tracking practices, we collected and analyzed data from three sources: 2,000 reviews of popular menstrual tracking apps, a survey of 687 people, and follow-up interviews with 12 survey respondents. We find that women track their menstrual cycle for varied reasons that include remembering and predicting their period as well as informing conversations with healthcare providers. Participants described six methods of tracking their menstrual cycles, including use of technology, awareness of their premenstrual physiological states, and simply remembering. Although women find apps and calendars helpful, these methods are ineffective when predictions of future menstrual cycles are inaccurate. Designs can create feelings of exclusion for gender and sexual minorities. Existing apps also generally fail to consider life stages that women experience, including young adulthood, pregnancy, and menopause. Our findings encourage expanding the field's conceptions of personal informatics.

Fig 3. Period tracking apps often employ feminine, flowery pink aesthetics. From: Epstein Lee Kang et al, 2017)

We've come a long way (baby)..or have we??



BLOODY PAIN
Period pain can be
“almost as bad as a
heart attack.” Why
aren’t we researching
how to treat it?
Olivia Goldhill, *Quartz*,
Feb 15, 2016

**PAID “MENSTRUAL
LEAVES” IN CHINA?**
The Period Paradox
By Elizabeth Yuko
New York Times, 2017

A word from our sponsor...



CRAMPS AWAY™

Stop Cramps INSTANTLY!

Human Reproduction, Vol.28, No.11 pp.2958-2965, 2013
Advanced Access publication on August 6, 2013 doi:10.1093/humrep/det324

human
reproduction

ORIGINAL ARTICLE Gynaecology

Sildenafil citrate in the treatment of pain in primary dysmenorrhea: a randomized controlled trial[†]

R. Dmitrovic^{1,*}, A.R. Kunselman², and R. S. Legro²

¹BetaPlus Center for Reproductive Medicine, Avenija Vojislava Holjevac 23, 10000 Zagreb, Croatia and ²Departments of Ob/Gyn and Public Health Sciences, Penn State University College of Medicine, Hershey Medical Center, 500 University Drive, Hershey, PA 17033, USA

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Submitted on April 24, 2013; resubmitted on June 16, 2013; accepted on July 12, 2013

Google images, June 20, 2017

Periods are ridiculous. I shouldn't be punished for not being pregnant.



HELP MENSTRUAL
CRAMPS

Marijuana Fill
Tampons!?



TheyDoExist





Black Cohosh Treatment in Postmenopausal Women: Evidence for Non-Estrogenic, Opioidergic Neuromodulation



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Vasantha Padmanabhan, PhD^{2,5}

School of Nursing, Columbia University¹,

Depts of Obstetrics-Gynecology², Psychiatry⁴, and Pediatrics⁵

Schools of Medicine and Nursing³, The University of Michigan



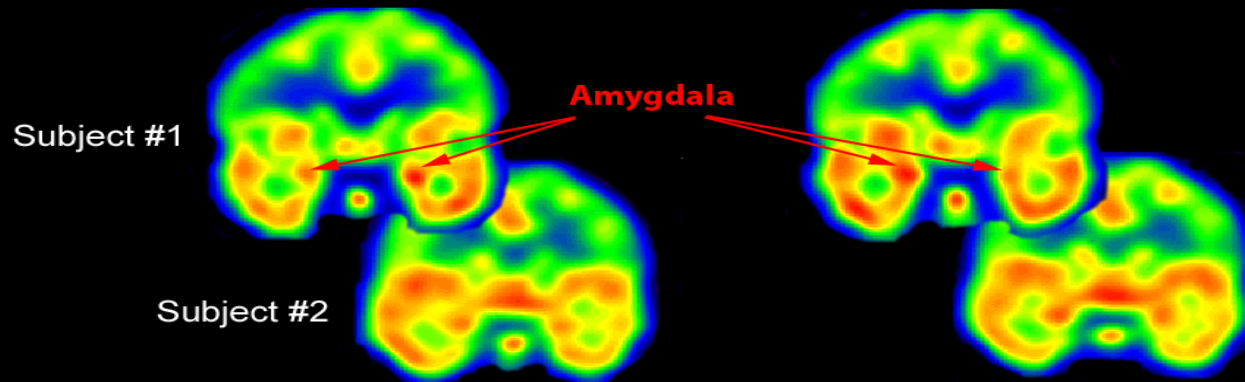
North Am Men Soc, LateBreaking Paper, 2008

Reame et al, Menopause 2008

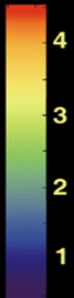
Change in μ -Opioid Receptor Binding After Treatment with Black Cohosh

Before Treatment

After Treatment



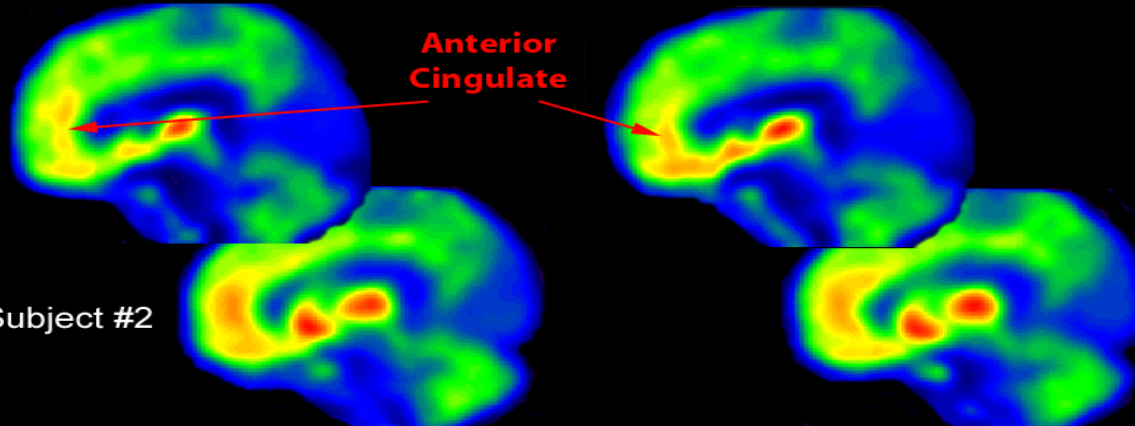
DVR values



Subject #1

Subject #2

Anterior
Cingulate



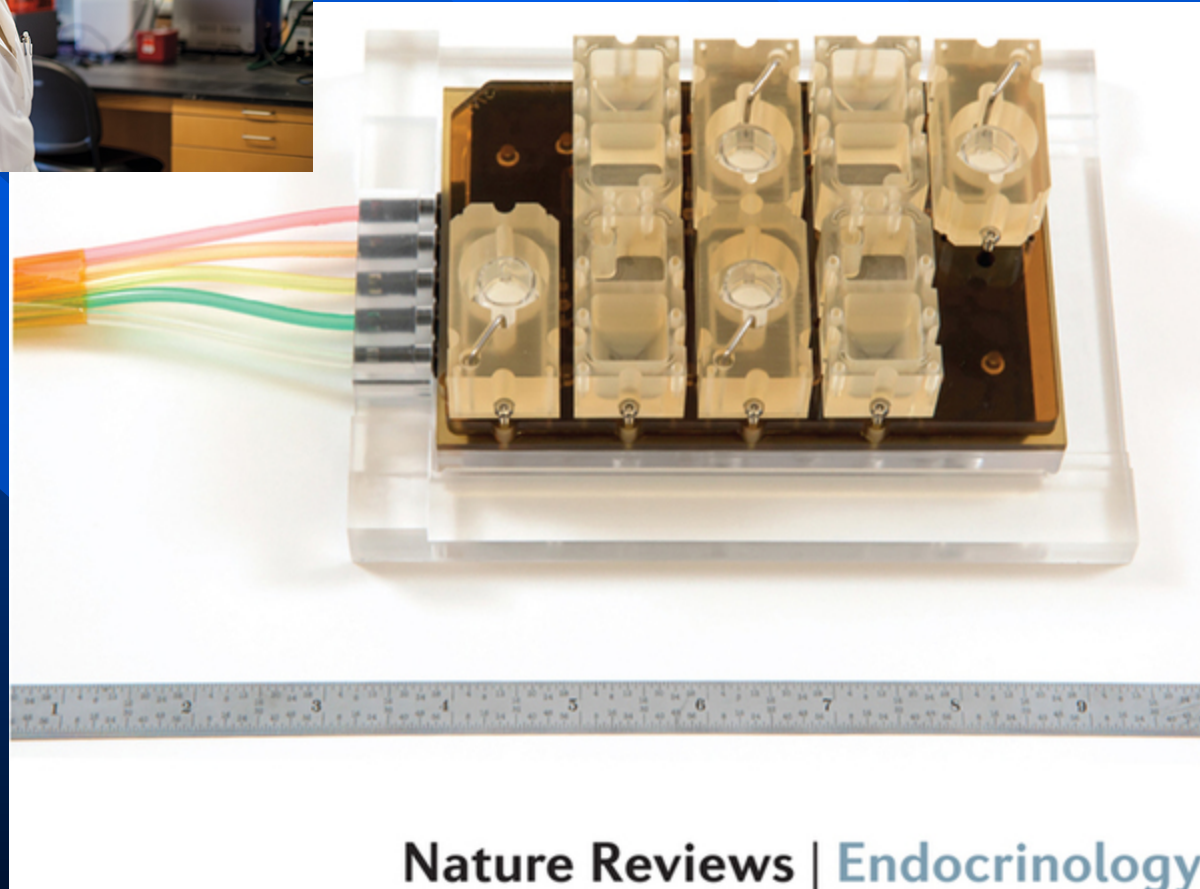
SMCR: about us

“We are researchers in the social sciences, the natural sciences and the humanities, health care providers, policy makers, health activists, artists and students from a wide range of fields with interests in the role of menstrual and ovulatory health across the life span”

<http://www.menstruationresearch.org/2012/07/11/pmdd-no-news-is-news-for-the-apa/>



Figure 1 *In vitro* female reproductive tract model



“EVATAR”

Ingber, D. E. *et al.* (2017) Cycling through the menstrual cycle — an out- of- body experience
Nat. Rev. Endocrinol. doi:10.1038/nrendo.2017.65

Seriously??

SCIENTIFIC
AMERICAN

nature

Biology

First Rodent Found with a Humanlike Menstrual Cycle

The spiny mouse could one day aid studies of women's reproductive problems

•By [Anna Nowogrodzki](#), [Nature magazine](#) on June 13, 2016



SCIENCE IS NEVER DONE IN A VACCUUM!

WOMEN'S MARCH, Jan 21, 2017



NASTY
WOMEN
MARCH FOR
SCIENCE
MARCH FOR SCIENCE 2017



MARCH FOR SCIENCE

EARTH DAY

APRIL 22, 2017

#marchforscience





American Academy of Nursing on Policy

Position statement: Political interference in sexual and reproductive health research and health professional education¹



Diana Taylor, PhD, RNP, FAAN, Ellen F. Olshansky, PhD, RN, WHNP-BC, FAAN,
Nancy Fugate Woods, PhD, RN, FAAN,
Versie Johnson-Mallard, PhD, ARNP, BC, FAANP, FAAN,
Barbara J. Safriet, LLM, JD, FAAN, Teresa Hagan, PhD, RN
Women's Health Expert Panel

Political interference in sexual and reproductive health (SRH) research and health professional education threatens the health of women and men. The American Academy of Nursing (academy) strongly supports actions to prevent political interference by supporting academic freedom principles and policies in institutions of higher education generally and in those offering instruction in nursing particularly.

Background

- Participating in an amicus brief to the U.S. Supreme Court opposing a deceptive Texas law requiring medically unnecessary restrictions on clinical practice: Read the [amicus brief](#) of the American Nurses Association/academy and the academy's [press release](#) from June 27, 2016 applauding the Supreme Court of the United States decision to reject Texas HB2.
- Speaking out about how political interference with SRH care harms women: See article from the academy's President Berkowitz, "[Examining What's at Stake: The Supreme Court, Nurses and Abortion Care Provision](#)" published in Huffington Post Health