

At the heart of the matter

Citation for published version (APA):

de Wit - Verheggen, V. (2022). *At the heart of the matter: imaging cardiac metabolism in insulin resistance*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20220601vw>

Document status and date:

Published: 01/01/2022

DOI:

[10.26481/dis.20220601vw](https://doi.org/10.26481/dis.20220601vw)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

Propositions

1. Alterations in cardiac metabolism in prediabetes and pericardial fat volume are closely linked to diastolic function. (*Chapter 2 and Chapter 4, this thesis*)
2. Pre-clinical diastolic dysfunction in patients with diabetes mellitus is independently associated with subsequent heart failure and mortality. (*Adapted from From, JACC 2010*)
3. The *in vivo* cardiac energy status (PCr/ATP) does not directly reflect *ex vivo* mitochondrial respiratory capacity. (*Chapter 3, this thesis*)
4. Volunteers with prediabetes have a lower myocardial energy status compared to healthy overweight and obese volunteers, while their cardiac function is normal. (*Chapter 5, this thesis*)
5. Stimulating fatty acid oxidation decreases insulin-stimulated glucose uptake in the liver and the heart. (*Chapter 6, this thesis*)
6. The risk of cardiovascular disease increases continuously with rising fasting plasma glucose levels, even before reaching glucose levels sufficient for a diabetes diagnosis. (*WHO, Global report on diabetes, 2016*)
7. To tackle the diabetes problem, we should not accept a prediabetic state but should try to convert prediabetes to a normal glucose state. (*Adapted from Tuso, Perm J. 2014*)
8. Cardiac energy status, measured by ^{31}P -MRS, can be used to estimate increased cardiovascular disease risk in patients with prediabetes. (*Impact paragraph, this thesis*)
9. Interdisciplinary collaborations are important in the interests of integrating knowledge from diverse points of the scientific compass. (*Richard Woolley*)
10. It is an integral part of good doctoring to ask not only, ‘What is the diagnosis, and what is the treatment?’ but also, ‘Why did this happen, and could it have been prevented?’ (*Geoffrey Rose*)
11. Nobody has ever measured, not even poets, how much the heart can hold. (*Zelda Fitzgerald*)