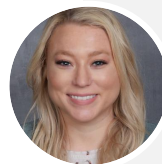# DIME
DIGITAL MEDICINE SOCIETY

Women-Centric Digital Measurements and Monitoring: Tales from the Lived Experience with Connected Health

Wednesday, May 3, 2023 at 12pm ET

Emily Lewis
Digital Transformation Lead, Neurology
UCB Biopharma

Brinnae Bent, PhD
Managing Partner
Edge Analytics

Erkuden Goikoetxea, PhD
Medical Device Innovation Lead
UCB Pharma SA

Mansi Gupta
Founder
Unconform

Jeanne Chung
Founder
Mighty Menopause

Lucy Cesnakova, MS (Moderator)
Program Lead
Digital Medicine Society

But first, housekeeping

- Please note: **today's session is being recorded**
  - Slides and recording will be available on DiMe's webinar page after the session
- To ask a question for discussion during live Q&A, please either:
  - **'Raise your hand'** in the Reactions and the moderator will unmute you to ask your question live, or
  - **Type your question** into the chat box

*** *Participants are not permitted to transcribe this webinar, violators will be removed from the session.*

Sharing our Lived Experiences

- The reality is, our existing digital tools are **not inclusive** of pregnant or postpartum women
- Many patient-facing tools simply **omit** functionality that women require for basic health and wellness insights during different life stages (each with unique needs)
- Examples:
  - **Brinnae** - Using a wearable ring to detect pregnancy, prenatal tracking in apps
  - **Erkuden** - Physical activity and sleep monitoring during and after pregnancy
  - **Emily** - Using a CGM in gestational diabetes

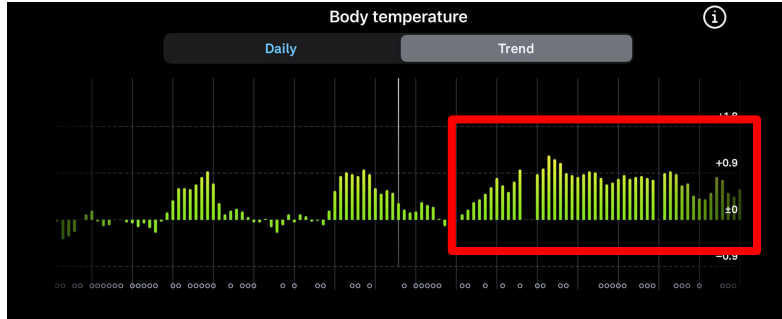# What the science says: Temperature can reveal a lot!

Daily Body Temperature:

"Nightly temperature maxima rose rapidly in early pregnancy and reached uniquely high values an average of 5.5 days after self-reported conceptive sex."
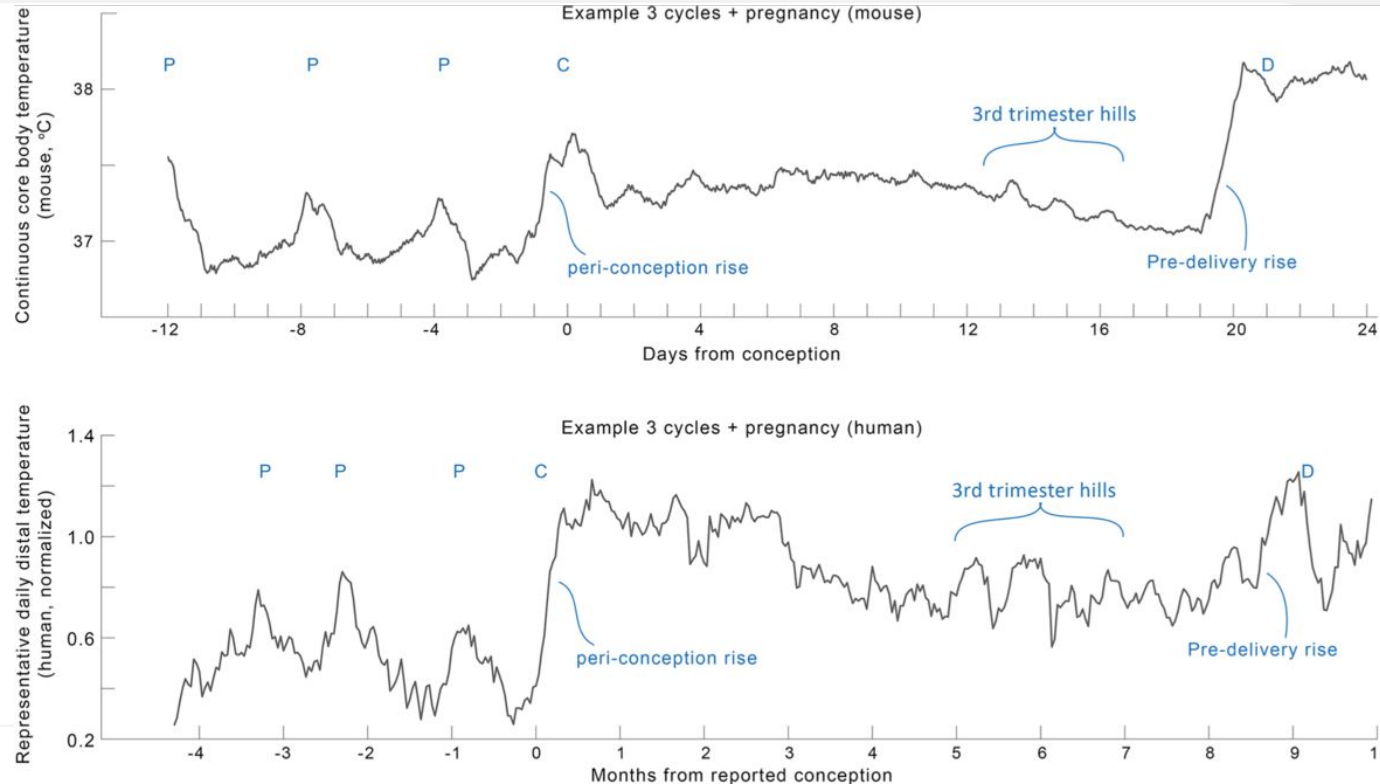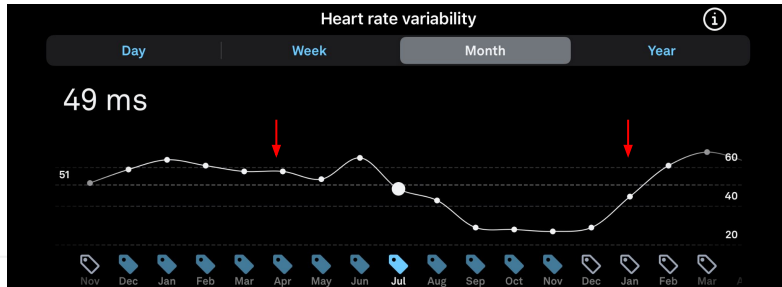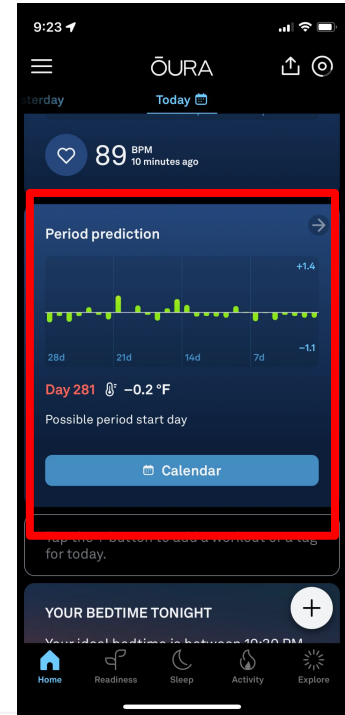
Case study: Brinnae's pregnancy via Oura Ring

Pregnancy Detected:

Interesting data but no tools for tracking:

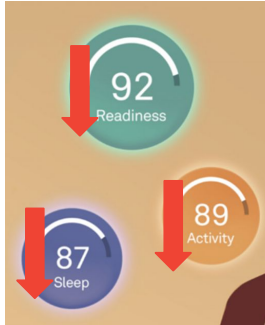Lack of prenatal tracking (or a way to let the wearable know you are pregnant):

Case study: Erkuden's Physical activity and sleep monitoring

Pregnancy effects detected by Oura ring:

- **Temperature** increase
- **HRV** decrease
- Decrease **sleep** quality
- Decreased **activity** levels

Translation into Oura scores

Challenges during pregnancy:

- Score **calculation is not fit-for-purpose** for pregnancy
- Score thresholds **do not reflect pregnancy** status
- Feedback is **not useful for pregnant** people
- Visualizing low scores may **impact mental health**

Challenges after pregnancy:

- Physiology is back to normal but **sleep and activity are still very much disrupted**
- Low score visualization may have a **negative impact** in such a vulnerable period

Case Study: Emily's CGM Experience

Per the ADA, blood glucose target ranges are **_INDIVIDUALIZED_** based on:

- Duration of diabetes
- Age
- Diabetes complications
- Activity level
- Stress level
- Other conditions a person may have (e.g. cardiovascular disease)

Case Study: Emily's CGM Experience

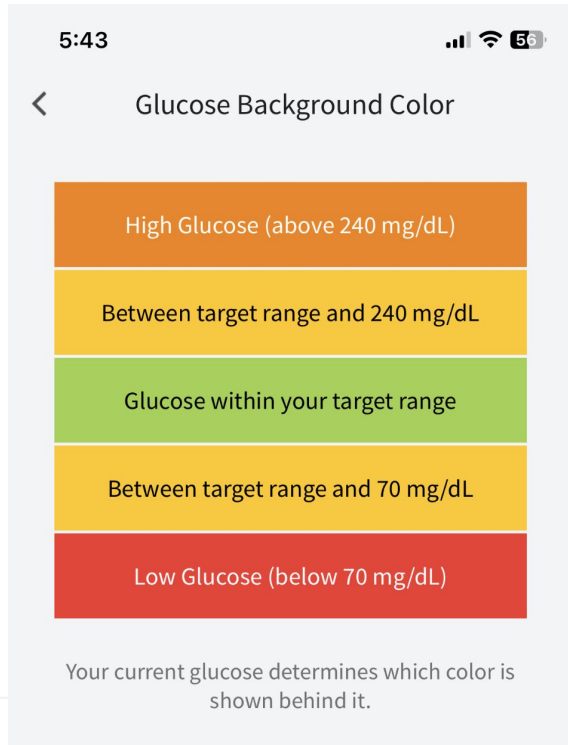Most women with GD don't know that their recommended glucose ranges are actually ***much more strict***!

Reference Ranges for Glucose		
Timing	**DM Types I and II**	**Gestational Diabetes**
Before Meals	80-130 mg/dl	95 mg/dl or less
2 Hrs After Meal	180 mg/dl or less	120 mg/dl or less

**Glucose ranges per the American Diabetes Association

DiME

Case Study: Emily's CGM Experience

Glucose Background Color

5:43

High Glucose (above 240 mg/dL)

Between target range and 240 mg/dL

Glucose within your target range

Between target range and 70 mg/dL

Low Glucose (below 70 mg/dL)

Your current glucose determines which color is shown behind it.
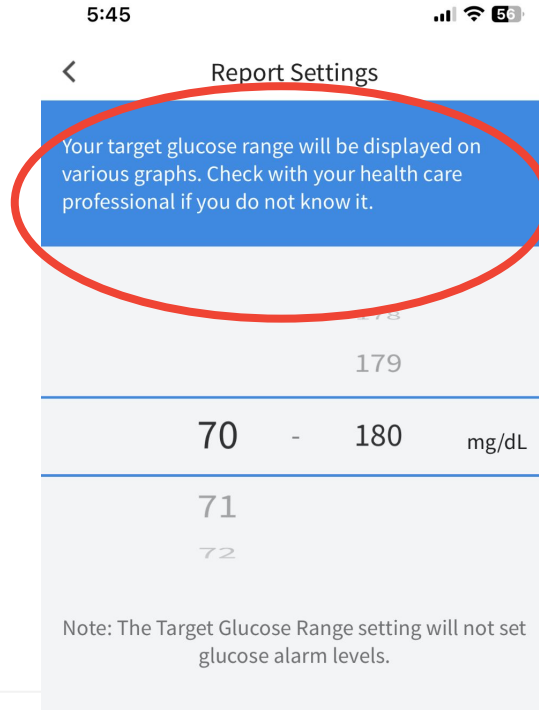
Without manual programming, the CGM device *automatically defaults* to average glucose ranges for DM types I and II

Case Study: Emily's CGM Experience

The set up process in the companion app *does not ask* which type of diabetes you have (or *anything* about the individual)

5:45

Report Settings

Your target glucose range will be displayed on various graphs. Check with your health care professional if you do not know it.

179

70 - 180 mg/dL

71

72

Note: The Target Glucose Range setting will not set glucose alarm levels.

The fine print:

It *relies on the user* to check with their HCP to get the range and *manually* adjust the app settings

Case Study: Emily's CGM Experience

As GD is "temporary" (i.e. should resolve after giving birth) ***most women do not opt for a "closed loop" CGM-insulin pump system*** which automatically handles insulin dosing.

Women with GD are dosing insulin on their own using insulin pens. Without the proper flagging (e.g. **green**, **yellow**, **red**) and alerts, ***self-dosing decisions could be made erroneously***.

TLDR: We need to make these technologies ***fool proof,*** starting with better platform onboarding.

Ways to > Inclusivity

- **Conduct User Research with Diverse User Groups**
  - Gather input from women of various ages, ethnicities, socioeconomic backgrounds, and abilities
  - Test and iterate with a diverse user base
- **Address Women's Unique Needs**
  - Consider the specific needs of women (health, safety, privacy, social wellbeing) in the context of the digital tool being designed
- **Foster a Diverse Design Team**
  - Encourage diversity within the design team itself, bringing in a wider range of perspectives and experiences to the design process
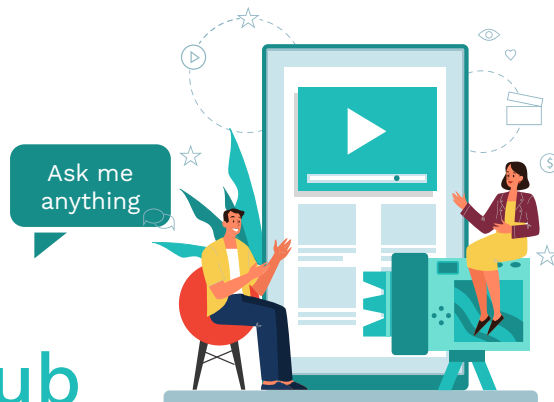
Best Practices

- Tailor product design to a **BROAD RANGE** of users
- Allow settings that are adjustable (e.g. glucose ranges)
- Offer customizable notification settings
- **Avoid Gender Stereotypes**
  - Be cautious of reinforcing gender stereotypes through design choices such as color schemes, iconography, and imagery
  - Opt for neutral or inclusive visuals that are welcoming to users of all genders
- **Use Inclusive Language**
  - Avoid gender-specific terms, and instead use gender-neutral terms

In Summary

- Designing digital tools requires a thoughtful, intentional approach to including women's unique needs, preferences, and experiences
- Today we have tools to make these decisions during the development of new digital health tools, that will address these specific requirements.

DiME

Virtual Journal club

Ask me anything

Defining digital measurement of scratching during sleep, or "Nocturnal Scratch": A review of the Literature (JMIR)

Thursday, May 25th, 2023 | 12pm ET

Doina Sirbu
Medical Device Innovation Lead
UCB

Carrie Northcott, PhD
Senior Director, Digital Sciences & Translational Imaging
Pfizer

Sylvain Zorman, PhD
Director of Digital Health Sciences
ActiGRaph

Will Ke Wang
PhD Candidate
Duke University

Lucy Cesnakova, MS
Program Lead
Digital Medicine Society (Moderator)

THANK YOU