

## Introductory Remarks to Symposium 2

### The endocrine brain: shaping women`s mental health during hormonal transitions

*Birgit Derntl and Erika Comasco, Tuebingen and Uppsala, Sweden*

Throughout their lives, women experience hormonal transitions that impact brain plasticity, cognitive and emotional functions, and mental well-being. Key stages such as puberty, pregnancy, and menopause coincide with heightened vulnerability to mental disorders. Additionally, menstrual cycle fluctuations and hormonal contraception influence mental health and brain structure in different sub-groups of women. To better understand women`s mental health and enable personalized treatments for hormone-related disorders, an integrative approach combining neuroimaging, behavioral, and physiological measures is essential to explore the effects of hormonal transitions on the brain and mental health.

This symposium will address hormonal transition periods and their clinical implications for mood and brain function. Deema Awad will explore how leptin, an adipocyte-derived hormone, influences feeding and sociosexual behaviors in a menstrual cycle-dependent manner in mice. Erika Comasco will discuss how selective progesterone receptor modulators (SPRM) affect mood and brain function in women. Ann-Christin Kimmig will present findings from a longitudinal study on how oral contraceptive initiation and discontinuation impact mental health and brain architecture. Emma Fransson will examine whether sensorimotor gating—measuring the automatic inhibition of motor responses to sensory events—can predict postpartum depression during pregnancy. Finally, Anna Denninger will focus on estradiol`s role in modulating stress responses and psychological well-being post-menopause, a phase marked by a steep decline in estradiol levels.

This symposium provides valuable insights into how hormonal changes across a woman`s life shape mental health and brain function, aiming to bridge gaps in clinical research and translation.

## Symposium 2

*Wednesday, March 26, 2025  
14:30 - 16:30, Lecture Hall 102*

Chair: Birgit Derntl and Erika Comasco,  
Tuebingen and Uppsala, Sweden

- 14:30 **Opening Remarks**
- 14:35 Deema Awad, Cologne  
CONTRIBUTION OF LEPTIN SIGNALING TO THE SEX- AND ESTROUS CYCLE-DEPENDENT REGULATION OF ADAPTIVE BEHAVIORS (S2-1)
- 14:55 Erica Comasco, Uppsala, Sweden  
NEURAL CORRELATES OF CYCLIC VS. STABLE PROGESTERONE LEVELS AND THEIR RELATION WITH MOOD (S2-2)
- 15:15 Ann-Christin Kimmig, Tuebingen  
DECODING HORMONAL DYNAMICS: INSIGHTS INTO MENTAL HEALTH FROM ORAL CONTRACEPTIVE RESEARCH (S2-3)
- 15:35 Emma Fransson, Uppsala, Sweden  
PREDICTING RISK OF POSTPARTUM DEPRESSION USING NEUROPHYSIOLOGICAL MEASURES (S2-4)
- 15:55 Anna Denninger, Tuebingen  
BRAIN CHANGES AND STRESS REACTION AFTER MENOPAUSE - EXPLORING ESTROGEN'S ROLE (S2-5)
- 16:15 **Concluding Remarks and general Discussion**