



Co + THE Create FUTURE



Biohacking – Dr Liezél van Deventer

Analytics: Pierre Rossouw, Richard Jansen



Wellness is Confusing

> 60% of people feel overwhelmed by conflicting health advice, and > 40% say they've changed their behaviour based on information they later found to be false.



Study shows v

an cai

Obesity Medicine
Volume 49, August 2024, 100550

Efficacy of low carbohydrate ketogenic diet in weight management: A narrative review

Sabrina Zaman, Tamsel Ahammed

Obesity Medicine
Volume 49, August 2024, 100550

Highlights

- This study revealed that a ketogenic diet can significantly reduce weight compared to a non-ketogenic diet.
- Timeframe plays an important role in a ketogenic diet-based weight reduction program.

Review

Mediterranean diet in the management and prevention of obesity

Ligia J. Dominguez, Nicola Veronese, Giovanna Di Bella, Claudia Cusumano, Angela Parisi, Federica Tagliaferri, Stefano Ciriminna, Mario Barbagallo

Keywords:
Obesity
Overweight
Mediterranean diet
fiber
Cardiovascular
cancer

ABSTRACT

The current pandemic of obesity represents a major global public health problem, mainly due to its association with chronic non-communicable disabling conditions and with increased mortality. Population aging increases the chances of non-communicable chronic diseases allowing a longer exposure to risk factors for these disabling conditions. Obesity is a major risk factor contributing to pathological aging. Numerous epidemiological studies have shown that the risk of death due to cardiovascular disease and cancer increases progressively as overweight and obesity rise. Nutrition research is now focused on the effects of combinations of foods in dietary patterns instead of those of single nutrients or foods. The dietary model with the largest body of evidence of health benefit is that traditionally followed by inhabitants of some Mediterranean countries. There is evidence confirming the inverse association of adhering to Mediterranean diet with overweight and obesity. Four meta-analyses of randomized controlled trials, including up to 16 trials, have shown a greater reduction of body weight and BMI with MedDiet compared to other diets, while a meta-analysis of 7 prospective cohort studies, found a reduced risk of becoming obese and gaining weight over time associated with a higher adherence to MedDiet. This narrative review examines studies reporting inverse associations of a higher adherence to the MedDiet with overweight/obesity and with age-associated chronic diseases related to obesity.

TOI The Times of India + Follow

1.7M Followers

Why walking 10,000 steps might be the best medicine for your brain, heart and weight

By Ali

Story by TOI Lifestyle Desk • 2d • 2 min read

Thank Your Coffee Regularly! Here's Why

your side if you have coffee



for weight loss, cardiometabolic health

fasting may
for weight
metabolic

6 Benefits of Drinking Coffee Before Working Out

Your workout starts long before you hit the gym. Your performance, your results, and even your mindset are all influenced by how you fuel your body. And if you're looking for a natural, effective performance boost, coffee might be your secret weapon.

8-hour time-restricted eating linked to a 91% higher risk of cardiovascular death

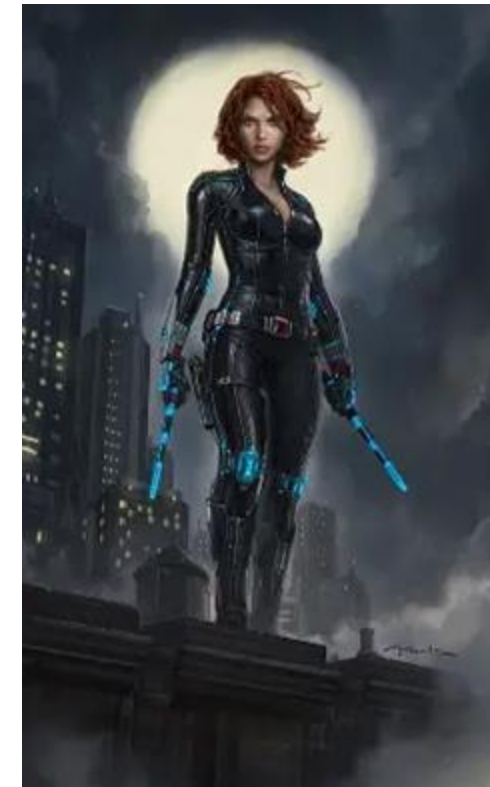
American Heart Association Epidemiology and Prevention|Lifestyle and Cardiometabolic Health Scientific Sessions 2024, Abstract P192

Decoding key terms: Biohacking

- Term first used as early as 1992
- “Biological experimentation by individuals outside a traditional scientific or medical research environment, with the aim to improve the quality or capabilities of living organisms”
- Basically, self-experimentation toward optimising

foresight
2025

Co+Create
THE
FUTURE



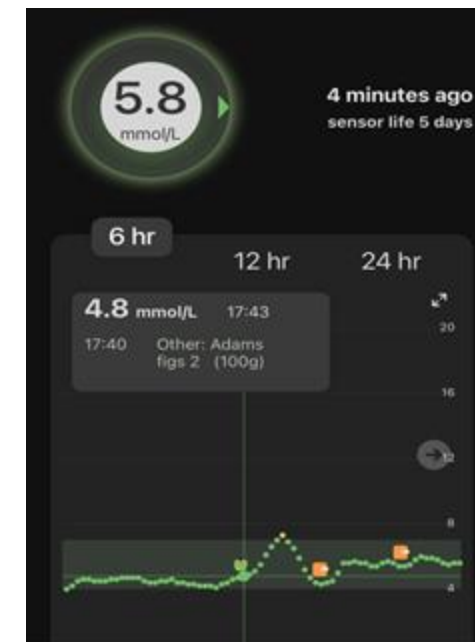
Decoding key terms: CGM



Applicator to insert sensor
under the skin
Measures glucose in the
interstitial fluid



Wireless transmission of
data to device



Application to view real
time and historical
glucose levels





The Insight Biohackathon



why?



It's a culture thing...
fearless curiosity to
spark innovation



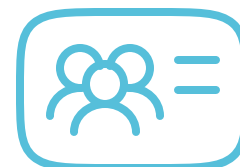
Personalised data-driven
changes to optimise
health: being a CEO



Self-experimentation



Learnings for self



Learnings for others



Clearer mud

how?



2 weeks wearing a CGM
week 1 - status quo
week 2 - adapt



Self-reported stress,
energy, sleep
patterns



Logging
activity, meals



Support from
health coaches

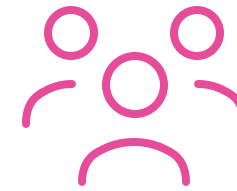


WhatsApp
community to share
experiences



Qualitative
feedback on
experience

who?



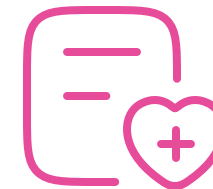
32

Insighter
volunteers



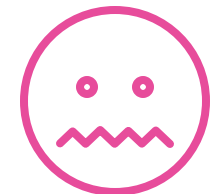
50%

Female



60%

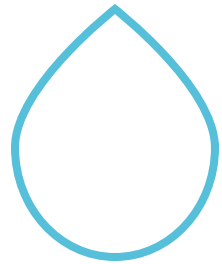
Good overall
health



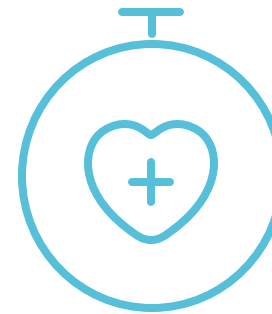
50%

Stress levels
>7/10

How did we do?



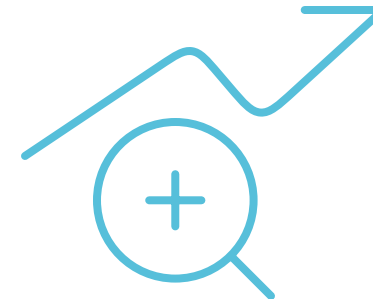
Mean MBG: 6.24 mmol/l
(3.9-5.6 mmol/l)



Mean TIR “conventional”: 98%
Mean TIR “optimal”: 82%
(> 90%)



Mean CV: 14.3%
(<15-17%)



Ave highest BG: 9.88 mmol/l
(<7.8)

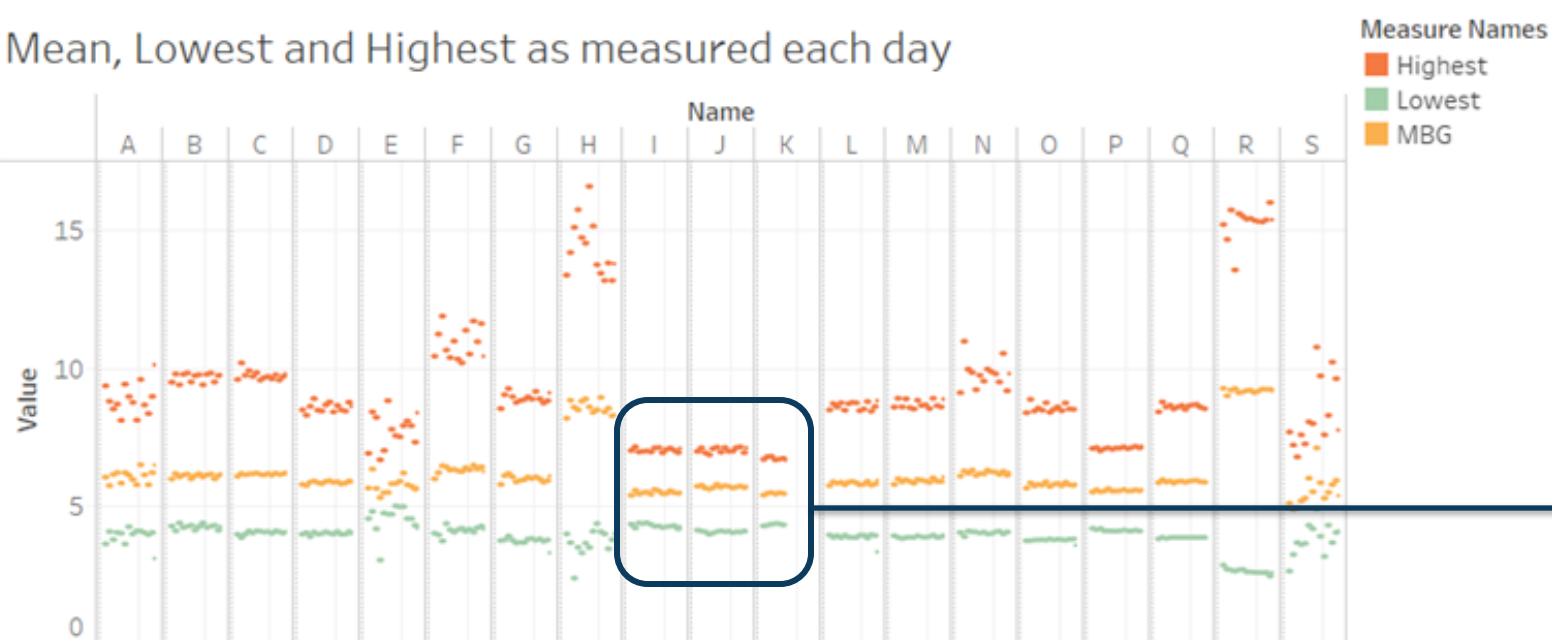


**From big picture to
deep dive: exploring
detailed insights**

Unique lives, varied glucose patterns

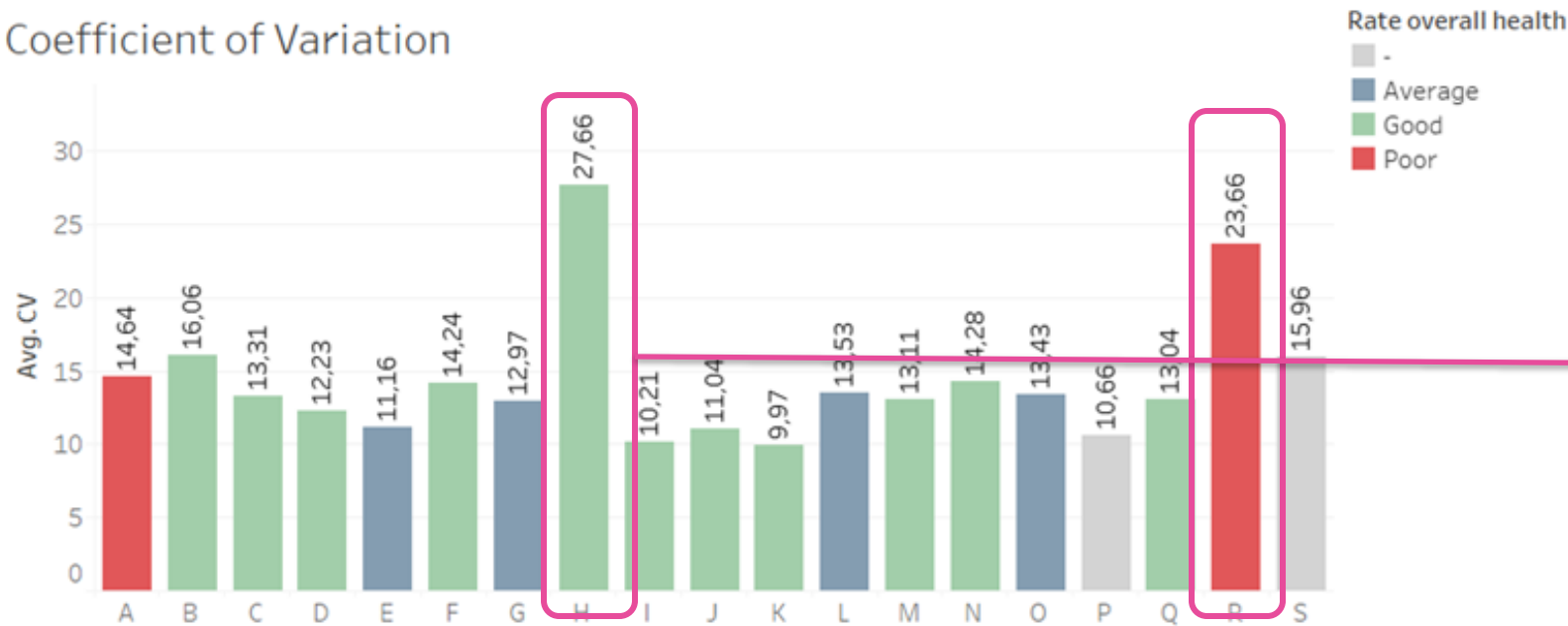


Mean, Lowest and Highest as measured each day



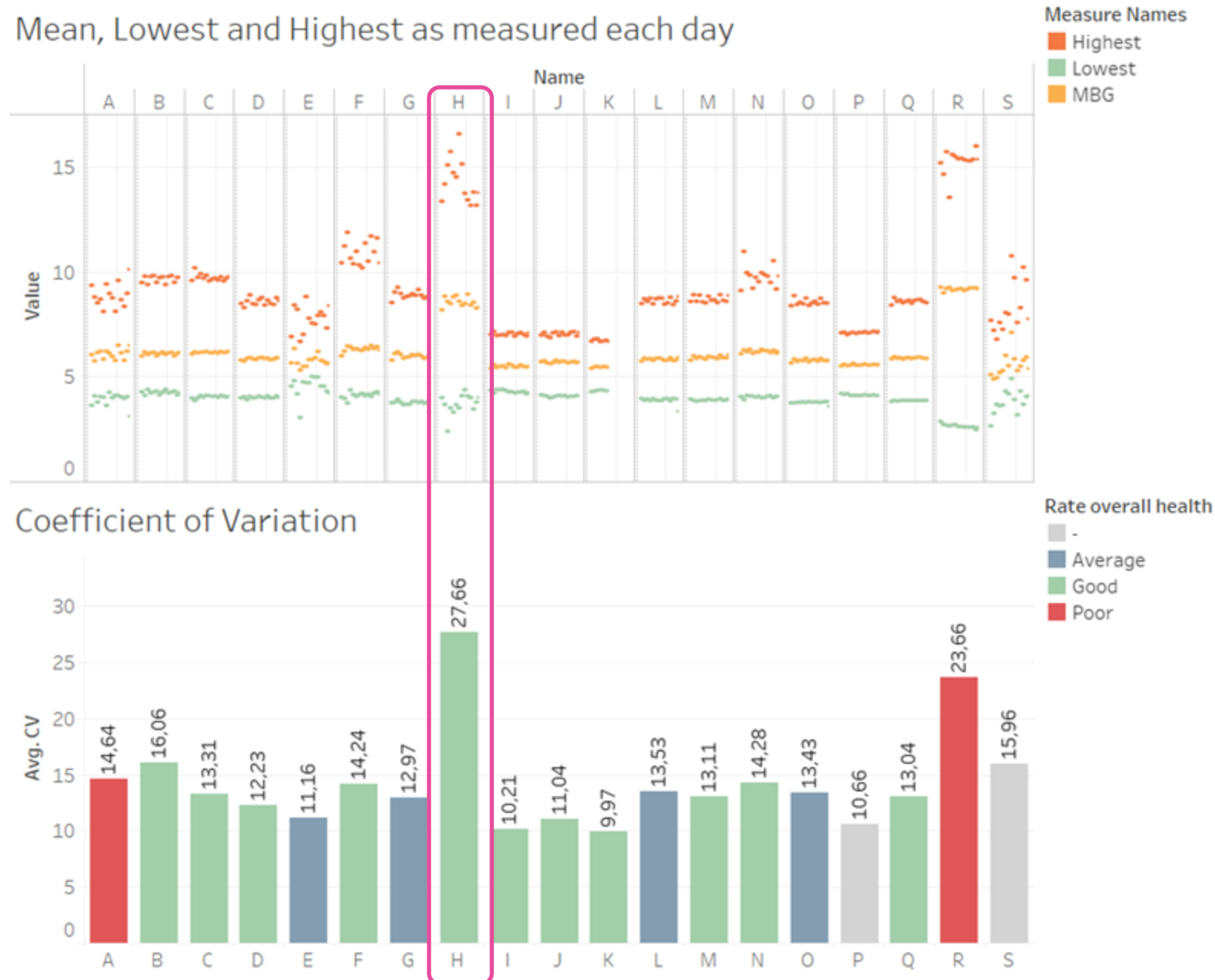
Glucose gladiators

Coefficient of Variation



Glucose rollers

Potential unleashed, shining light on diabetes care



Biohacker H:

- Known DM II on treatment, compliant
- Perceived good overall health
- HbA1C historically mostly within range
- Fasting BG am 12mmol/l
- Evening BG up to 18mmol/l
- Consulted GP with results:
 - ✓ Meds adjusted
 - ✓ Dietician and personal trainer

→ Lost 5 kg

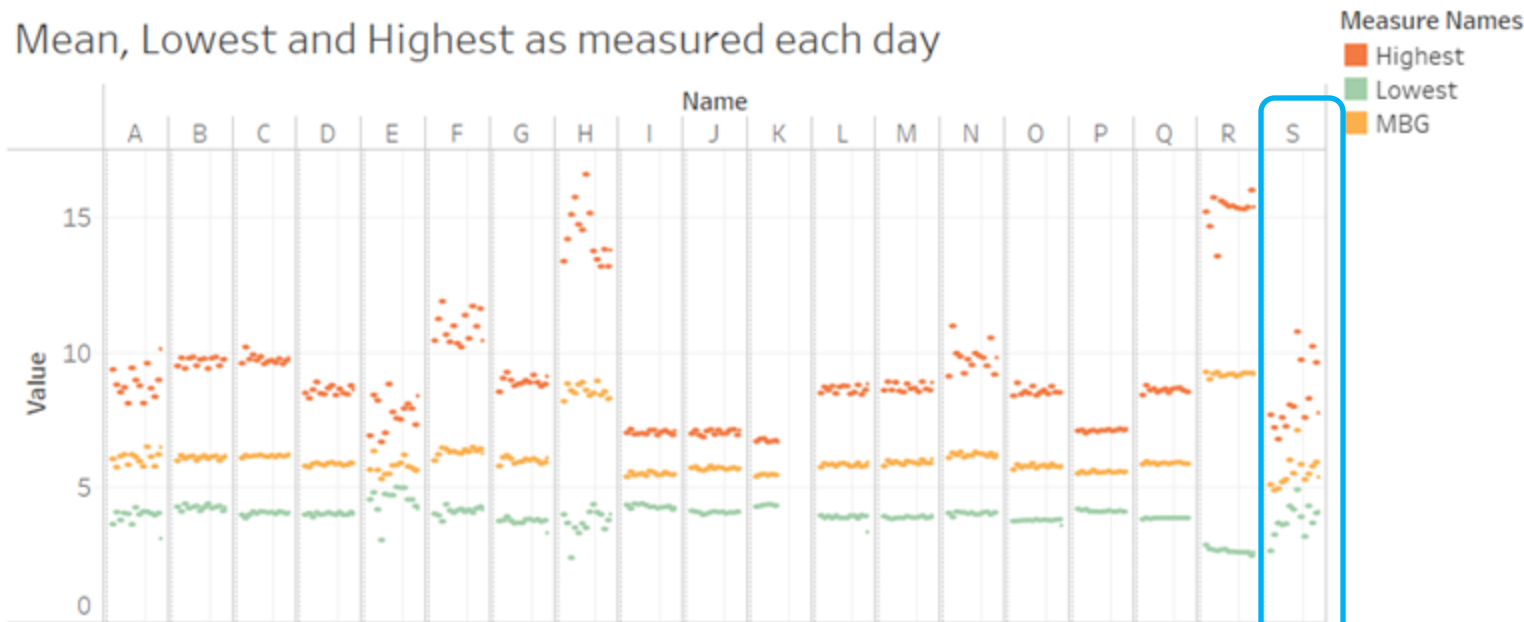
→ Fasting BG now 6-8mmol/l

Broader perspective

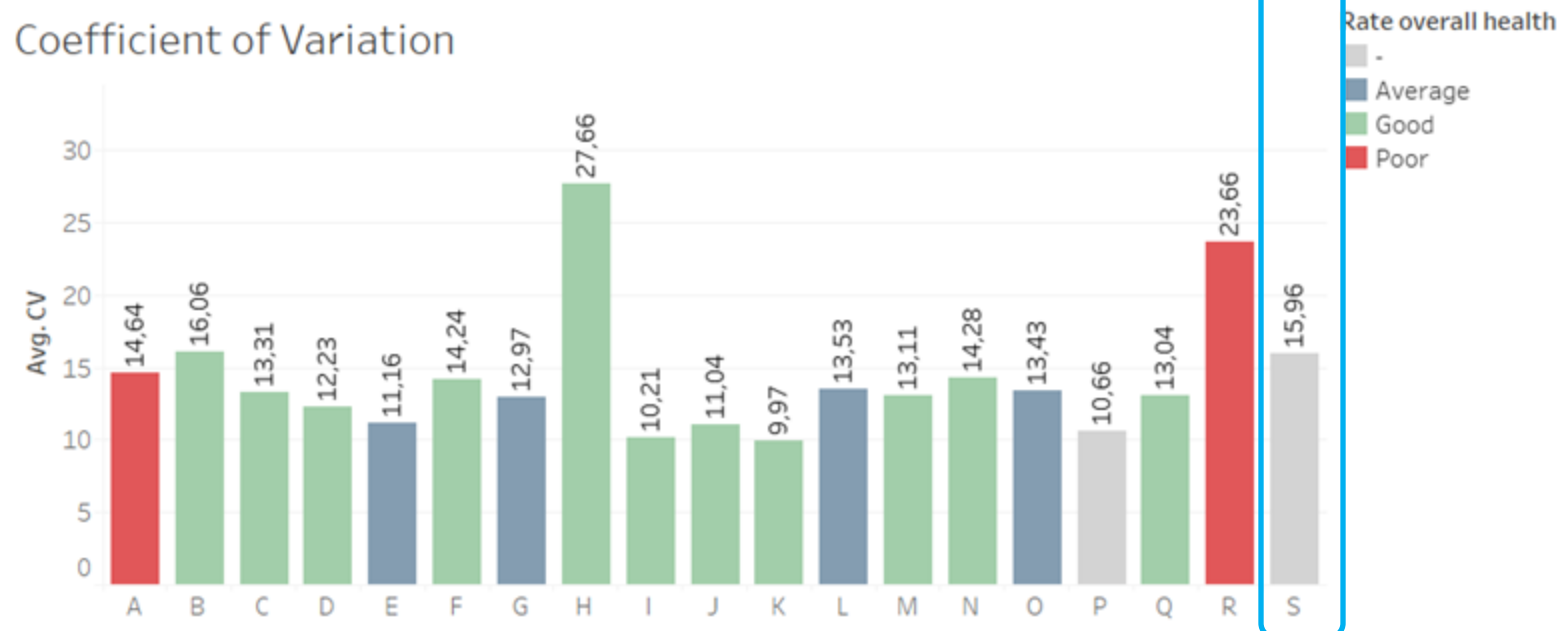
Importance of clinical data in identifying high risk individuals for early, appropriate intervention

Master your glucose, beyond just sugar intake

Mean, Lowest and Highest as measured each day



Coefficient of Variation



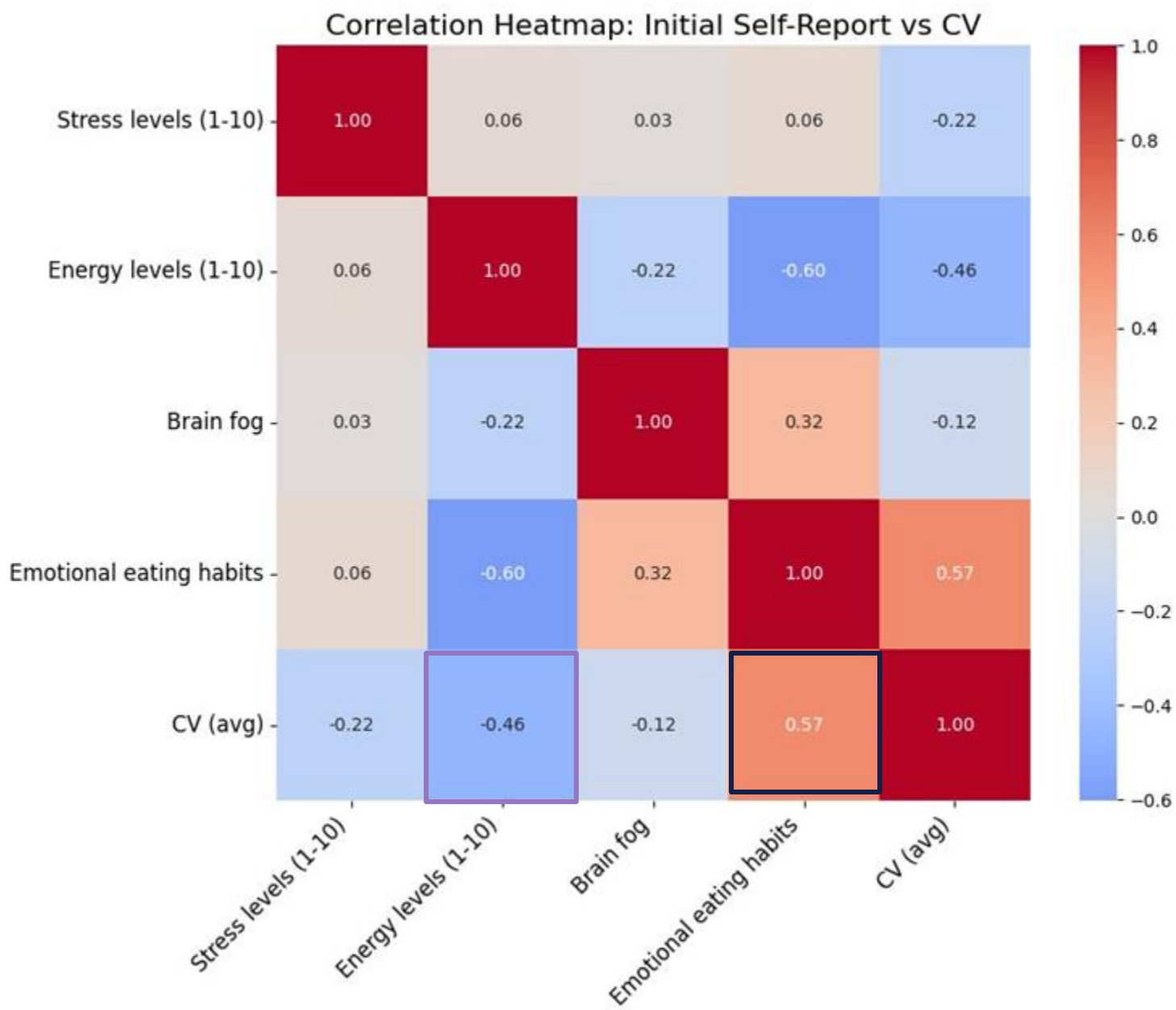
Biohacker S:

- Lower than expected BG spikes from sugary desserts
- 3 days of poor sleep and high stress levels
 - Consistent above range BG
 - Greater frequency of BG spikes
 - Controlling sugar intake did not resolve the problem
- Incorporating stress management techniques and good sleep hygiene stabilised back to baseline

Broader perspective

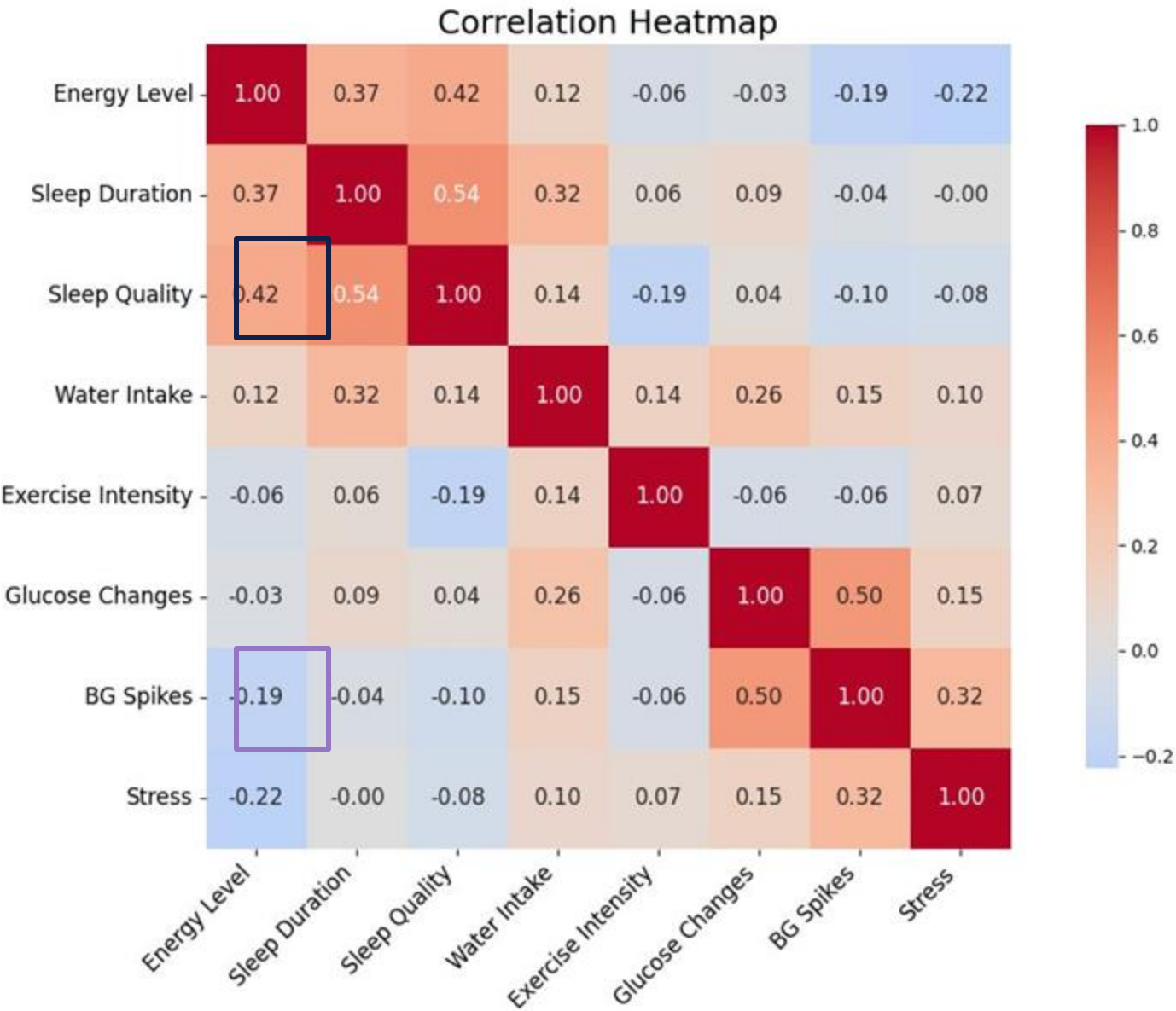
- Interplay between sleep, stress and chronic disease
- 20-30% higher risk for CVD, DM
- Integration of Wellness and DMP

Variation in glucose affects your day-to-day functioning



Feature	p-value	Finding
Emotional Eating Habits	0.016	Positive, statistically significant relationship
Energy Level	0.056	Negative, statistically significant relationship
Brain Fog	0.186	Suggested negative relationship
Stress Levels	0.086	Suggested negative relationship

Sleep and glucose spikes are most related to how energetic we feel



Feature	p-value	Finding
Sleep Quality	0.018	Positive, statistically significant relationship
BG Spikes	0.004	Negative, statistically significant relationship
Sleep Duration	0.22	Inconclusive positive relationship
Glucose Changes	0.44	Inconclusive positive relationship
Stress	0.20	Inconclusive negative relationship
Exercise Intensity	0.93	Inconclusive negative relationship
Water Intake	0.28	Inconclusive positive relationship

From numbers to narratives: qualitative feedback



Voices of biohacking: CGM experiences shared

"Lasting effect on eating habits"

"Eye opening"

"Rude awakening"

"Immediacy of feedback on changes made"

"Awareness of food packaging now"

"Personalised"

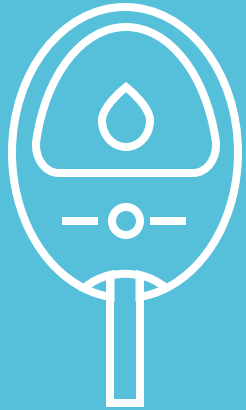
"My curve..."

"Data-driven nutrition"

"Learning about triggers"

"Real-time results"

Hurdles to hack



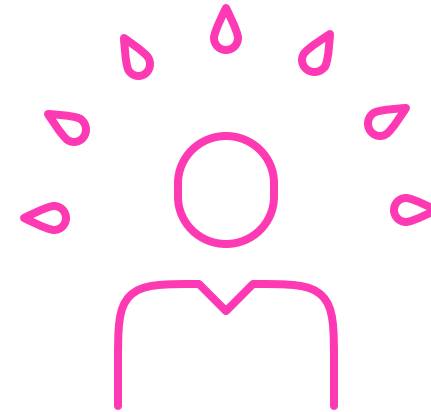
Device

- Device fatigue
- Discomfort
- Interrupted sleep
- Notifications



Daily activities

- Contact sports
- Swimming



Mental health

- Information overload
- Obsessive behaviour
- Anxiety



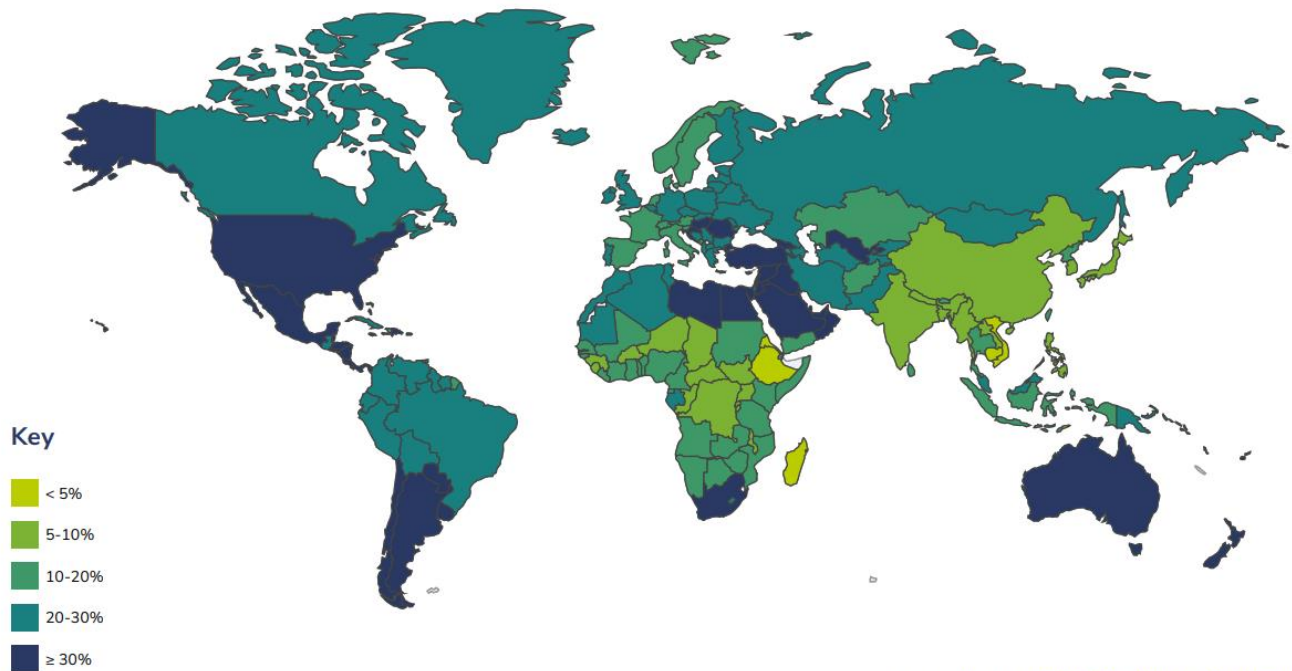
Financials

- Cost of device
- Cost of programme and support

From Insight (ers) to action: a cardiometabolic revolution



Estimates of prevalence of obesity in adults
Obesity BMI ≥ 30 kg/m²



Source: NCD RisC: <https://www.ncdrisc.org/data-downloads-adiposity.html>

Not to be reproduced without permission © World Obesity Federation, London. For permission requests please contact obesity@worldobesity.org.

900 million adults globally live with obesity - a condition linked to at least 20 diseases and projected to cost the global economy \$2.76 trillion in lost GDP by 2050.

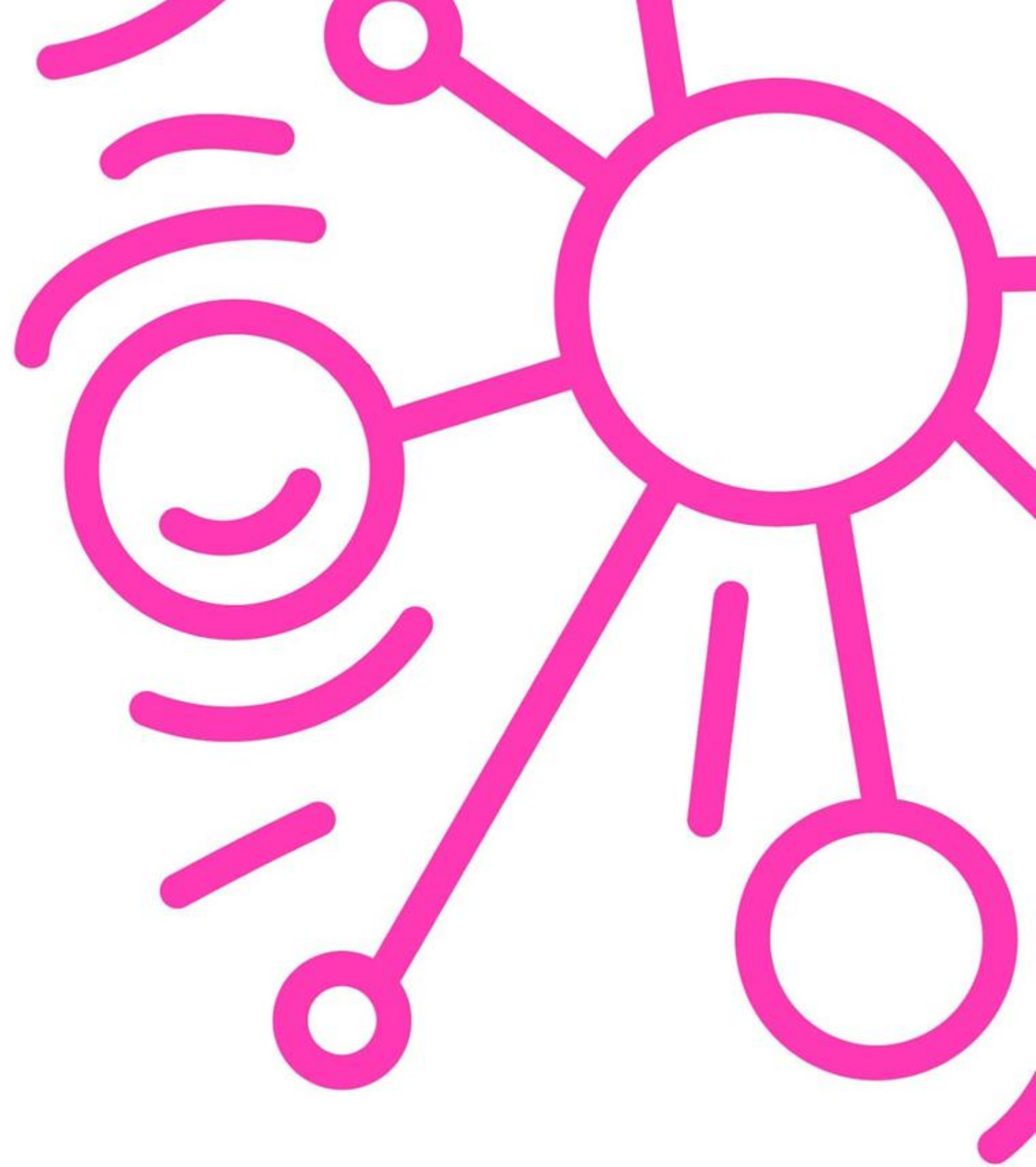
SA: 31% of men and 68% of women are classified as obese

Medical Rx of obesity,
one size fits all, some
proactive management of
associated conditions

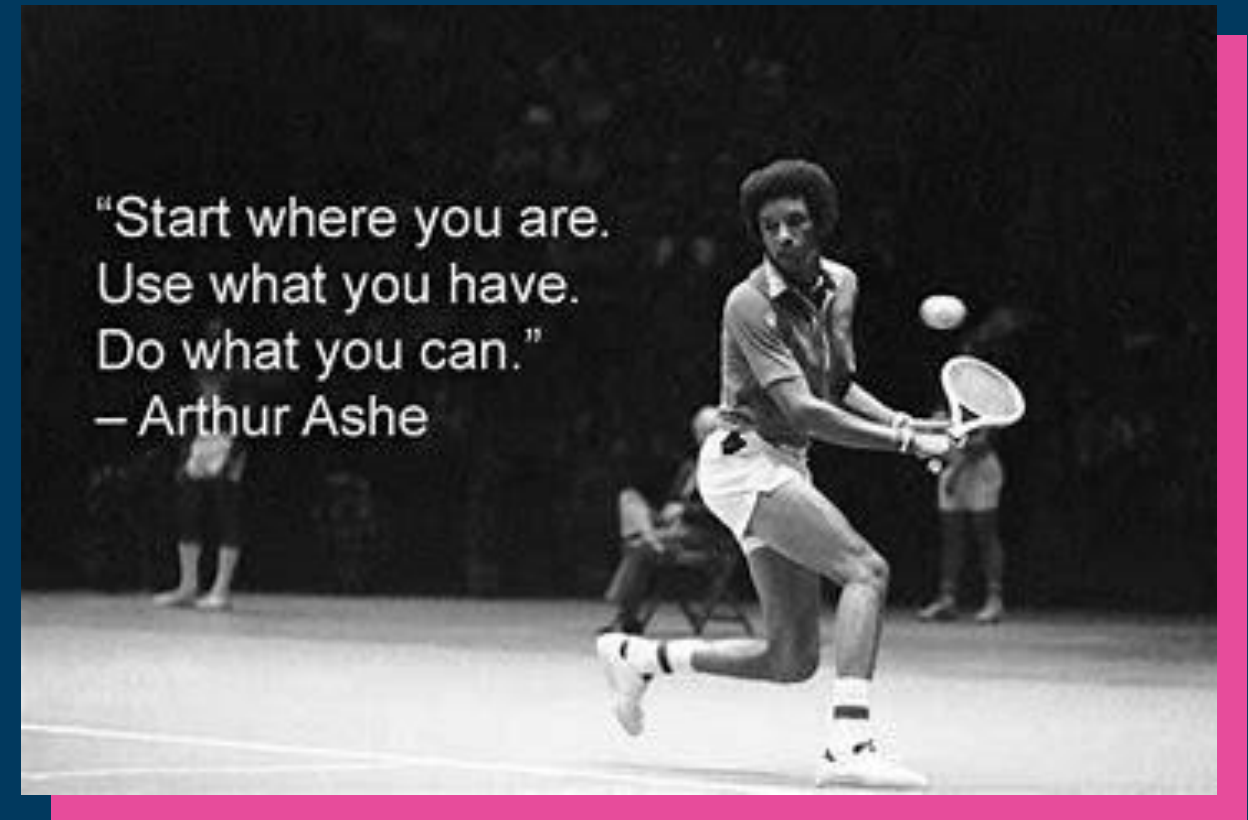
Reactive: treat
associated conditions as
they materialise

Proactive: personalised
preventative strategies
→CEO of your health

Biohack more broadly



1. Self → Family → Employees → High risk patients
2. Use available tools : diary → available technology → AI
3. Partner with other like-minded people and organisations
4. Empower through education to confidently identify trustworthy information





THE
Co+Create
FUTURE

**THANK
YOU**