

**Use of steroid hormones for contraception and  
for estrogen replacement therapy in Germany  
-consideration of co- and multi-medications-**

**---Results of pharmacoepidemiological surveys of BGA  
and RKI from 1984 to 1999---**

**Inaugural-Dissertation**

**zur Erlangung des Doktorgrades  
Im Fachbereich Biologie, Chemie, Pharmazie der  
Freien Universität Berlin**

**vorgelegt von**

**Yong Du**

**aus Shanghai, Volksrepublik China**

**Berlin 2004**

**Supervised by**

**Dr. Hans-Ulrich Melchert, Dir. and Prof., Robert Koch Institute Berlin**

**Prof. Dr. Monika Schäfer-Korting, Free University Berlin**

**Reviewed by**

**Prof. Dr. Monika Schäfer-Korting, Free University Berlin**

**PD. Dr. Charlotte Kloft, Free University Berlin**

**Defended on December 16<sup>th</sup>, 2004, in the Hörsaal 269 of Institute of  
Pharmacy, Königin-Luise-Str. 2+4, 14195 Berlin**

## Acknowledgements

I would like to express my highest gratitude to Prof. Dr. Hans-Ulrich Melchert for providing me the opportunity to fulfill my dissertation under his guidance in the Robert Koch-Institute. He is not only my adviser in scientific research giving me many sparkling ideas, but also my mentor in daily life helping me from various aspects. I benefit from the daily contacts and talks with him very much, which is of vital importance for my future personal and career development. On this occasion, nothing can express my sincerest gratitude, but a Chinese proverb: A tutor for a day, the father for ever!

I would like to thank Prof. Dr. Monika Schäfer-Korting, my adviser from Free University Berlin, who gave a critical reading and expert opinions for the dissertation and the manuscripts for publication, which left me a deep impression for her profound knowledge and penetrating insight in scientific research. From her I understand what a German professor should be: strict to science while amiable to person. I'm also very grateful to PD. Dr. Charlotte Kloft from Free University Berlin for refereeing my dissertation and giving her expert opinions.

I would like to thank all the members in the Department of RKI 22 leaded by Dr. Bärbel-Maria Kurth, Dr. Wulf Thierfelder and Dr. Christa Scheidt-Nave. All of them are so friendly and so kindly, providing me an easy working atmosphere and allowing me to use the data of national health surveys for my dissertation. Particularly, I would like to thank Dr. Hildtraud Knopf for her constructive and helpful discussion with my work and Mrs. Ellen Pabel for her thorough reading for the dissertation and other publications. And I deeply appreciate Mrs. Marianne Braemer-Hauth for her constant support, especially helping me to correct my German pronunciation, always patiently and encouragingly.

I extend my sincere thanks to DAAD (*Deutscher Akademischer Austauschdienst*, German Academic Exchange Service), without its financial support, I couldn't finish my Ph D study in Germany. My sincere thanks fly also to Mrs. Heike Schädlich (Ref. 423, DAAD) in Bonn, who dealt with numerous troublesome problems concerning study and stay in Germany for me and my families.

Finally, I am deeply indebted to my wife who gave up her work in Shanghai and came to join me with our lovely daughter. Together with them and other Chinese friends as well, I spent many splendid unforgettable days in Germany. Thank you all!

## Publications

1. Melchert HU, Knopf H, Pabel E, Braemer-Hauth M and **Du Y**. Co- and multimедication in users of ASA and vitamin E drugs in the Federal Republic of Germany: results of the Federal Health Surveys 1984-1999. *Int J Clin Pharm & Ther* 2001; 39(10): 488-91.
2. Melchert HU, Knopf H, Pabel E and **Du Y**. Co- and multimедication in ASA- and tocopherol-users in Germany: results of the Federal Health Surveys. *Pharmaco-epidemiol Drug Saf* 2001; 10(suppl):S23.
3. Melchert HU, **Du Y**, Knopf H, Pabel E, Thierfelder W. Changes of lipid profiles after vitamin E supplementation: comparison with controls without any drug use: results of the German Federal Health Survey. *Pharmacoepidemiol Drug Saf* 2002; 11(suppl):S24.
4. **Du Y**, Melchert HU, Knopf H, Braemer-Hauth M, Gerding B. Caffeine concentration in serum and its association with blood lipids: results of the German national health survey 1998. *Pharmacoepidemiol Drug Saf* 2003; 12(suppl):S21.
5. **Du Y**, Melchert HU, Knopf H. Utilization of steroid hormones for contraception and for hormone replacement therapy in Germany: results of national health surveys from 1984 to 1999. *Pharmacoepidemiol Drug Saf* 2003; 12(suppl):S21
6. **Du Y**, Melchert HU. Glycemic effects of hormone replacement therapy: results of German national health surveys from 1984 to 1999. *Pharmacoepidemiol Drug Saf* 2004; 13(suppl):S209-S210
7. Melchert HU, Knopf H, Pabel E and **Du Y**. Multi- und Komedikation von OTC-Präparaten, eine Gegenüberstellung der alten und der neuen Bundesländer. *Internist. Prax.* 2004; 44, 605-619.
8. **Du Y**, Melchert HU, Schäfer-Korting M. Hormone replacement therapy in Germany: determinants and possible health-related outcomes ---Results of National Health Surveys from 1984 to 1999--- *Maturitas* (in press).
9. **Du Y**, Melchert HU, Schäfer-Korting M. Use of oral contraceptives in Germany: determinants and possible health-related outcomes---Results of National Health Surveys from 1984 to 1999--- (submitted to *Contraception*).
10. **Du Y**, Melchert HU, Knopf H, Braemer-Hauth M, Gerding B and Pabel E. Association of serum caffeine concentrations with blood lipids in caffeine-drug users and nonusers---Results of German National Health Surveys from 1984-1999--- *Eur J Epidemiol* (in press).

## Abbreviations

ATC-code	Anatomical Therapeutic Chemical code
BGA	Bundesgesundheitsamt (Federal Health Administration)
BMD	Bone Mass Density
BMI	Body Mass Index
CASH study	Cancer And Steroid Hormone study
CEE	Conjugated Equine Estrogen
CHD	Coronary Heart Disease
CI	Confidence Interval
DBP	Diastolic Blood Pressure
DHEA	Dehydroepiandrosterone
EPHMRA-code	European Pharmaceutical Market Research Association code
ER- $\alpha$	Estrogen Receptor- $\alpha$
ER- $\beta$	Estrogen Receptor- $\beta$
ERT	Estrogen Replacement Therapy
FSH	Follicle Stimulating Hormone
GDR (DDR)	German Democratic Republic (Deutsche Demokratische Republik)
GnRH	Gonadotropin Releasing Hormone
HDL-C	High Density Lipoprotein Cholesterol
HERS	Heart & Estrogen-Progestin Replacement Therapy
HR	Hazard Ratios
HRT	Hormone Replacement Therapy
LDL-C	Low Density Lipoprotein Cholesterol
LH	Luteinizing Hormone
MPA	Medroxyprogesterone Acetate
NO	Nitric Oxide
OC	Oral Contraceptives
OR	Odds Ratio
OTC-drug	Over The Counter drug
PR- $\alpha$	Progesterone Receptor- $\alpha$
PR- $\beta$	Progesterone Receptor- $\beta$
QoL	Quality of Life
RKI	Robert Koch Institute
RR	Relative Risk
SBP	Systolic Blood Pressure
SERMS	Selective Estrogen Receptor Modulators
T3	Triiodothyronine
T4	Thyroxine
Ttl-C	Total Cholesterol
WHI	Women's Health Initiative
WHO	World Health Organization