



A new diabetes patient sub-classification: its application in RHAPSODY

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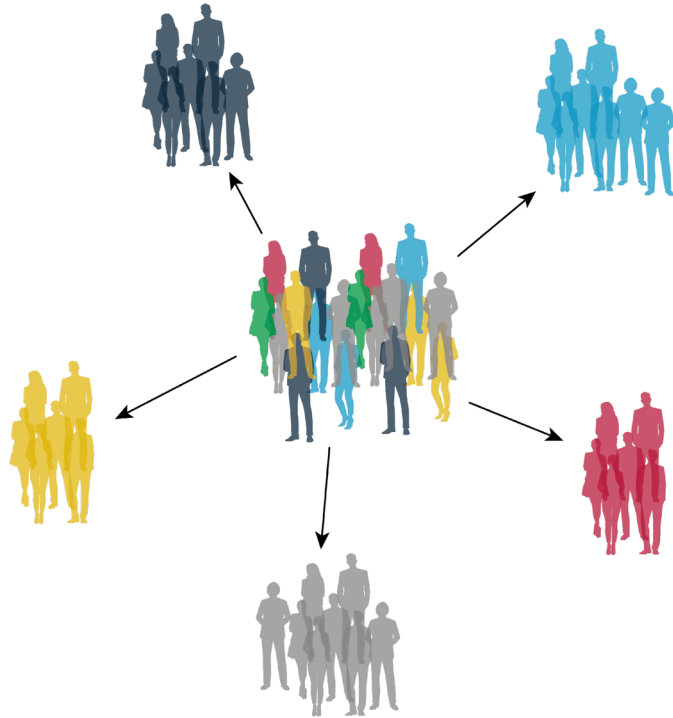
On behalf of the diabetes progression group

Cell and Chemical Biology, LUMC

Epidemiology and Biostatistics, Amsterdam UMC

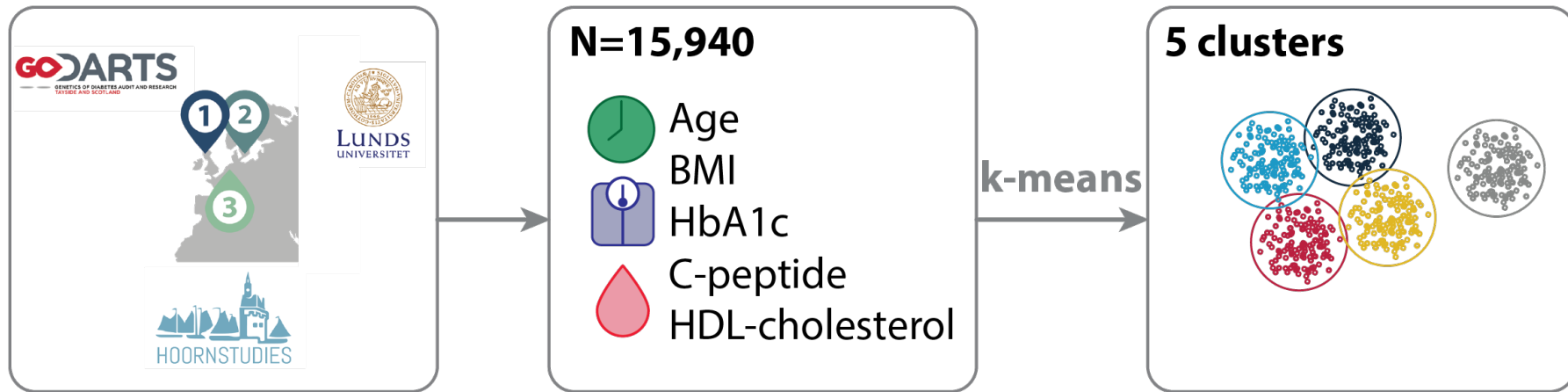


Aim of RHAPSODY



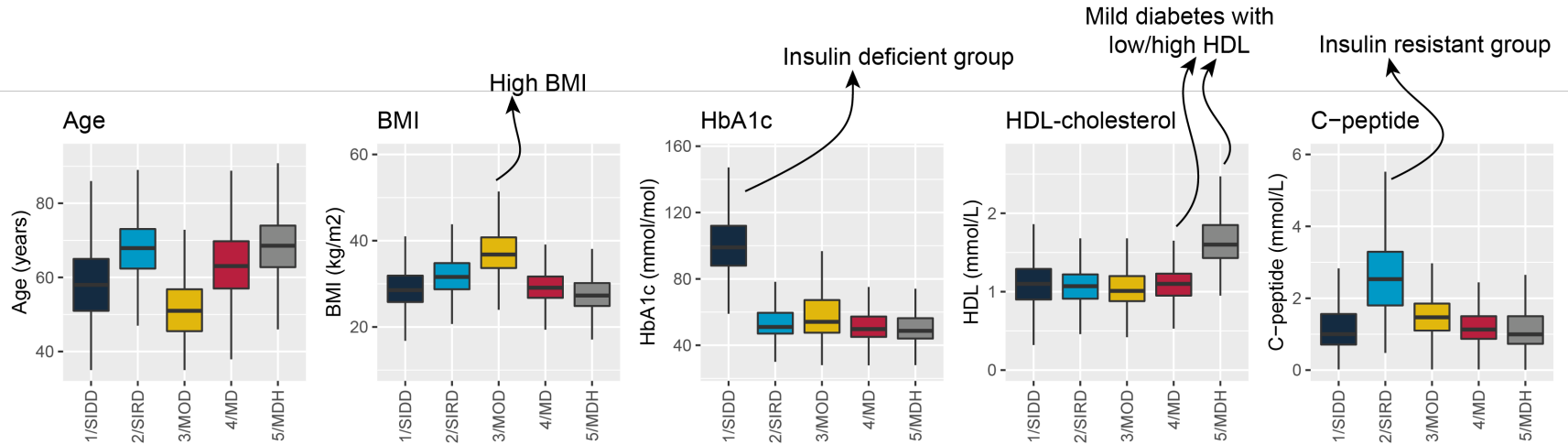
Improve the **stratification** of people with type 2 diabetes

Clinical variable-based subgroups



Slieker and Donnelly et al. Diabetologia 2021

Cluster characteristics



Slieker and Donnelly et al. Diabetologia 2021

Comparing the clusters to other data types



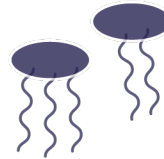
Inherited risk
12828 individuals



Metabolites
2945 individuals
17 metabolites



Lipids
2541 individuals
140 lipids

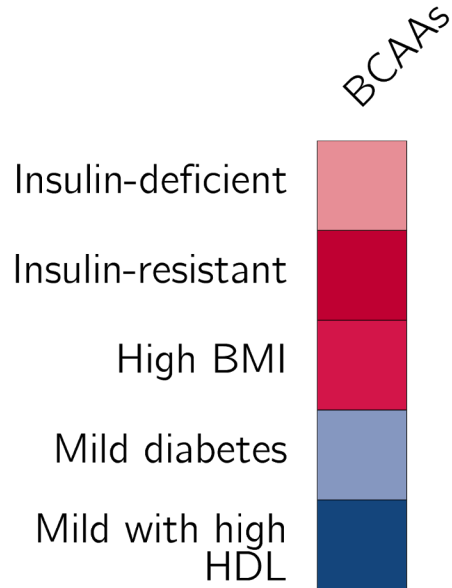


Proteins
1170 individuals
1195 proteins



Slieker and Donnelly et al. Diabetes 2021

Results: metabolites



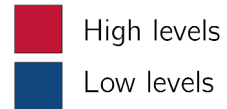
- Branched-chain amino acids (BCAAs) - leucine and isoleucine
- High BCAAs indicate insulin resistance



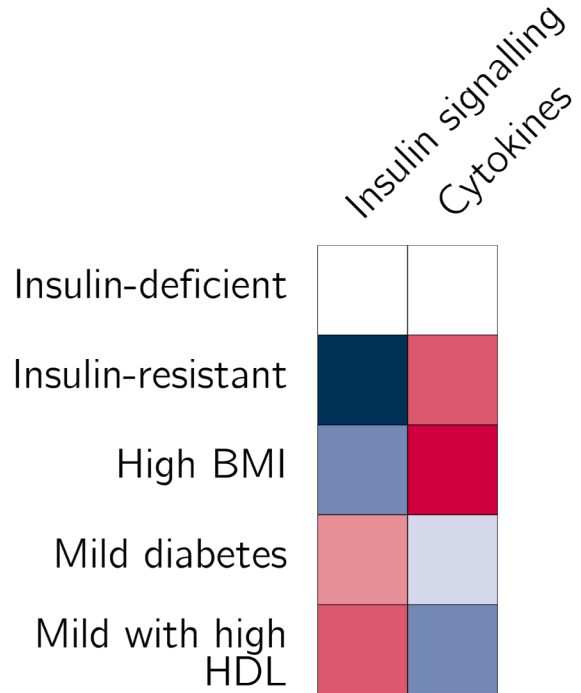
Results: lipids

	Diacylglycerol	Triacylglycerol	Phosphatidylcholines
Insulin-deficient			
Insulin-resistant			
High BMI			
Mild diabetes			
Mild with high HDL			

- Diacylglycerol is linked to higher insulin resistance
- Phosphatidylcholines with lower insulin resistance

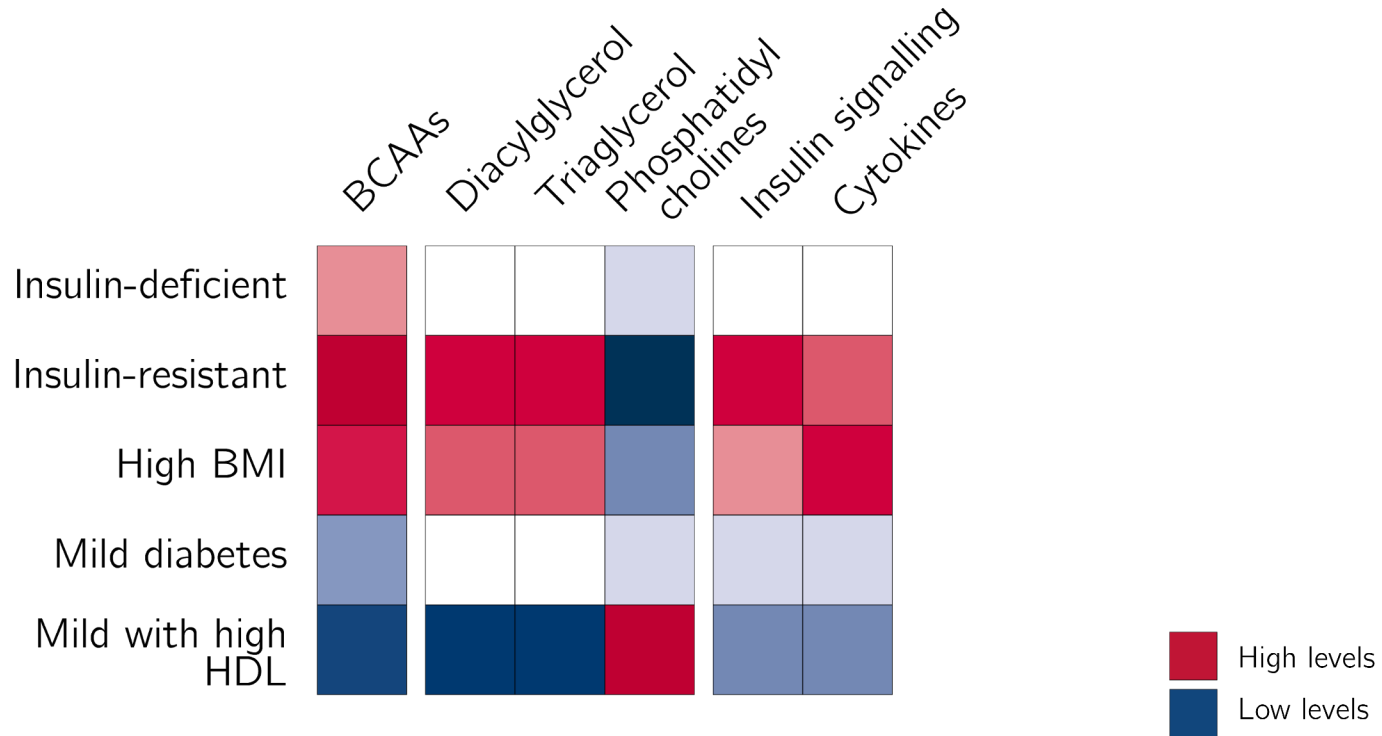


Results: proteins



- Insulin signalling lower in insulin resistant people
- Cytokines, including satiety hormones higher in high BMI group

Overview



Conclusions

- All people have type 2 diabetes, but very **distinct molecular signatures**
- The insulin resistance- and high HDL groups show opposite effects
- Provides starting points for **personalised medicine**
- Learn more on the **RHAPSODY outcomes webpages**:
<https://imi-rhapsody.eu/outcomes/>



Thank you for your attention!

This project has received funding from the Innovative Medicines Initiative 2 Joint Undertaking under grant agreement No 115881 (RHAPSODY). This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and EFPIA.

This work is supported by the Swiss State Secretariat for Education, Research and Innovation (SERI) under contract number 16.0097-2. The opinions expressed and arguments employed herein do not necessarily reflect the official views of these funding bodies.

IMI-RHAPSODY.EU



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