

A bioengineered microwell-array device to treat type 1 diabetes

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Propositions

Accompanying the dissertation

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By

Rick Herman Wilhelmus de Vries

Maastricht, 14-07-2023

- 1.** Proper revascularization, ensuring optimal survival and function of tissue grafts, remains one of the biggest challenges in β -cell replacement therapy (Chapter 2)
- 2.** Islet delivery devices which follow a revascularization strategy could potentially improve the outcome of clinical islet transplantation by offering a more favorable transplantation site for pancreatic islets than the liver (Chapter 4)
- 3.** Although high islet packing densities will realize favourable device dimensions, it will also lead to a severe risk of oxygen and nutrient competition and likely results in the loss of graft function shortly after implantation (Chapter 3)
- 4.** Establishment of a working prototype of a medical device in an academic setting is the mere start of a translational journey towards the clinic. (Chapter 7)
- 5.** *"Laughter is the best medicine, unless you're diabetic, then insulin comes pretty high on the list"* - **Jasper Carrott – Comedian**
- 6.** *"Insulin is not a cure for diabetes; it is a treatment. It enables the diabetic to burn sufficient carbohydrates so that proteins and fats may be added to the diet in sufficient quantities to provide energy for the economic burdens of life."*
Frederick Banting – Inventor of insulin
- 7.** *"Diabetes is a disease that separates warriors from the rest. There are no days off from it. At best it is manageable; at worst it's the greatest weight and discouragement that can be felt."* - **Janet Hatch – Mother of a diabetic child and author of the book: My daughter, diabetes and lessons in love.**
- 8.** *"At some point in every person's life, you will need an assisted medical device - whether it's your glasses, your contacts, or as you age and you have a hip replacement or a knee replacement or a pacemaker. The prosthetic generation is all around us."* - **Aimee Mullins – former Paralympic athlete**
- 9.** *"If you're not failing every now and again, it's a sign you're not doing anything very innovative"* - **Woody Allen – Film director, writer and author**
- 10.** *"Listen to anyone with an original idea, no matter how absurd it may sound at first. If you put fences around people, you get sheep. Give people the room they need"* - **William McKnight – Businessman and philanthropist**
- 11.** *"If the only tool you have is a hammer, you tend to see every problem as a nail"*- **Abraham Maslow – Clinical physiologist**