

ORIGINAL RESEARCH—ANATOMY/PHYSIOLOGY

The Quality of Sexual Experience in Women Correlates with Post-Orgasmic Prolactin Surges: Results from an Experimental Prototype Study

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ABSTRACT

Introduction. Sexual intercourse, orgasm, and sexual satisfaction are associated with well-being and improved quality of life. The pituitary hormone prolactin (PRL) may have an important role in regulating (and thus indexing) sexual satiety and satisfaction.

Aim. Physiological indices to quantify the quality and resulting satisfaction from female orgasm would be valuable. Therefore we aim to validate associations of orgasm-induced PRL surges with women's orgasm quality and subsequent sexual satisfaction.

Methods. In a prospective study, with a pre-post, single-blinded, cross-over design in a naturalistic field setting, we analyzed the correlation of women's post-orgasmic serum PRL surges following sexual intercourse with women's perceived quality of orgasm and resulting sexual satisfaction, as measured by a questionnaire.

Main Outcome Measures. PRL levels prior to and following penile-vaginal intercourse with and without orgasm, and scores from the Acute Sexual Experience Scale (ASES) on quality of orgasm and sexual satisfaction.

Results. An analysis of variance of the blood samples in nine women indicated large magnitude, significant effects of intercourse orgasm on PRL levels ($P = 0.004$, eta squared = 0.78), as well as an interaction with the effect of multiple orgasms ($P = 0.008$, eta squared = 0.80). PRL post/pre ratios and arithmetic difference correlated strongly with orgasm quality ($r = 0.85$, $P = 0.016$, and $r = 0.69$, $P = 0.08$) and sexual satisfaction ($r = 0.75$, $P = 0.05$ and $r = 0.77$, $P = 0.045$).

Conclusion. Women's intercourse orgasm induced PRL surges are strongly related to the quality of orgasm and subsequent sexual satisfaction. This implies that post-orgasmic PRL surges are an objective index of orgasm and orgasm quality. PRL might be used in future studies on basic research as well as a treatment target in sexual disorders in women. **Leeners B, Kruger THC, Brody S, Schmidlin S, Naegeli E, and Egli M. The quality of sexual experience in women correlates with post-orgasmic prolactin surges: Results from an experimental prototype study. J Sex Med 2013;10:1313–1319.**

Key Words: Prolactin; Female Orgasm; Sexual Intercourse; Human; Mid-Cycle

The first two authors have contributed equally to the manuscript.

Introduction

Aspects of sexual activity and satisfaction are linked to improved life quality and general well-being [1–4]. Regular sexual activity, especially the presence of orgasm, may have beneficial effects for both psychological and physical well-being [4].

Specifically, penile–vaginal intercourse and the orgasm it produces (in contrast to other sexual activities) is associated with greater sexual and relationship satisfaction [5,6], better emotional function [7], and greater resting heart rate variability (an index of cardiovascular autonomic function prospectively associated with longevity) [8]. Sexual satisfaction proved to be one of the strongest predictors of marital satisfaction and stability [9,10]. The strength of the relationship between sexual satisfaction and well-being seems to be particularly strong in women [11]. Although recent results have demonstrated that in women, factors such as emotional and physical closeness to the partner, self-determination realized in a partnership, satisfaction of communicational desires, and need for tenderness within the partnership correlate with sexual satisfaction, orgasm remains one of the most important aspects for a fulfilling sexual relationship [12–14].

Recent research suggests that for both sexes, the pituitary hormone prolactin (PRL) may have an important role in regulating and/or indicating sexual satiety and satisfaction [15–18].

Although previous research provided a strong argument for PRL changes being an objective measure of sexual satiety [19–21], there was a need to examine directly the association between orgasm-induced changes in women's PRL levels and women's subsequent ratings of orgasm quality and sexual satisfaction.

Aims

To elucidate the sexual satisfaction and orgasm quality indexing role of orgasm-induced PRL secretion in women, we analyzed the correlation of serum PRL changes following women's sexual intercourse orgasm with women's perceived quality of the orgasm as well as women's resulting sexual satisfaction. To augment external validity, we used a naturalistic field setting combined with assessment of PRL plasma levels.

Methods

Study Subjects

A total of 32 heterosexual couples were screened to determine their eligibility for participation in the study. Subjects were recruited via advertisements by the Swiss Federal Institute of Technology (ETH Zurich) and the University of Zurich, Switzerland. Twelve couples fulfilled inclusion criteria. The screening process included a general medical

Table 1 Characteristics of study participants

	Mean	SE	Range
Age (years)	24.6	±3.50	21–31
BMI	20.7	±2.32	17.4–23.7
Menstrual cycle length (days)	28.4	±1.19	26–30
Duration partnership (months)	37.7	±26.11	12–84

examination and a health questionnaire, incorporating gynecological history. Individuals on medication, abusing drugs/alcohol, or exhibiting endocrinological, gynecological, psychological, sexual, or any other somatic dysfunctions/disorders were excluded from the study. However, 3 of the 12 couples were excluded from the analyses due to missing data either from blood sampling or from the questionnaire. Thus, data from nine women were obtained. Characteristics of the study participants are summarized in Table 1. All women were clinically evaluated as physically and psychologically healthy non-smokers without any current medication. None of the participants had given birth. All were heterosexual, reported absence of any sexual disorder, and estimated their current relationship as very important for their well-being. All couples were sexually active and had been in a relationship for at least 12 months. Only those women who reported a regular menstrual cycle and who used non-hormonal contraception methods were included.

Written informed consent was obtained from the couples after thorough explanation of the study (oral and written). Participants were made aware of their right to discontinue participation at any time, and that their data would be confidential. All experiments were conducted in accordance with the Declaration of Helsinki. The protocol for the study was approved by the Ethics Committee for investigations involving human subjects of the Canton Zurich, Switzerland.

Study Design

The investigation was performed using a prospective, pre-post, single-blinded cross-over design.

Due to the importance of the cycle phase on sexual behavior and reproductive function [22], as well as the variation of physical influences on sexual satisfaction throughout the menstrual cycle [12], all investigations were timed during the mid-cycle/pre-ovulatory period confirmed by using a Luteinizing Hormone (LH)-based ovulation test (Evia! Ovulationstest Strip, Inopharm, Bern, Switzerland). The pre-ovulatory period was chosen to achieve data on the interaction between

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