



Universiteit
Leiden
The Netherlands

Insulin sensitivity : modulation by the gut-brain axis

Heijboer, A.C.

Citation

Heijboer, A. C. (2006, April 25). *Insulin sensitivity : modulation by the gut-brain axis*. Retrieved from <https://hdl.handle.net/1887/4370>

Version: Corrected Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/4370>

Note: To cite this publication please use the final published version (if applicable).

Insulin Sensitivity

Modulation by the gut-brain axis

*Publication of this thesis was financially supported by the
Dutch Diabetes Research Foundation*



Cover illustration: Mieczysław Gyrowski

Cover and print: Haveka BV, Albllasserdam

Insulin Sensitivity

Modulation by the gut-brain axis

Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van de Rector Magnificus Dr. D.D. Breimer,
hoogleraar in de faculteit der Wiskunde en
Natuurwetenschappen en die der Geneeskunde,
volgens besluit van het College voor Promoties
te verdedigen op dinsdag 25 april 2006
klokke 14.15 uur

door

Annemiek Corine Heijboer

geboren te Noordwijk ZH
in 1978

PROMOTIECOMMISSIE

Promotor: Prof. dr. J.A. Romijn

Co-promotores: dr. E.P.M. van der Kleij-Corssmit
dr. H. Pijl

Referent: Prof. dr. E. Fliers, Amsterdam Medisch Centrum

Overige leden: Prof. dr. ir. L.M. Havekes
Prof. dr. E.R. de Kloet
Prof. dr. S.E. Papapoulos
Prof. dr. R.A.H. Adan, Universitair Medisch Centrum Utrecht

CONTENTS

Chapter 1	7
Introduction	
Chapter 2	31
Sixteen hours fasting differentially affects hepatic and muscle insulin sensitivity in mice	
<i>J Lipid Res: 46(3):582-8, 2005</i>	
Chapter 3	47
High fat diet induced hepatic insulin resistance is not related to changes in hypothalamic mRNA expression of NPY, AgRP, POMC and CART in mice	
<i>Peptides: 26(12):2554-8, 2005</i>	
Chapter 4	59
Intracerebroventricular administration of melanotan II increases insulin sensitivity of glucose disposal in mice	
<i>Diabetologia: 48(8):1621-6, 2005</i>	
Chapter 5	71
PYY ₃₋₃₆ reinforces insulin action on glucose disposal in mice fed a high fat diet	
<i>Diabetes: 53:1949-1952, 2004</i>	
Chapter 6	83
Chronic PYY ₃₋₃₆ treatment ameliorates insulin resistance in C57BL6-mice on a high fat diet	
<i>Submitted</i>	
Chapter 7	93
Ghrelin differentially affects hepatic and peripheral insulin sensitivity in mice	
<i>Diabetologia: in press</i>	
Chapter 8	105
Summary and conclusions	
Samenvatting en conclusies	115
Curriculum vitae	127

