University of Groningen

Brain-selective nutrients in pregnancy and lactation

Stoutjesdijk, Eline

DOI:
[10.33612/diss.146373942](https://doi.org/10.33612/diss.146373942)

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:
2020

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

Citation for published version (APA):
Stoutjesdijk, E. (2020). *Brain-selective nutrients in pregnancy and lactation*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen. <https://doi.org/10.33612/diss.146373942>

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).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

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.

Brain-selective nutrients in pregnancy and lactation

Eline Stoutjesdijk

rijksuniversiteit
 groningen

Brain-selective nutrients in pregnancy and lactation

Proefschrift

ter verkrijging van de graad van doctor aan de
Rijksuniversiteit Groningen
op gezag van de
rector magnificus prof. dr. C. Wijmenga
en volgens besluit van het College voor Promoties.

De openbare verdediging zal plaatsvinden op
woensdag 9 december 2020 om 12.45 uur

door

Eline Stoutjesdijk

geboren op 24 juli 1986
te Dirksland

Eline Stoutjesdijk

Brain-selective nutrients in pregnancy and lactation

Dissertation University of Groningen, the Netherlands

The studies presented in this thesis were supported by the Province of Drenthe, the province of Groningen and the Ministry of Economic Affairs, the Netherlands and SNN (Project T1003).

Financial support by the University of Groningen, University Medical Center Groningen, Graduate School for Drug Exploration (GUIDE) for the publication of this thesis is gratefully acknowledged.

ISBN: 978-94-034-2583-2 (printed version)

ISBN: 978-94-034-2582-5 (digital version)

Cover design & lay-out: Marilou Maes, persoonlijkproefschrift.nl

Printing: Ridderprint | www.ridderprint.nl

Further financial support for the printing of this thesis was kindly provided by FrieslandCampina, Natura Foundation, ChipSoft B.V. and Ziekenhuis Gelderse Vallei.

ChipSoft

© E. Stoutjesdijk 2020

All right reserved. No part of this publication may be reproduced, copied, modified, stored in a retrieval system or transmitted without the prior written consent of the author.

Promotores

Prof. dr. F.A.J. Muskiet
Prof. dr. I.P. Kema

Copromotor

Dr. D.A.J. Dijck-Brouwer

Beoordelingscommissie

Prof. dr. H.J. Verkade
Prof. dr. J.C. Seidell
Prof. dr. R.F. Witkamp

Paranimfen

Ing. Y. Stoutjesdijk
Dr. I.G. van der Pol-Pranger

Table of contents

Chapter 1	General introduction: Brain-selective nutrients	9
Chapter 2	Milk vitamin B₁₂ adequacy	81
2.1	Prevalence of low milk vitamin B ₁₂ in Europe, Caribbean, Africa and Asia <i>Submitted</i>	83
Chapter 3	Observational and intervention studies on vitamin D during pregnancy and lactation	105
3.1	Milk vitamin D in relation to the 'adequate intake' for 0-6-month-old infants: a study in lactating women with different cultural backgrounds, living at different latitudes <i>British Journal of Nutrition (2017), 118, 804-812</i>	107
3.2	Influence of daily 10-85 µg vitamin D supplements during pregnancy and lactation on maternal vitamin D status and mature milk antirachitic activity <i>British Journal of Nutrition (2019), 121, 426-438</i>	127
3.3	Parent vitamin D in plasma and adipose tissue during pregnancy and lactation in indigenous populations in Tanzania <i>Submitted</i>	157
Chapter 4	DHA+EPA supplements during pregnancy and lactation	181
4.1	Fish oil supplemental dose needed to reach 1 g% DHA+EPA in mature milk <i>Prostaglandines, Leukotrienes and Essential Fatty Acids 128 (2018) 53-61</i>	183
Chapter 5	Essential and toxic elements during lactation, and iodine status during pregnancy and lactation	211
5.1	Essential and toxic elements in breast milk samples from the Netherlands, Curaçao, Vietnam, Malaysia and Tanzania <i>Submitted</i>	213
5.2	Iodine status during pregnancy and lactation: a pilot study in the Netherlands <i>The Netherlands Journal of Medicine july 2018, vol. 76, no.5 210-217</i>	259
Chapter 6	Summary and epilogue	277
Appendices	Nederlandse samenvatting en epiloog	298
	Short summary	319
	Korte samenvatting	321
	Dankwoord	322
	Curriculum vitae	329
	List of publications	330