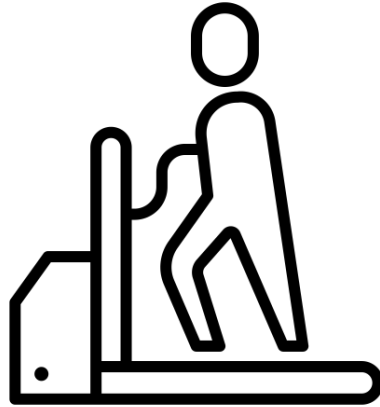
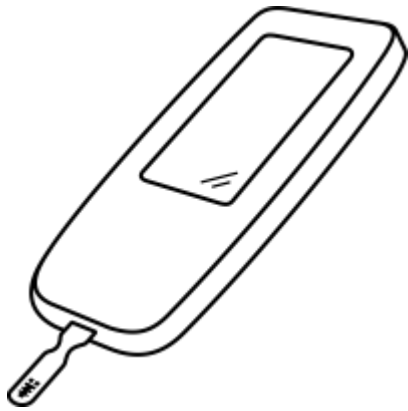


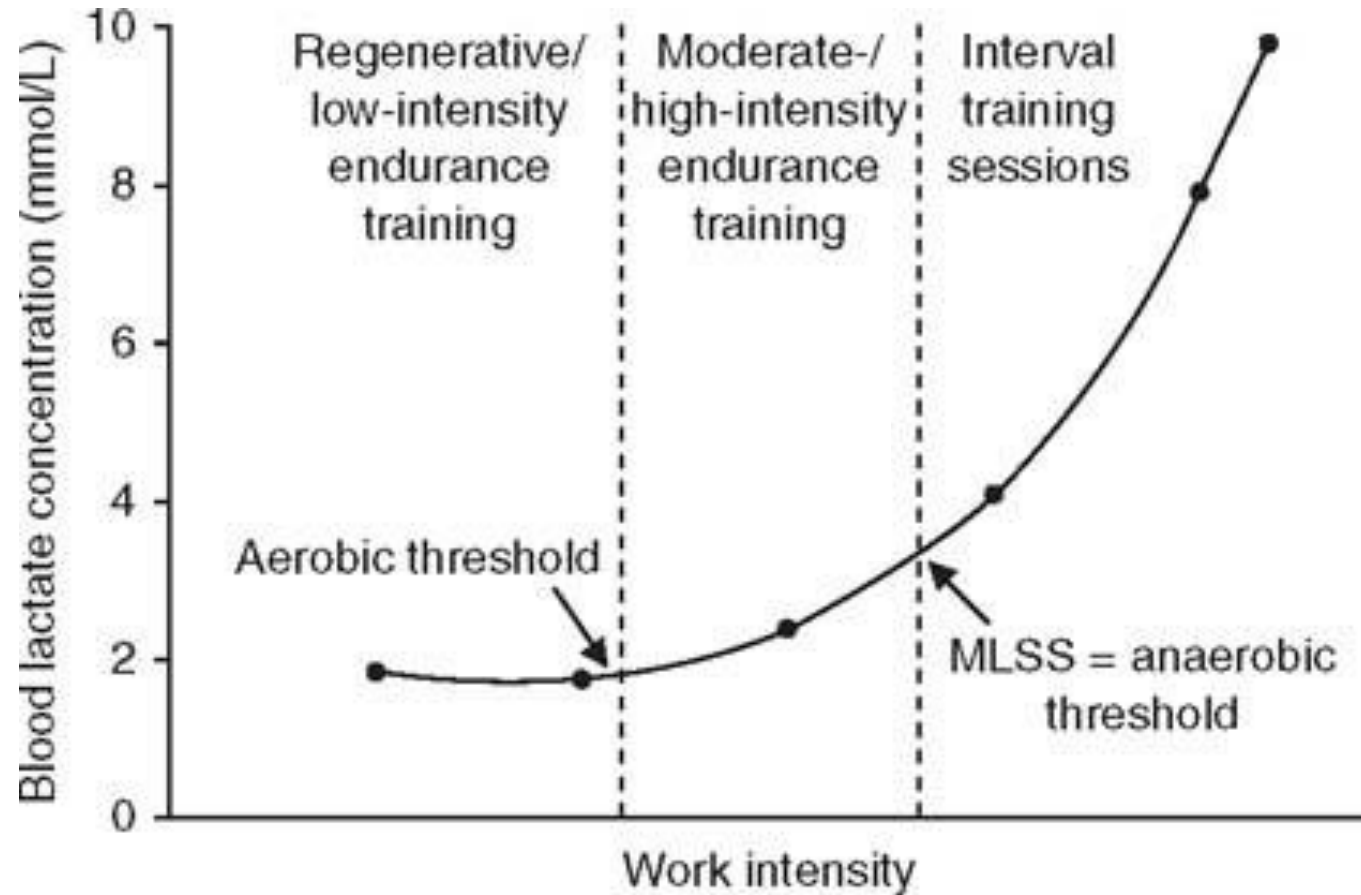
Will wearable sweat lactate sensors be the next big thing in cycling?

Kevin Van Hoovels

Blood lactate in sports

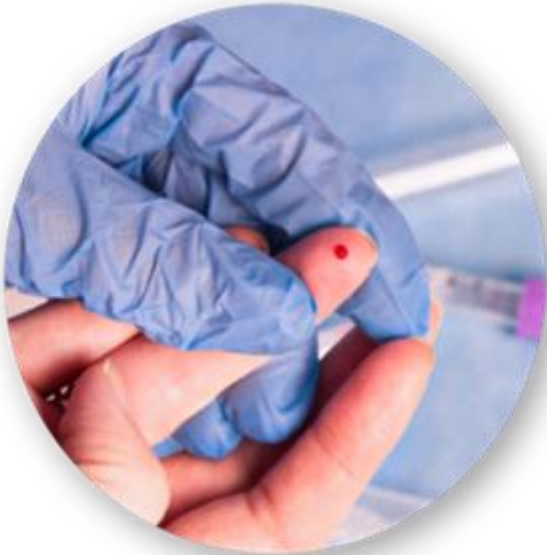


Blood lactate in sports



Faude et al. 2009

Blood lactate in sports



Painful needles



Exercise interrupted



Snapshot of performance

Sweat collection in sports

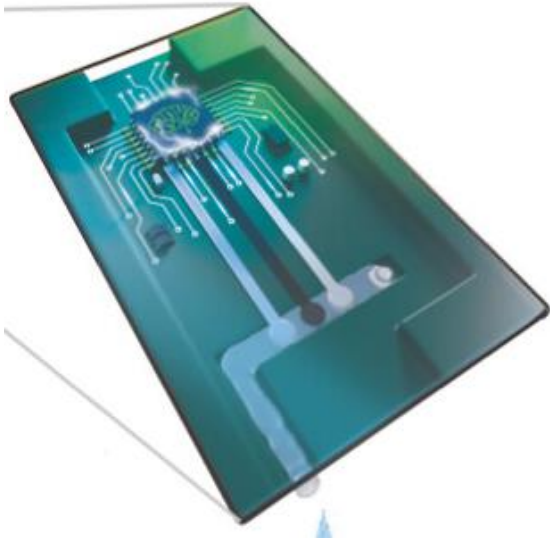


Shirreffs et al. 1997

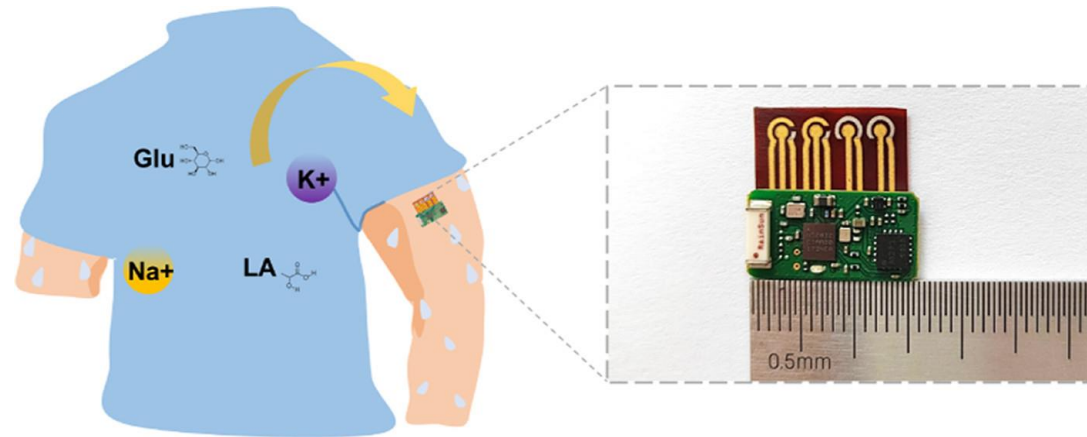


Science & Cycling 2023

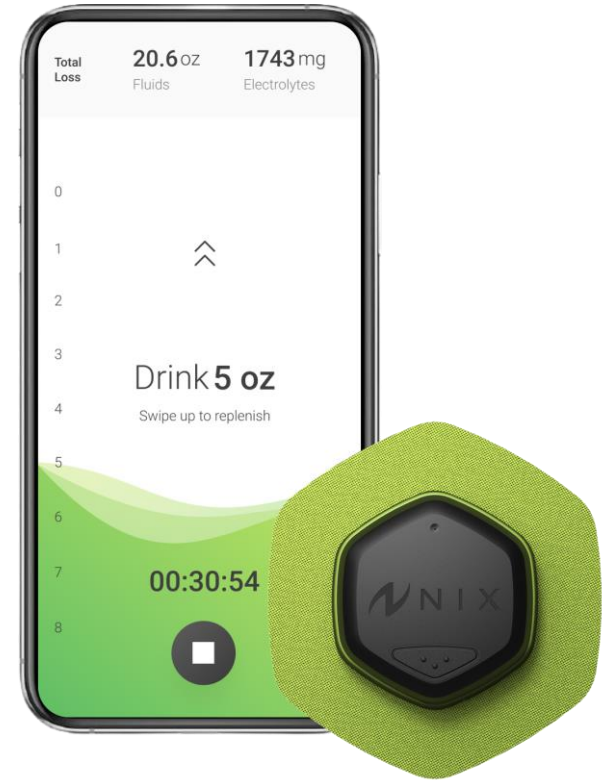
Wearable sweat sensors



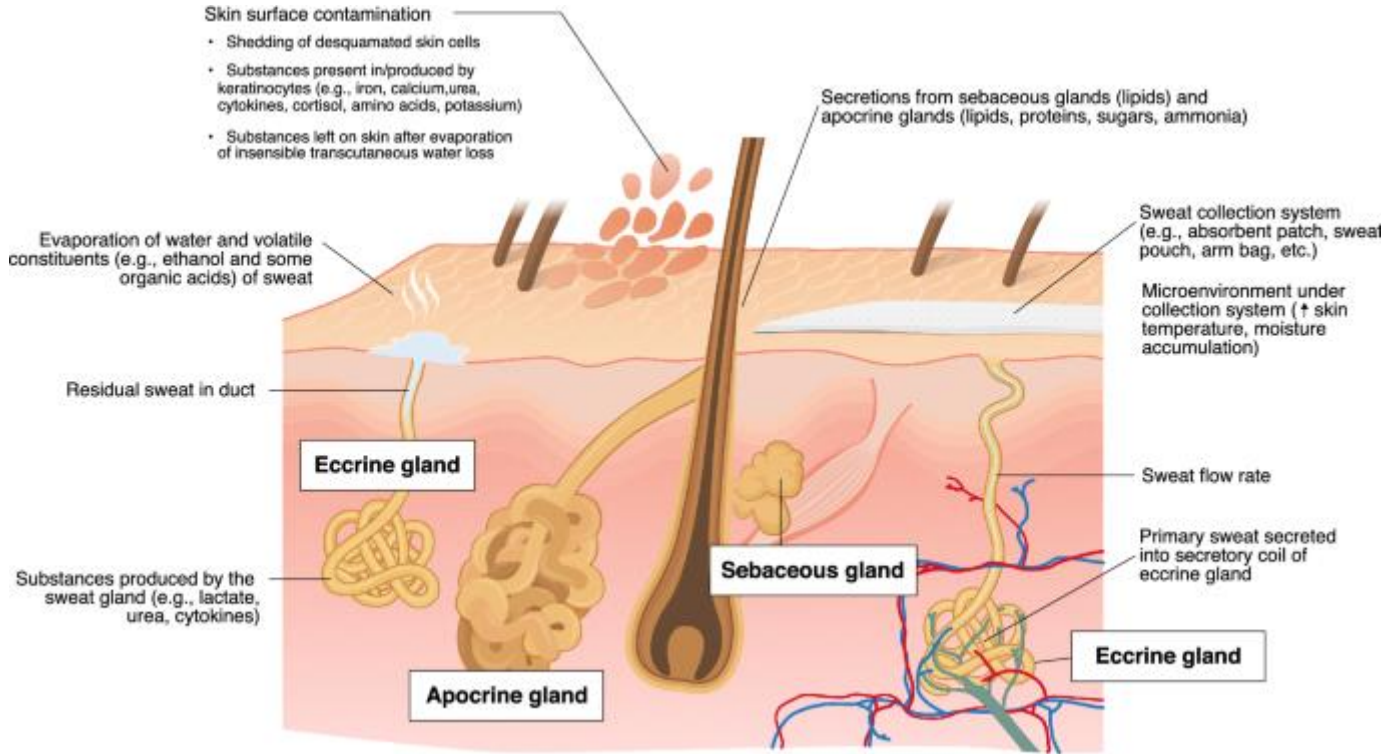
Xuan et al. 2023



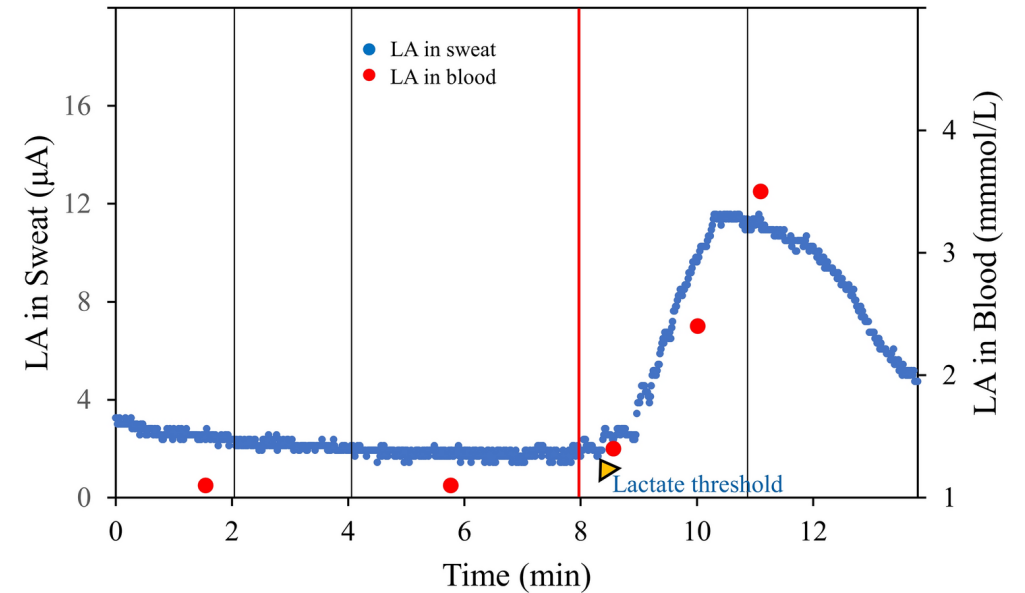
Wang et al. 2022



Sweat lactate



Baker et al. 2019

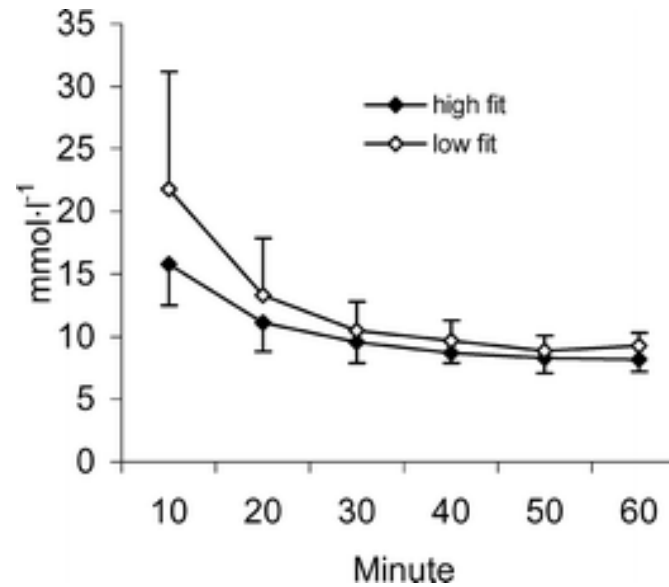


Seki et al. 2021

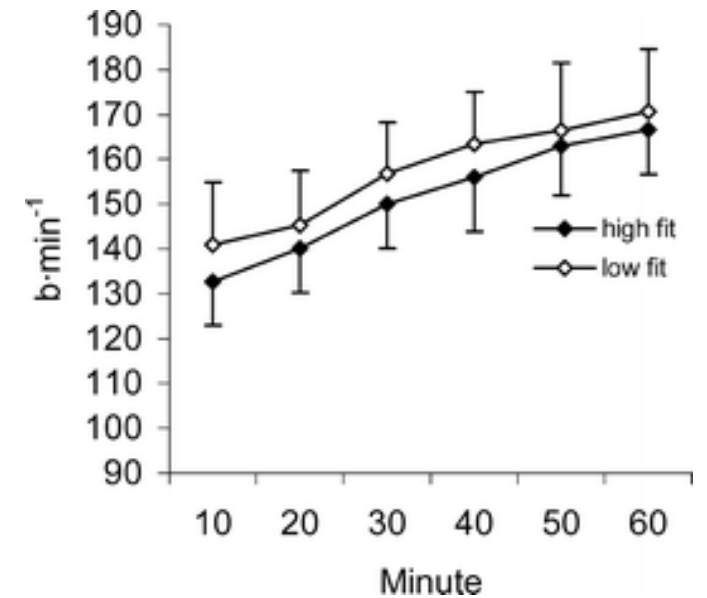
Sweat lactate and exercise



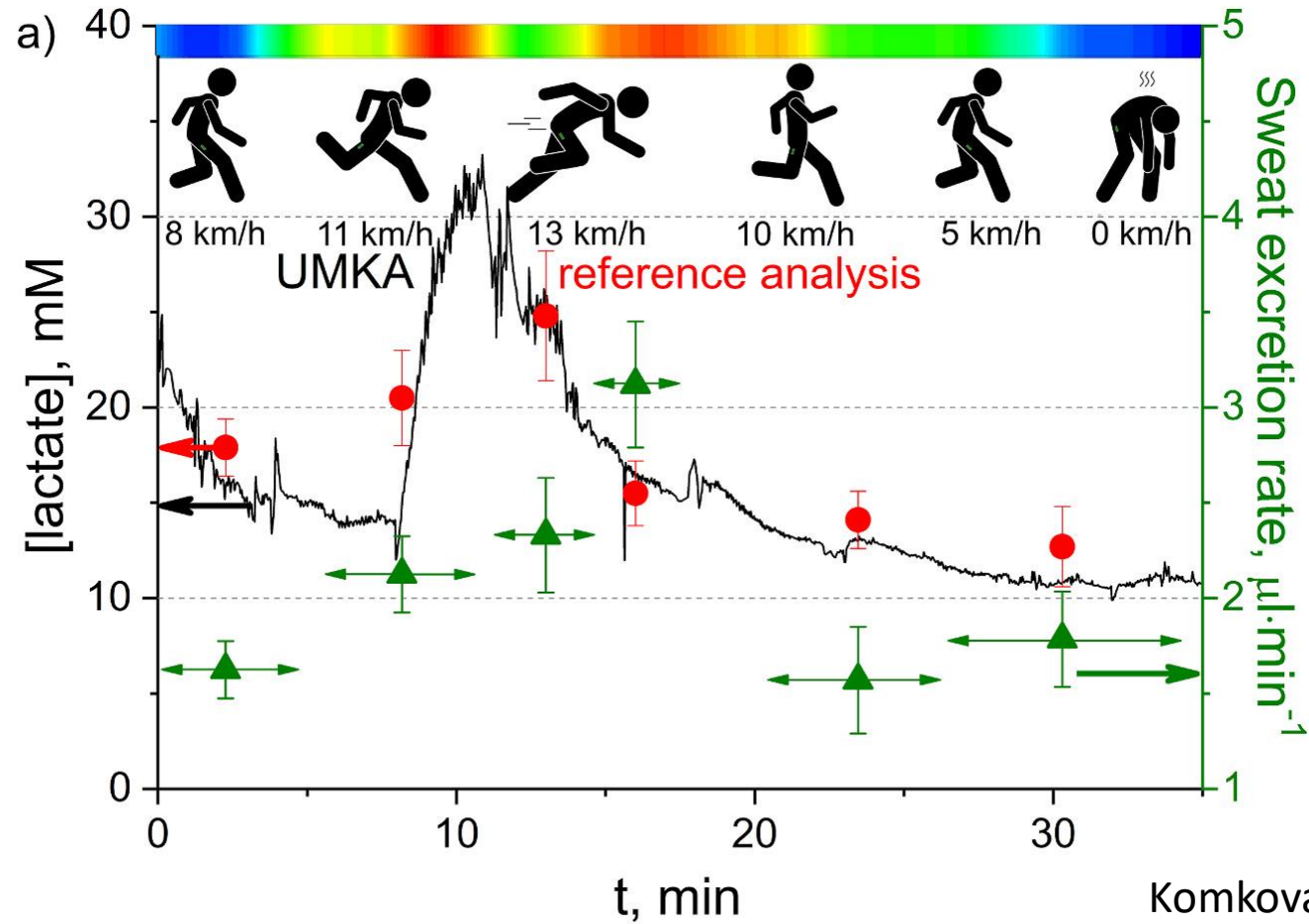
Kaya et al. 2019



Green et al. 2004

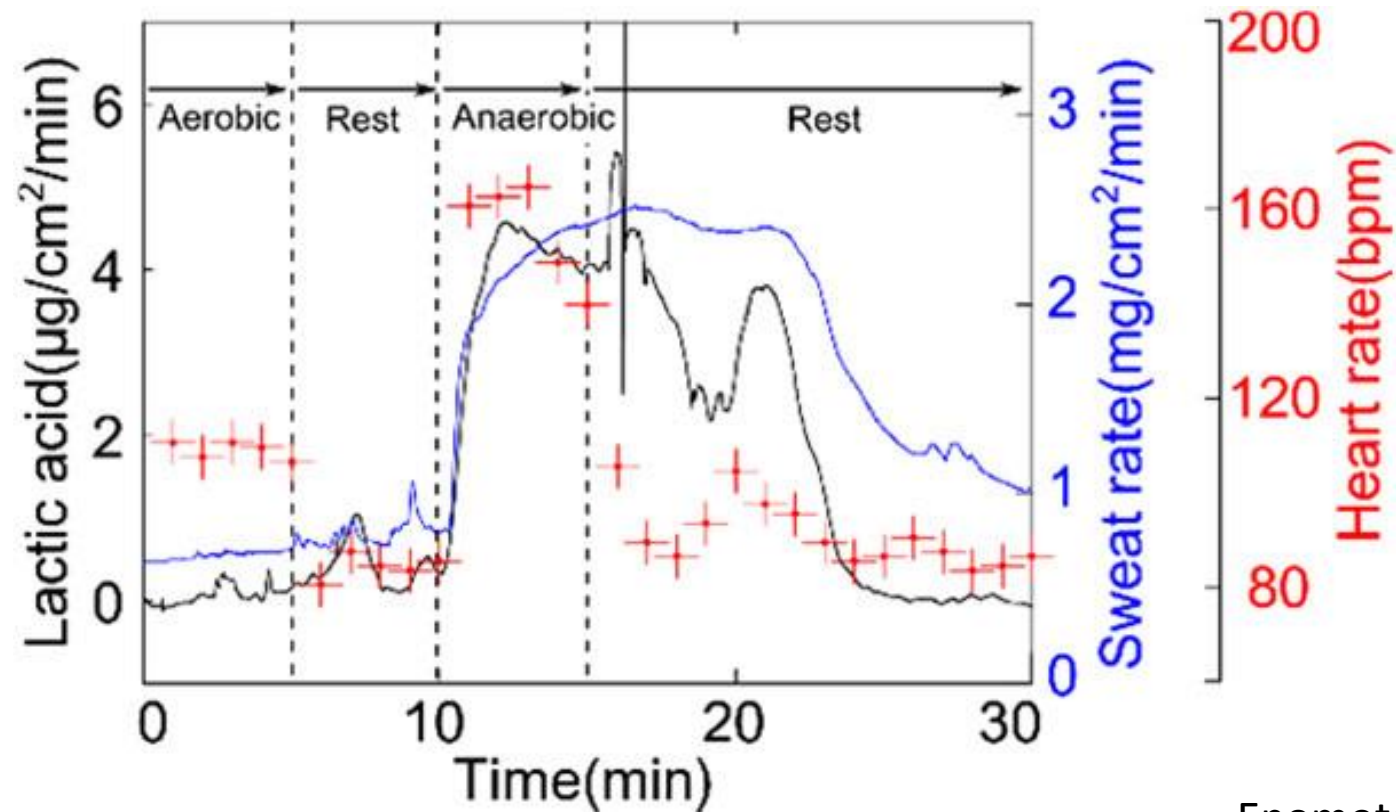


Sweat lactate and exercise



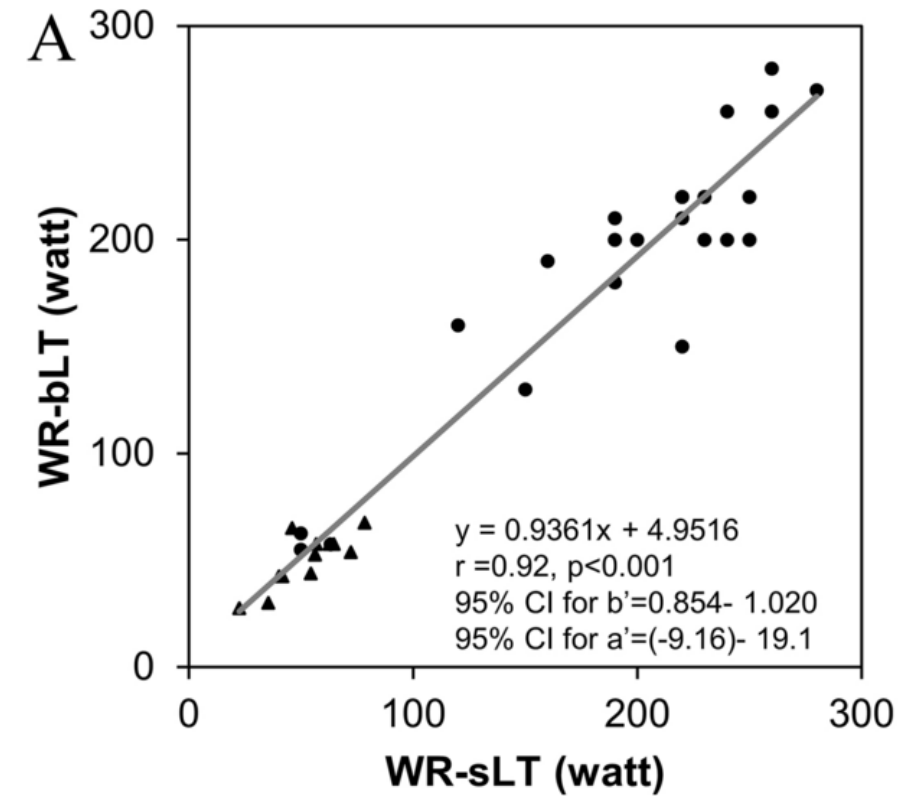
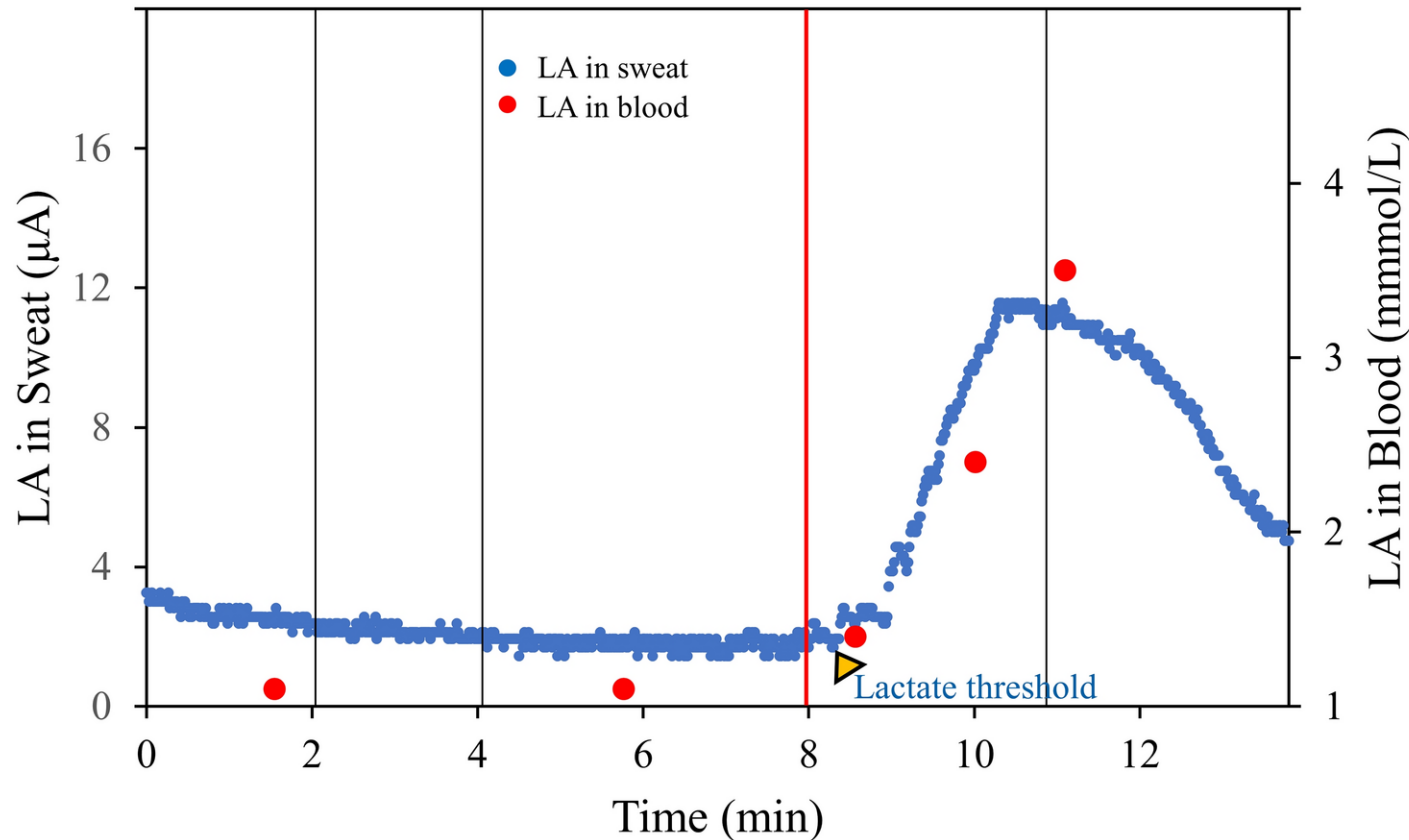
Komkova et al. 2022

Sweat lactate and exercise



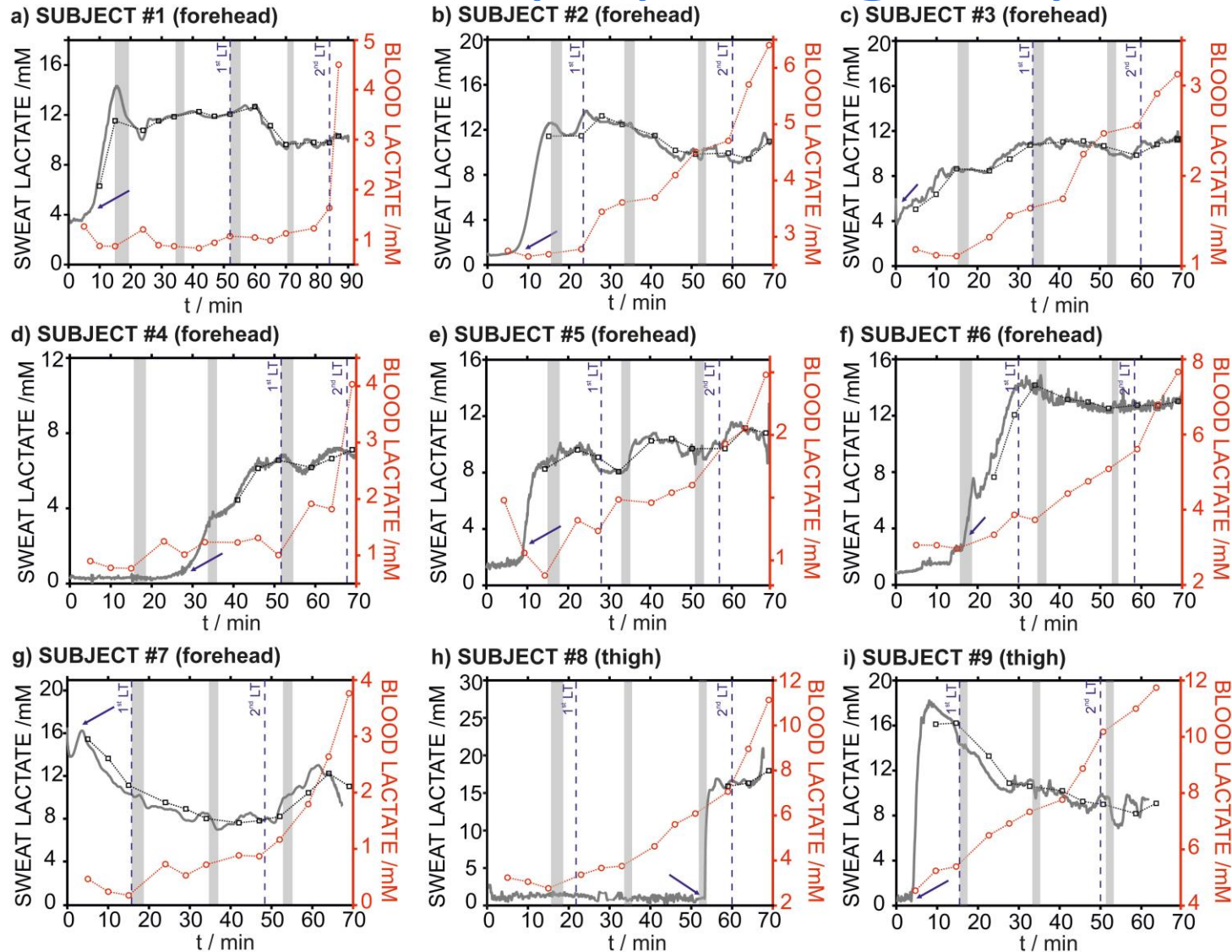
Enomoto et al. 2018

Sweat lactate and blood lactate



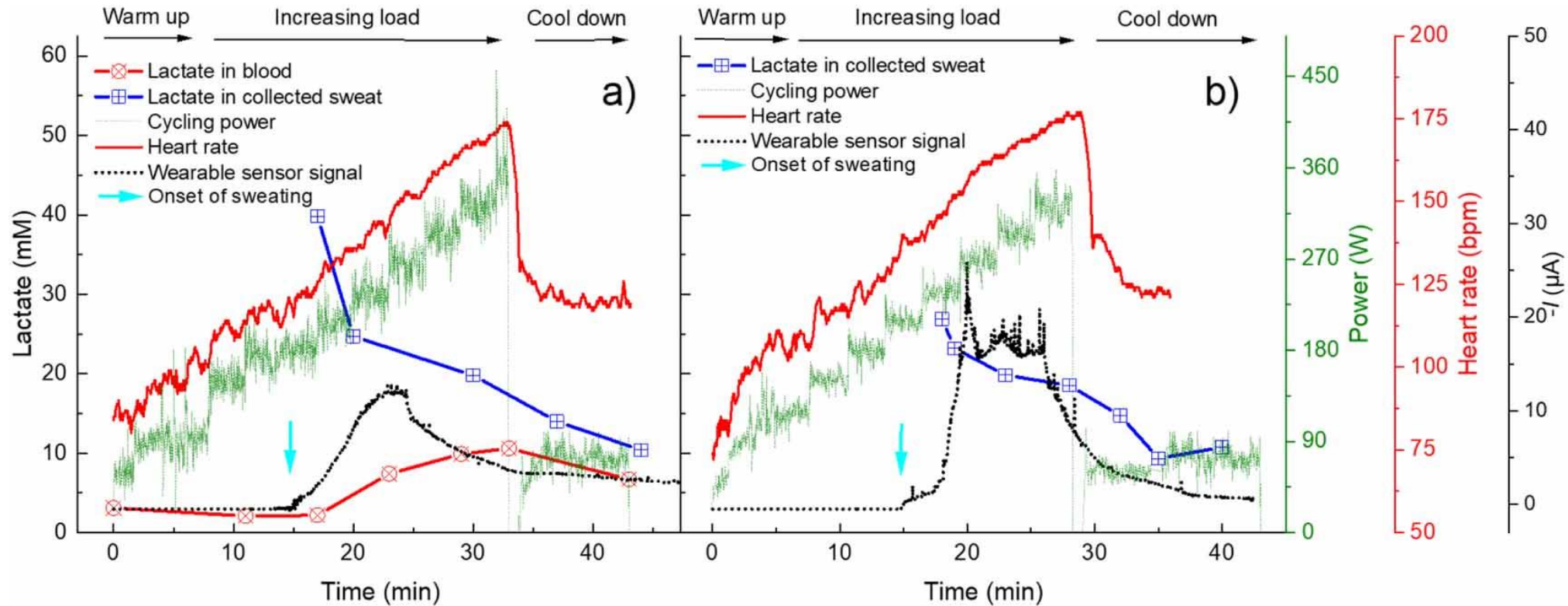
Seki et al. 2021

Sweat lactate and physiological parameters



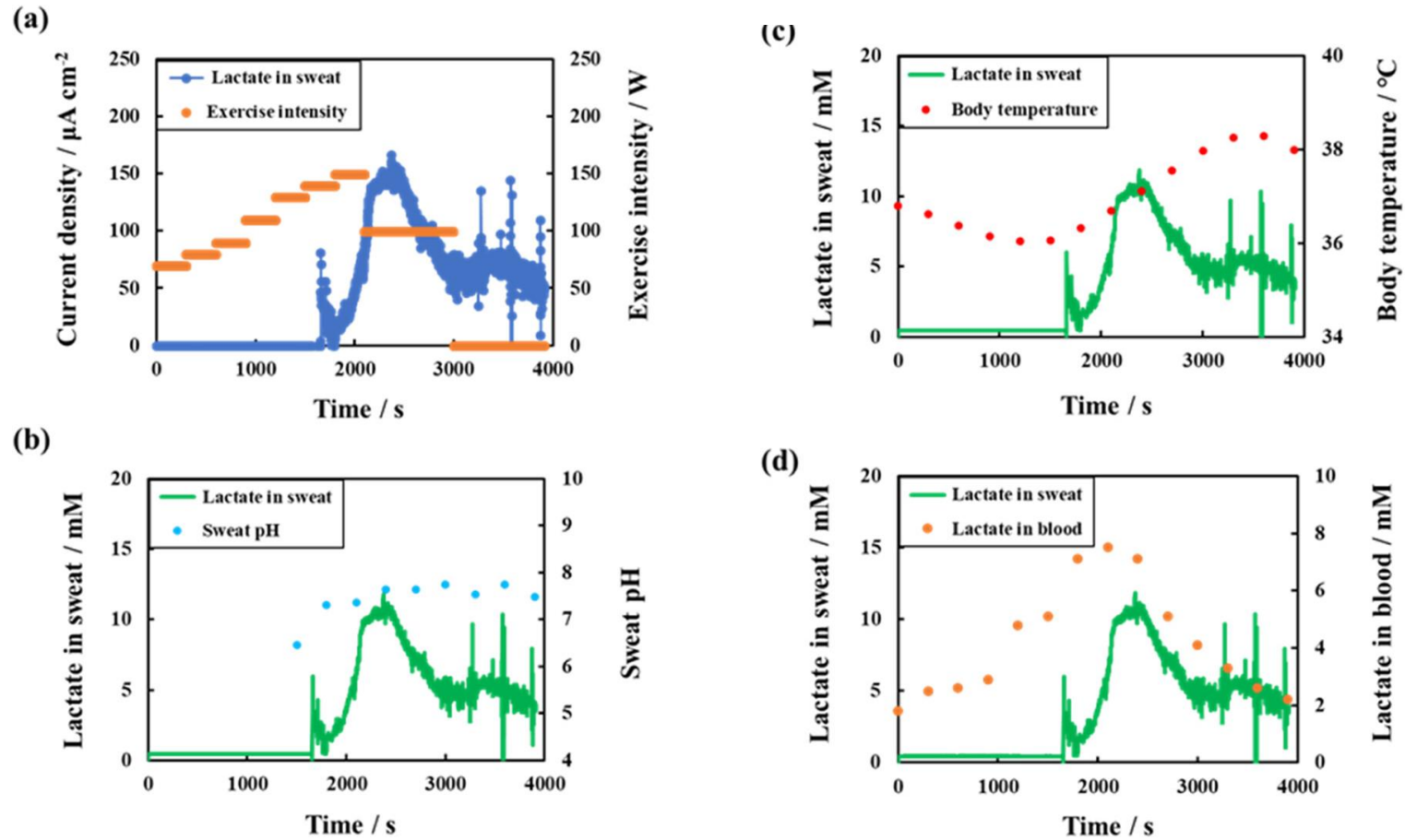
Xuan et al. 2022

Sweat lactate and exercise



Gillan et al. 2021

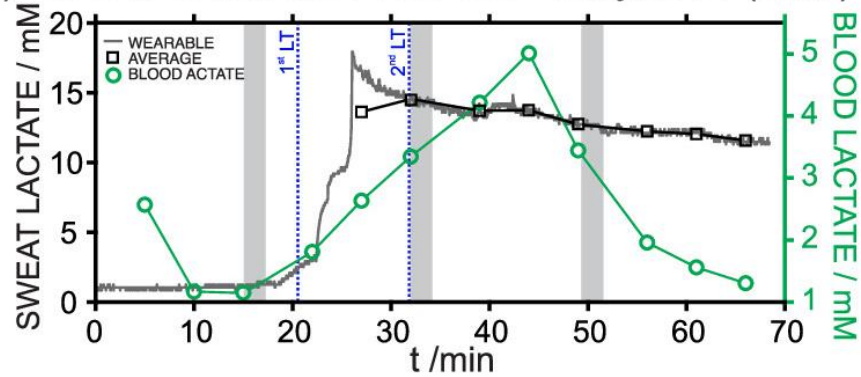
Sweat lactate and exercise



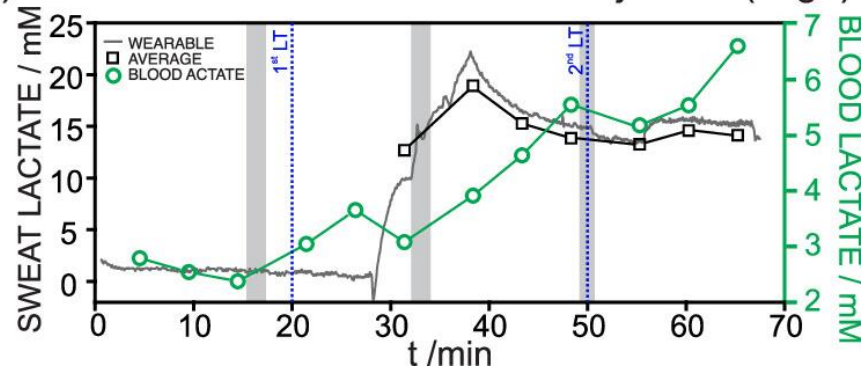
Shitanda et al. 2023

Sweat lactate and exercise

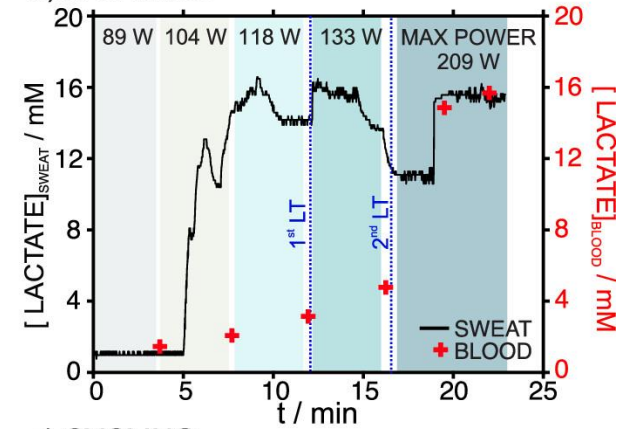
b) SWEAT LACTATE PROFILE - Subject #1 (back)



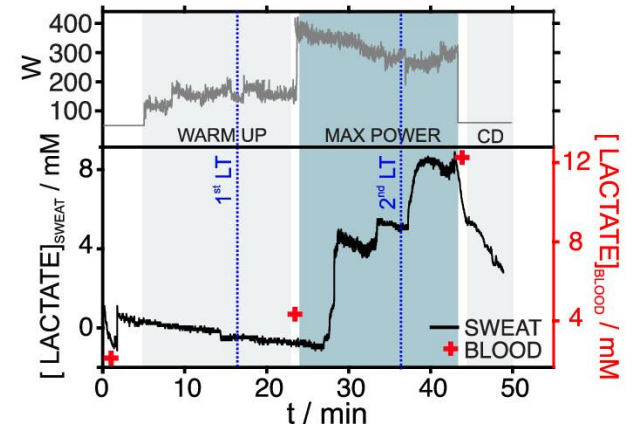
c) SWEAT LACTATE PROFILE - Subject #2 (thigh)



b) KAYAKING

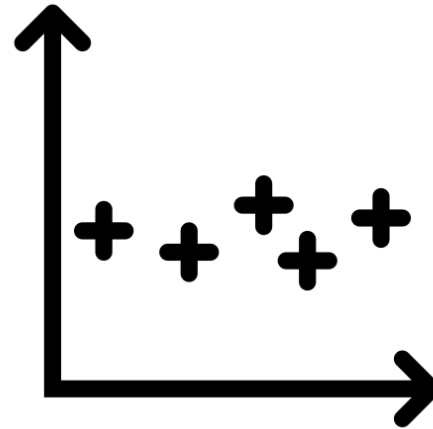
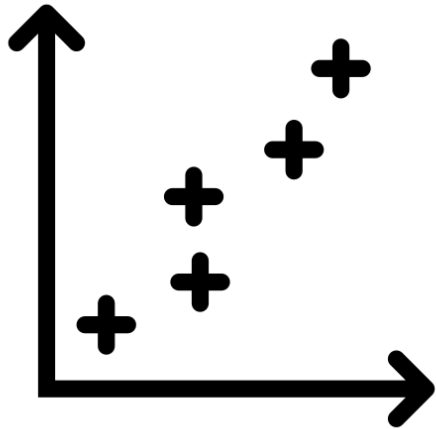


c) CYCLING

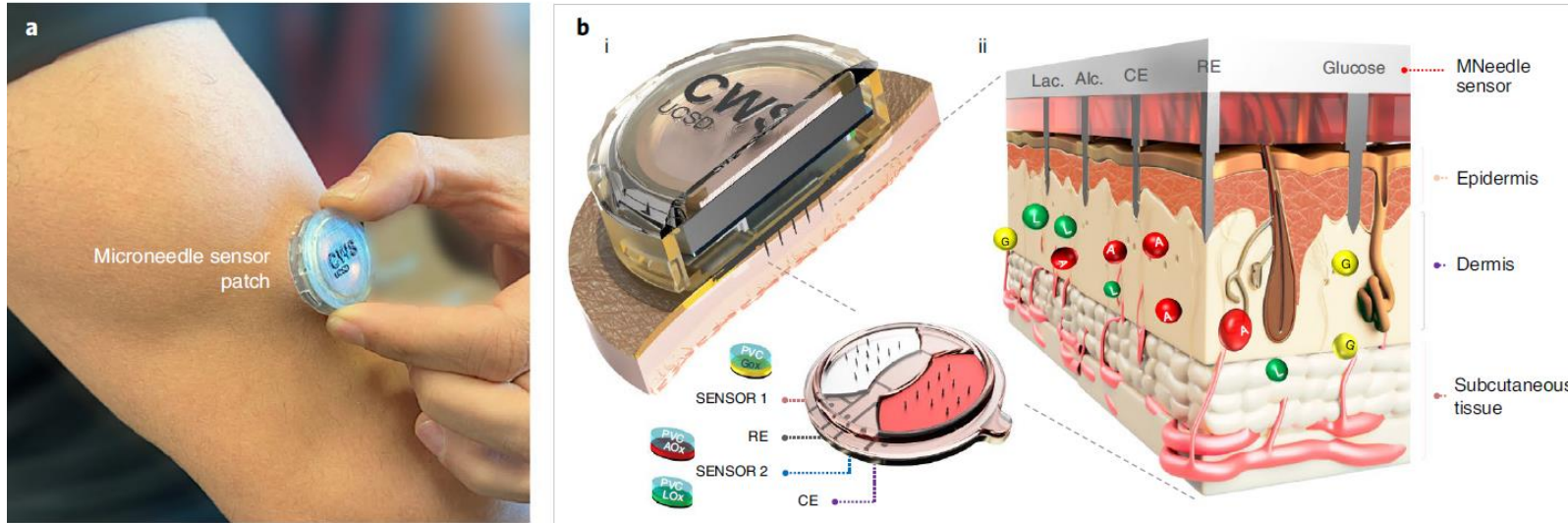


Xuan et al. 2023

Conclusions



Other methods to measure lactate



Tehrani et al. An integrated wearable microneedle array for the continuous monitoring of multiple biomarkers in interstitial fluid. 2022

Questions?

- **Kevin Van Hoovels**
- kevin@idro.world
- www.idro.world

- kevin.vanhoovels@ugent.be
- www.ugent.be/ge/bsw/en/research/exercise

