

University of Groningen

## Effects of hormone treatment on sexual functioning in postmenopausal women

Nijland, Esmé Aurelia

**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:*

2008

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

*Citation for published version (APA):*

Nijland, E. A. (2008). *Effects of hormone treatment on sexual functioning in postmenopausal women: pharmacological intervention and female sexuality*. [Thesis fully internal (DIV), University of Groningen]. [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).

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.



Effects of hormone treatment  
**pharmacological intervention and**  
on sexual functioning  
**female sexuality: a complex,**  
in postmenopausal women  
**controversial clinical and social issue**

**Met dank aan:** N.V. Organon, Oss, The Netherlands | Rugpoli Twente, Delden,  
The Netherlands | BARC, Ghent, Belgium | GlaxoSmithKline, Zeist, The Netherlands

**COVER DESIGN & LAY-OUT** Noenus Design, Soest

**PRINTED BY** Print Partners Ipskamp

**ISBN** 978-90-367-3413-4

© E. Nijland 2008

**RIJKSUNIVERSITEIT GRONINGEN**

**Effects of hormone treatment  
on sexual functioning  
in postmenopausal women**

**pharmacological intervention and female sexuality:  
a complex, controversial clinical and social issue**

**Proefschrift**

ter verkrijging van het doctoraat in de  
Medische Wetenschappen  
aan de Rijksuniversiteit Groningen  
op gezag van de  
Rector Magnificus, dr. F. Zwarts,  
in het openbaar te verdedigen op  
woensdag 14 mei 2008  
om 13.15 uur

door

**Esmé Aurelia Nijland**  
geboren op 19 juni 1970  
te Haaksbergen

**PROMOTORES**

Prof. dr. W.C.M. Weijmar Schultz

Prof. dr. S.R. Davis

**COPROMOTOR**

Dr. F.A. Helmond

**BEOORDELINGSCOMMISSIE**

Prof. dr. P.A. de Graeff

Prof. dr. J.J.D.M. van Lankveld

Prof. dr. A.G.J. van der Zee

*Opgedragen aan Chetty ter Kuile*

# CONTENTS

■ INTRODUCTION AND SCOPE OF THE THESIS	9
<b>Chapter 1</b>	<b>11</b>
Psychological context of female sexuality	
1.1 <i>History</i>	
1.2 <i>Models of the female sexual response</i>	
1.3 <i>Prevalence of Female Sexual Dysfunction</i>	
<b>Chapter 2</b>	<b>17</b>
Endocrinological context of female sexuality	
2.1 <i>Role of hormones on female sexual function</i>	
2.2 <i>Menopause and sexuality</i>	
2.3 <i>Effects of tibolone on sexual function</i>	
<b>Chapter 3</b>	<b>21</b>
Rationale for this thesis and research questions	
■ PHARMACOLOGICAL INTERVENTION AND FEMALE SEXUAL FUNCTION AFTER MENOPAUSE	<b>29</b>
<b>Chapter 4</b>	<b>31</b>
Sexual Well-Being after 50: A European Survey among Women and Physicians	
<b>Chapter 5</b>	<b>49</b>
Female Sexual Satisfaction and Pharmaceutical Intervention: a Critical Review of the Drug Intervention Studies in Female Sexual Dysfunction	
<b>Chapter 6</b>	<b>73</b>
Effects of tibolone and raloxifene on health related quality of life and sexual function	

<b>Chapter 7</b>	<b>87</b>
Effects of Tibolone versus low dose E <sub>2</sub> /NETA on urogenital complaints, sexuality and quality of life in postmenopausal women: results of a randomized controlled clinical trial	
<b>Chapter 8</b>	<b>103</b>
Tibolone and transdermal E <sub>2</sub> /NETA for the treatment of Female Sexual Dysfunction in naturally menopausal women: results of a randomized active-controlled trial	
<b>Chapter 9</b>	<b>123</b>
Tolerability aspects of tibolone versus transdermal E <sub>2</sub> /NETA treatment in postmenopausal women with FSD: results of a randomized controlled trial	
<b>Chapter 10</b>	<b>137</b>
Pharmacotherapy for Female Sexual Dysfunction: explorative analyses of a randomized controlled trial	
<b>■ INTERPRETATION OF THE RESULTS AND SUMMARY</b>	<b>155</b>
General Discussion	<b>157</b>
Summary	<b>169</b>
Acknowledgements	<b>177</b>
<b>■ APPENDICES</b>	<b>181</b>
Summary in Dutch	<b>183</b>
Measurement tools used in this thesis	<b>193</b>
Curriculum Vitae	<b>203</b>
List of Publications	<b>204</b>
List of Abbreviations	<b>206</b>





## INTRODUCTION AND SCOPE OF THE THESIS

The studies presented in this thesis have been conducted to investigate the effects of hormone therapy (HT) and tibolone on sexual function in postmenopausal women. The reason for initiating research into these effects has been the growing off-label use of tibolone by postmenopausal women experiencing sexual problems. Sufficient evidence for the effects of tibolone on sexual function and dysfunction in postmenopausal women is not available, but as tibolone does have some androgenic properties, the theory that it may therefore work as a weak androgen justifies pharmacological intervention in daily clinical practice. Thus, the main objective of this thesis has been to determine the effects of conventional hormone therapy (oestrogen and progesterone), and tibolone in particular, on sexual function in postmenopausal women with female sexual dysfunction (FSD).

All studies have been sponsored by N.V. Organon, Oss, The Netherlands. The co-authors of the presented articles have had full access to the data and data analysis.

