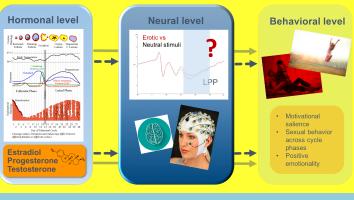
# Is the reactivity towards erotic pictures in ERPs during females' menstrual cycle influenced by sex steroids?

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### THEORETICAL BACKGROUND

Associations of sex hormones, neural reaction and behavior across the female menstrual cycle •



- Late Positive Potential (LPP) as index for stimuli induced motivational salience arousal (Hajcak et al., 2010).
- Variation of reactivity towards erotic stimuli in the in I PP dependence hormonal concentration?
- > LPP towards erotic words has been shown to be positively associated with estradid during fertile cycle phases (Munk et al., 2018)

#### **METHOD**

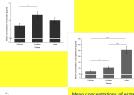
# **EROTIC PICTURE STROOP PARADIGM**

- N = 35 women (M = 24.7Y) without hormonal contraceptives
- 3 measures: follicular phase (FO)- Ovulation (OV)- & luteal phase (LU)
- Estradiol, progesterone, and testosterone samples (saliva) using Enzyme-Linked Immunosorbent Assay (ELISA)
- Task: Erotic Picture Stroop Paradigm
- 32 Scalp-electrodes; 320 Trials
- LPP: CP1 and CP2; 400-900ms poststimulus

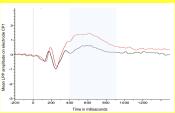


#### **RESULTS**

Manipulation check: Hormonal levels during cycle phases

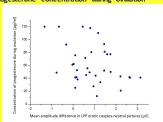


proges terone and tes tos terone during cycle phases.
Significant differences between phases indicated with \* p < .05; \*\*\* p < .01. LPP higher in reaction to erotic than towards neutral pictures



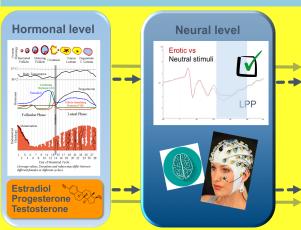
LPP in reaction to neutral (black line) vs. erotic couple pictures (red line) on electrode CP1:  $F_{(1,34)} = 49.02 p < .01$ ,  $\eta_{P2} = .590$ 

LPP in react ion to e rot ic picture s negatively a ssociate d with progesterone concentration during ovulation



LPP in reaction to pictures of erotic couples (-neutral pictures) during ovulation:  $r_{(35)} = -.351$ , p < .05

# DISCUSSION



**Behavioral level** 



- Motivational salience
- Sexual behavior across cycle phases
- Positive emotionality

- Proge stero ne du ring nega tive ly assoc iated with LPP towards erotic nictures
- No associations with estradio land reactivity towards erotic pictures in the LPP although expected
- Dist inct reaction pattern st owar ds erot io word s pictures?
- Is the strong reaction towards erotic pictures "covering" po ss ible difference s ("ceiling effect")?

- izerature:

  Higiaik, G., Mad-l'aman, A., & Olvet, D. M. (2010). Event-related potentials, emotion, and emotion regulation: an integrative review. Developmental Neuropsychology, 35(2), 129-155.

  Mank, A. J., Zoelle, A. C., & Honig, L. 2018. Fluctuations of estratiol during wo men's menstrual cycle: influences on reactivity towards erotic stimuli in the late positive potential. Psychoneuroendocrinology, 91, 11-19.