

University of Groningen

Capsaicin-sensitive nerves and energy homeostasis

Wall, Ester Henriette Eugenie Marie van de

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2005

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Wall, E. H. E. M. V. D. (2005). *Capsaicin-sensitive nerves and energy homeostasis: involvement in satiety and s.n.*

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.



RIJKSUNIVERSITEIT GRONINGEN

CAPSAICIN-SENSITIVE NERVES AND ENERGY
HOMEOSTASIS

Involvement in satiety and glucose homeostasis

Proefschrift

ter verkrijging van het doctoraat in de
Wiskunde en Natuurwetenschappen
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus, dr. F. Zwarts,
in het openbaar te verdedigen op
vrijdag 18 maart 2005
om 13:15 uur

door

Esther Henriette Eugenie Marie van de Wall
geboren op 18 mei 1976
te Maastricht

Promotores: Prof. dr. J. M. Koolhaas
Prof. dr. A. J. W. Scheurink

Beoordelingscommissie: Prof. dr. G. J. ter Horst
Prof. dr. R. C. Ritter
Prof. dr. A. B. Steffens

ISBN 90-367-2227-6

There is no way to happiness; happiness is the way

The Buddha

The studies described in this thesis were carried out at the Department of Animal physiology, University of Groningen, The Netherlands and at the Department of Veterinary & Comparative Anatomy, Pharmacology & Physiology, Washington State University, Pullman, USA. The work was supported by the University of Groningen and the graduate school for Behavioral and Cognitive Neurosciences. The work at Washington State University was also subsidized by the Netherlands Organization of Scientific Research (NWO), Nicholaas Mulerius Fund (The Netherlands) and by grant number NS20561 to RCR (USA).



Publication of this thesis was financially supported by the following organizations:

Rijksuniversiteit Groningen

Graduate School of Behavioral and Cognitive Neurosciences (BCN)

Nederlandse Associatie voor de Studie van Obesitas (NASO)

Diabetesfonds Nederland

ML Laboratories Plc (UK)

Cover design: Nico Noorman, Dick Visser and Esther van de Wall

Lay-out: Esther van de Wall

Printed by: Drukkerij van Denderen, Groningen

CONTENTS

Chapter	page
1 General Introduction	7
2 Deafferentation affects short-term but not long-term control of food intake	37
3 CCK enhances response to gastric distension by acting on capsaicin-insensitive vagal afferents	57
4 Involvement of capsaicin-sensitive afferents in meal induced thermogenesis	83
5 Ablation of capsaicin-sensitive afferent nerves affects insulin response during an intravenous glucose tolerance test but has no effect on glucose tolerance	99
6 Neonatal capsaicin treatment increases leptin sensitivity and improves endocrine profiles relevant to glucose homeostasis in rats	115
7 Summary, discussion and conclusions	133
Nederlandse samenvatting	177
Abbreviations	184
De bedankjes	187
Curriculum Vitae	191
Publicatielijst	192

