

From nociception to perception

Citation for published version (APA):

Beckers, A. B. (2023). *From nociception to perception: breaking down the process of gut-brain signalling*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20230116ab>

Document status and date:

Published: 01/01/2023

DOI:

[10.26481/dis.20230116ab](https://doi.org/10.26481/dis.20230116ab)

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.

Stellingen behorende bij het proefschrift

FROM NOCICEPTION TO PERCEPTION

BREAKING DOWN THE PROCESS OF GUT-BRAIN SIGNALLING

Bram Beckers, 16 januari 2023, Maastricht

1. Inflammation serves an important role in TRP channel sensitization, but it is not the sole driving factor.
- This thesis, chapter 2 & 3 -
2. Insights regarding the natural analgesic effect of ageing are valuable for the development of novel visceral pain management strategies.
- This thesis, chapter 4 -
3. There is a remarkable overlap between disorders of brain-gut interaction and hypermobility spectrum disorders, suggesting shared underlying pathophysiological mechanisms.
- This thesis, chapter 5 & 7 -
4. At the level of the nucleus of the solitary tract, nociceptive processing appears to operate regardless of perceptive responses.
- This thesis, chapter 8 -
5. Duodenal hyperpermeability and low-grade duodenal inflammation are implicated in altered neuronal signalling and systemic immune activation in functional dyspepsia.
- Wauters et al. Gut 2019 -
6. Transcutaneous auricular vagal nerve stimulation improves both constipation and abdominal pain in patients with IBS-C.
- Shi et al 2021. JCI Insight -
7. Resilience research is a paradigm shift from investigating pathophysiology towards investigating the mechanisms that can protect individuals against stress-related disease.
- Kalisch et al. Nature Human Behaviour 2017 -
8. It is not the mountains ahead to climb that wear you out; it is the pebble in your shoe.
- Muhammed Ali -
9. *Palma sub pondere crescit* (The palm thrives under pressure).
- wapen van Oranje-Nassau en Waldeck-Pyrmont -