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**THE SUCCESSFUL MEASUREMENT OF CLITORAL PULSE AMPLITUDE USING
A NEW CLITORAL PHOTOPLETHYSMOGRAPH: A PILOT STUDY**

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ABSTRACT

Background: Although the clitoris is more densely innervated and more sensitive to stimulation than the vagina, the field of sexual psychophysiology relies heavily on the measurement of vaginal, rather than clitoral, pulse amplitude as an indicator of sexual response.

Aim: To develop and test a new clitoral photoplethysmograph for the measurement of clitoral pulse amplitude (CPA).

Methods: Two versions of the new device, differing in the orientation of sensor and light source (parallel vs. angled), were tested in 15 premenopausal, sexually functional women. CPA was assessed simultaneously with vaginal pulse amplitude (VPA). The women viewed erotic and anxiety-inducing film segments of three minutes duration each, interspersed with neutral video excerpts. In addition, they were asked to indicate their subjective level of sexual arousal during and after erotic video presentations.

Outcomes: Clitoral pulse amplitude (CPA), vaginal pulse amplitude (VPA), and subjective sexual arousal.

Results: The clitoral photoplethysmograph successfully detected CPA. The quality of the signals was best for the angled sensor. Main effects of Film and the interaction between Film and Interval were stronger for the clitoral than for the vaginal device. Also, CPA followed more closely changes in intensity of sexual films than VPA. Within- and between-subject correlations between genital response and subjective sexual arousal were higher for the clitoral than for the vaginal device.

Clinical translation: Comparison of CPA with other genital blood flow measures in clinical samples is indicated and may contribute to improved physiological assessments of sexual response in women.

Strengths and limitations: Our sample was small and consisted of healthy volunteers. Future research could examine test-retest reliability, by including multiple recording sessions, and further explore the specificity of CPA by comparing sexual and non-sexual stimuli with positive valence.

Conclusion: This study presents the first instrument to successfully measure clitoral pulse amplitude (CPA).

Key Words: clitoral pulse amplitude, clitoral photoplethysmography, sexual arousal, vaginal pulse amplitude

Introduction

Genital blood flow is considered one of the key physiological correlates of sexual arousal and provides the foundation for an extensive and still growing research literature on sexual response and sexual function in women. To date, this research has largely relied on the measurement of blood flow in the vaginal walls using vaginal photoplethysmography.¹ This method allows for the extraction of two signals: vaginal pulse amplitude (VPA), which represents phasic changes in vaginal blood flow, and vaginal blood volume (VBV), considered to be an index of total blood volume.² Although both signals are responsive to erotic stimuli, they tend to be weakly correlated with each other.^{3, 4} Since the construct validity of VPA has been better established than that of VBV, and VPA has been found to be more specific to sexual stimuli, most publications that rely on the use of vaginal photoplethysmography only report VPA.

Despite the significant contribution vaginal photoplethysmography has made to our understanding of sexual arousal in women, a number of concerns about its use have been expressed.⁵⁻⁷ For example, the vascular mechanisms underlying the measurement of vaginal blood flow using photoplethysmography are not well understood.⁸ Also, a calibration method allowing transformation of its output in millivolts to known physiological events is lacking. Another limitation of the device is that it is very sensitive to movement, which can cause artifacts and signal shifts.

Recently, researchers have begun to explore the role of clitoral blood flow as an alternative and possibly more relevant physiological indicator of genital response in women. Innervation and blood supply of the clitoris are largely distinct from those of the vagina.⁹ Clitoral blood flow is supplied by the ilio-hypogastric pudendal arterial bed, through the clitoral artery, from the internal iliac artery. In contrast, the proximal part of the vagina receives blood supply from the vaginal branches of the uterine and hypogastric arteries. Also, although the neurotransmitters vasoactive intestinal peptide (VIP) and nitric oxide (NO) are both relevant to the regulation of clitoral and vaginal blood flow, nitric oxide seems particularly relevant to the erectile physiology of the clitoris.¹⁰ Furthermore,

studies have revealed differences in clitoral blood flow between women with and without sexual disorders,^{11, 12} whereas findings of studies measuring changes in blood flow in the vagina have been more mixed, with a number of studies not finding differences between clinical and control groups.¹³ In one study, using contrast-enhanced pelvic MRI, vaginal responses to erotic video increased in premenopausal but not postmenopausal women, while the vestibular bulb and clitoris showed increased responses in both groups.¹⁴ In addition to differences in blood supply and innervation, it has been argued that blood flow-related changes in the internal genitalia are less perceptible than those in the external genitalia.¹⁵ Although direct comparisons between vulvar (including clitoral) and vaginal concordance are scarce, connections between subjective and genital indices of sexual arousal tend to be stronger when genital response is measured in external tissues (e.g., using laser Doppler imaging) rather than inside the vagina.¹⁶

Three studies have reported the use of clitoral photoplethysmography to assess blood flow in the clitoris.¹⁷⁻¹⁹ In all three studies, the clitoral device was attached to the cable of a vaginal photoplethysmograph, allowing for the concurrent measurement of vaginal and clitoral blood flow. Gerritsen and colleagues (2009) were the first to introduce such a device, though they reported that clitoral pulse amplitude (CPA) could not be obtained because the alternating-current signal from the clitoral sensor was “relatively small and insensitive to increasing sexual arousal” (Gerritsen et al., *ibid*, p. 5). Instead, clitoral blood volume (CBV) was reported, thought to represent general clitoral vasocongestion rather than pulse amplitude, together with standard vaginal pulse amplitude. Gerritsen et al. (2009) and Suschinsky et al. (2015) reported correlations between CBV and VPA, which were negative in both studies. Also, Gerritsen and colleagues (2009) found that CBV, but not VPA, was predicted by changes in skin conductance, such that increased sympathetic activity was accompanied by decreases in CBV. The authors interpreted this to possibly reflect CBV’s higher sensitivity to sexual inhibition.

Although these studies provide some initial support for the feasibility of measuring CBV, and for its discriminant validity and reliability, the failure to detect CPA leaves us with an incomplete picture of the relationship between, and comparison of, vaginal and clitoral blood flow as measures of genital response. The current study introduces a newly

developed clitoral photoplethysmograph that was specifically designed to allow for the measurement of CPA. On the basis of a series of test trials, two different versions of the new instrument (i.e. with parallel vs. angled orientation of sensor and light source) were developed and compared to the simultaneous measurement of VPA in a small sample of sexually healthy women.

Material and methods

Participants

Fifteen heterosexual, healthy, pre-menopausal women participated in the study. The women were recruited through posted flyers and newspaper advertisements. Exclusion criteria included a recent history of problems with sexual arousal and/or genital pain; prior surgery of the vagina or uterus, bladder, or pelvis; exceeding 30% of normal body weight on the Metropolitan Life Table; neurological disease or psychiatric illness including depression, anxiety disorders, or a history of alcohol or substance abuse; significant cardiovascular abnormalities and other medical conditions that could compromise the participant's safety. Women were scheduled for testing within two weeks following their period and after menstrual flow was completed. The mean age of the participants was 26.6 years (SD = 4.7; min = 21, max = 38). All participants reported good overall physical health ('good' N = 9; 'excellent' N = 6). Testing took place at the Kinsey Institute for Research in Sex, Gender, and Reproduction, Indiana University, Indianapolis. The study protocol was approved by the university's institutional review board (IRB). Subjects received \$50 for their participation.

Apparatus

Vaginal and clitoral blood flow were measured simultaneously and continuously throughout the study. Vaginal blood flow was measured using a vaginal photoplethysmograph (Coos, Inc., the Netherlands). This tampon-shaped device is made of clear acrylic plastic and contains a light-emitting diode and a light-sensitive phototransistor. The signal of the vaginal photoplethysmograph was sampled at 500 Hz and VPA was obtained by applying a band-pass filter (0.5-30 Hz).

Clitoral blood flow was measured using a newly developed instrument which included a parallel and an angled version, referring to the orientation of the sensor and light source towards each other (Figure 1). For the angled version, the sensor and the light source were oriented towards each other at a 90-degree angle (Figure 1A). The light source of the other, parallel version was aimed directly at the photosensor (Figure 1B). During initial tests, the clitoral sensors were kept in place using a custom made elastic strap band. However, placement turned out to be challenging and the stability and quality of the signals was inconsistent. Further pilot testing revealed that the signals were more stable and of higher quality when participants were asked to wear spandex shorts over the sensor rather than using a strap band. Participants indicated this procedure to be easy and comfortable to use throughout the experimental session. Participants were asked to sit in a reclining chair and were provided with spandex shorts and a towel to cover their lap. Data were recorded using a Biopac system (MP150; UIM100C) and sampled at 500 Hz. CPA was obtained by applying a band-pass filter (0.5-30 Hz). After each use, the vaginal and clitoral photoplethysmographs were cleaned with water and soap, placed in Enzol enzymatic detergent, and disinfected using Cidex OPA (ortho-Phthalaldehyde 0.55%).²⁰

Procedure and Stimuli

Upon arrival, the experimental procedures were explained and informed consent was obtained. Following this, the participants were carefully instructed about the placement of the vaginal photoplethysmograph and the two versions of the clitoral device. Instructions were provided and placement was demonstrated on artificial genitalia. The order in which the two versions of the clitoral sensor (parallel and angled version) were used was counterbalanced across participants. The subject was asked to place the vaginal photoplethysmograph and one of the two clitoral devices and to notify the experimenter through the intercom when the devices were in place. Subjects were shown 3-minute excerpts of erotic and anxiety-inducing film clips preceded and separated by 8-minute neutral film clips. The erotic clips were presented before the anxiety-inducing ones, resulting in the following order: Neutral – Sexual – Neutral – Anxiety, for each sensor. The erotic clips depicted a consensual heterosexual encounter (1 minute petting and kissing, 1 minute oral sex, 1 minute penile-vaginal intercourse) taken from commercially available

erotic movies. The anxiety-inducing excerpts were taken from ‘The Silence of the Lambs’. Neutral film excerpts were taken from travelogue films.

Self-reported level of sexual arousal was assessed continuously through use of a lever, ranging from 1, indicating no sexual arousal, to 100, indicating maximum sexual arousal. In addition, participants were asked to indicate their subjective level of sexual arousal after completion of each condition using a single-item rating (ranging from 0, not at all, to 10, very strongly).

After the first trial, subjects completed an identical procedure with the other version of the clitoral device. Subjects were asked to leave the vaginal photoplethysmograph in place while switching the clitoral devices. Subjects were interviewed about their experience of the fit and comfort of the instrument at completion of the session.

Data Analysis

Peak-to-trough amplitude was calculated for all pulses recorded in a trial, and the mean of these amplitude values was calculated for each interval. Potential artefacts were identified by examining peak-to-trough values that were three SDs above or below each participant’s mean peak-to-trough value for the trial in question (data were inspected for artefacts through visual inspection of the waveforms by two independent researchers). Segments of artefacts or missing data were replaced by the mean of the surrounding intervals during the trial.

The data were binned in 20-second intervals for each 3-minute film clip, resulting in 9 intervals for each instrument. Baseline scores were computed by averaging the last two minutes of the 8-minute neutral film clips. Difference scores were used to calculate VPA and CPA. Within-subject correlations were calculated for both clitoral sensors and the vaginal probe and their respective baselines. Individual within-subject correlations were transformed to Fisher’s z , whereby $z = 0.5 \times \ln \frac{(1+r)}{(1-r)}$, before averaging. The average Z score for each condition was retransformed to a correlation score using

$$r = \frac{e^{\left(\frac{2Z}{\ln 2}\right)} - 1}{e^{\left(\frac{2Z}{\ln 2}\right)} + 1}.$$

To assess sensitivity of the genital response to erotic stimuli, repeated-measures using CPA and VPA difference scores, with Film (Sexual, Anxiety) and Interval (1-9) as within-subjects factors, and order of device as within-subject factor were used. Mauchly's sphericity test revealed a violation of sphericity for within-subjects factors (Film and Interval). Repeated-measures ANOVA within-subject factors Film and Interval are corrected and will be reported using Greenhouse-Geisser. Although data collection would have allowed for the analysis of VBV and CBV, due to the small sample size we only focused on the comparison of VPA and CPA. However, non-inferential statistics (correlations) were used to examine the associations among VPA, CPA, VBV and CBV. Return-to-baseline after the erotic stimulus was assessed comparing the mean of the first baseline measurement with the neutral return-to-baseline stimulus after the erotic stimulus. An ANOVA was conducted with the two baselines as within-subject factor, and order of the clitoral sensor as between-subject factor.

Results

Artefacts and signal processing

The signals were of good quality (see Figure 2 for representative examples of CPA, VPA, and subjective sexual arousal for two participants), with less than 2% of the signals affected by artefacts (pulses disrupted by artefacts were replaced with the average of the surrounding values), and no significant differences in numbers of artefacts between clitoral and vaginal instruments or between the two clitoral devices. Albeit peak-to-trough values and CPA were registered by the parallel clitoral sensor as well, the signal-to-noise ratio was higher for the angled sensor. Also, for two subjects the data obtained from the parallel sensor was unusable due to low-quality signals. Clitoral pulse amplitude data described hereafter are data collected using the angled clitoral sensor only. Results were analysed for 13 participants. Seven participants used the angled sensor first, and six subjects first used the parallel sensor.

Sensitivity to erotic stimuli

A repeated-measures ANOVA using CPA difference scores, with Film (sexual, anxiety) and Interval (1-9) as within-subjects factors, and Order (angled/parallel, parallel/angled) as

within-subject factor, revealed a significant main effect of Film ($F_{1,11} = 10.498$, $p = 0.008$, $\eta^2 = 0.488$), showing higher sexual arousal with sexual film clips compared to film clips with anxiety-inducing content. Furthermore, we found a main effect of Interval ($F_{2,04} = 4.16$, $p = 0.028$, $\eta^2 = .275$) which was driven by a significant interaction between Film x Interval ($F_{2,99} = 5.954$, $p = 0.002$, $\eta^2 = 0.351$) which showed a significant increase in CPA over time during the erotic condition as stimulus intensity increased (Figure 3a). No significant main or interaction effects were found for Order.

For VPA, a repeated-measures ANOVA showed a significant main effect of Film ($F_{1,12} = 5.875$, $p = 0.034$, $\eta^2 = 0.348$) and a significant main effect of Interval ($F_{2,938} = 5.716$, $p = 0.001$, $\eta^2 = 0.391$), but no significant interaction between Film x Interval ($F_{1,12} = 2.411$, $p = 0.343$, $\eta^2 = 0.094$) (Figure 3b).

Return to baseline

Return-to-baseline was successful for both VPA and CPA. There were no differences in mean VPA ($F_{12} = .192$, $p = .669$) or mean CPA ($F_{12} = .638$, $p = .440$) during the first baseline and the return-to-baseline periods.

Within-subject correlations

Seven participants did not indicate any feelings of sexual arousal during the sexual stimulus presentation (i.e., they did not move the lever at all or not beyond 1 on the scale of 1-100). These seven participants were excluded from the analysis of correlations between self-reported level of subjective sexual arousal and genital response. For the remaining eight participants, within-subject correlations were higher for the clitoral device (average correlation for CPA: $r = .60$; min $r = .38$, max $r = .78$) than for the vaginal device (average correlation for VPA: $r = .43$; min $r = -.29$, max $r = .81$). Variability in correlations between self-reported level of subjective sexual arousal and genital response was higher for the vaginal device ($SD = 0.36$) than for the clitoral device ($SD = 0.15$). Furthermore, all correlations between reported subjective sexual arousal and CPA were significant (max $p = 0.03$).

Within-subject correlations between VPA and CPA were calculated for thirteen participants. The average within-subject correlation between VPA and CPA was $r = .33$ ($SD = 0.31$). However, correlations ranged from $r = -.41$ to $r = .85$.

Overall, we found a positive average correlation between VPA and VBV (mean $r = .14$, $SD = .42$) and a negative average within-subject correlation for CPA and CBV (mean $r = -.34$, $SD = .43$). Descriptive statistics on within-subject correlations between the different measures of genital response can be found in Table 1.

Between-subjects correlations

Only one participant did not indicate any feelings of sexual arousal on the single item report following the sexual stimulus presentation (i.e., giving a score of 1 on the scale of 1-10). The average level of self-reported sexual arousal following the erotic film was 4.53 ($SD = 2.20$). As was found for the within-subject correlations, the correlation between genital responses and subjective sexual arousal was higher for the clitoral device ($r = .69$; $p = 0.006$) than for the vaginal device ($r = .51$; $p = 0.075$). The between-subjects correlation between VPA and CPA was $r = .51$.

There was a 0.74 ($p = 0.002$) correlation between subjective sexual arousal measured continuously using the lever and subjective sexual arousal measured after the sexual stimulus presentation using a single item rating scale.

Comfort and placement of the clitoral device

Overall, most subjects indicated the clitoral device was easy to place (scale min. = 0 ‘not at all’, scale max. = 100 ‘extremely’; mean angled clitoral device = 70). Also, and consistent with the small number of movement artifacts, the device stayed in place well throughout the experiment (scale min. = 0 ‘not well at all’, scale max. = 100 ‘extremely well’; mean angled clitoral device = 83.64). Furthermore, subjects were asked (scale min. = 0 ‘not at all’, scale max. = 100 ‘very strongly’) how much the clitoral device ‘pinched’ their clitoris (mean = 9.09), how much the clitoral device ‘pinched’ their labia (mean = 7.27), how much pressure the clitoral device put on their clitoris (mean = 9.09), and how much pressure the clitoral device put on their labia (mean = 4.54). While subjects said they were aware of the presence of the clitoral device during presentation of the film clips,

scores for awareness were rather low (mean = 28.18), and discomfort of the device was very low (mean = 7.27).

Discussion

The newly developed clitoral photoplethysmograph successfully measured clitoral pulse amplitude (CPA). Previous attempts to measure clitoral blood flow using photoplethysmography reported on the successful measurement of CBV but not CPA.¹⁷⁻¹⁹ In those studies it was found that CBV successfully differentiated between stimulus content; however, effect sizes were larger for VPA compared to CBV.¹⁹ In the current study, we found larger effect sizes for CPA compared to VPA in differentiating between stimulus conditions. Additionally, the amplitude of the clitoral pulse signal followed more closely the changes in stimulus intensity of the sexual film: VPA showed the fastest and strongest increase during early parts of the sexual video (depicting petting and oral sex), whereas the clitoral pulse signal increased more steadily over time, showing a substantial increase during the third minute, when vaginal intercourse was depicted.

As part of the development of the new clitoral device, two different designs were included in this study, a parallel and an angled version, referring to the orientation of the sensor and light source with respect to each other. While both devices detected pulse amplitude, the angled device showed a higher signal-to-noise ratio (with overall clearer pulse waves). Similar to the vaginal photoplethysmograph, the clitoral device was found to be relatively easy to use. Similar to the clitoral photoplethysmograph introduced by Gerritsen et al. (2009), the current clitoral device has the advantage – in contrast to other techniques assessing clitoral blood flow (e.g., Doppler ultrasonography) – that it can be put in place by the participants without supervision, after careful instruction. After testing different ways of ensuring stable placement, we found that the use of spandex shorts significantly improved signal quality and stability. The number of motion artifacts for both the clitoral sensor and vaginal photoplethysmograph was small (less than 2%). A limitation the vaginal and clitoral photoplethysmographs share, is that the output of both devices is relative, as we currently lack a calibration method allowing the transformation of their output to a meaningful. In addition, whereas penile strain gauges are available in different sizes, instruments such as the vaginal photoplethysmograph and the new clitoral device

come in one size only and do not take into account the variability in clitoral and vaginal shape and size. However, although we did not obtain high-quality signals for two participants, in the vast majority of participants the fixed size of the clitoral device did not impede measurement. I scale and known physiological events.

We found large variability in within-subject correlations among genital response measures for both the clitoral and vaginal sensors. Consistent with previous findings,^{18, 19} a negative correlation was found between VPA and CBV. In addition, negative correlations were found between CPA and CBV, and between VBV and CBV. In contrast, despite the wide range of correlations between VPA and CPA, the mean correlation between VPA and CPA was positive. All other within-subject correlations between CPA and other genital response variables, excluding CBV, were positive as well. Previously, a feedback mechanism has been suggested whereby vasocongestion of the clitoral bodies may be associated with a reduction of blood flow towards other parts of the genitalia.²¹ Although this may be relevant to the interpretation of negative associations between VBV and CBV, it does not explain the negative correlation between CPA and CBV, considering these both involve the clitoris. Consistent with previous studies we found that CBV decreased during the erotic stimulus presentation.¹⁷⁻¹⁹ All of the other signals (including VBV) increased during this stimulus. Thus, the negative correlations between CBV and the other signals could be attributed to these contrasting response patterns.

Suschinsky et al. (2015), for a shorter (5-minute) stimulus, also found a negative correlation between CBV and VPA. Furthermore, Gerritsen et al. (2009), who also found a negative correlation between VPA and CBV, speculated that vaginal blood flow, through some feedback mechanism, may be reduced when the clitoral bodies are filling with blood. Further research on the vascular physiology of the vagina and clitoral complex, and the processes that may (apparently differentially) impact clitoral and vaginal blood volume measurements, may help interpret these findings in the future.

While we found larger effect sizes for CPA compared to VPA, it is not clear to what degree this can be attributed to differences related to anatomical site or to differences in sensitivity of the clitoral and vaginal devices.

Although the findings of the present study underscore the feasibility of measuring CPA, the results should be interpreted as preliminary, given the small sample size.

Furthermore, in the present study we focused on the measurement of CPA. Validation and direct comparison to CPA, CBV and other genital response variables could be further explored in future studies with larger samples. Also, subjective sexual arousal was assessed continuously throughout stimulus presentations using a lever. While continuous measures of sexual arousal have been shown to reduce response biases,² time course analyses were limited due to insufficient use of the lever by some of the participants. Considering that only one participant indicated not experiencing *any* sexual arousal on the single-item scale that was presented after the film, it is possible that some or most of these women forgot or neglected to use the lever during the film. Previous studies used computer software providing auditory reminders if the participants' ratings remained stable for 30sec.²²

The focus of our study was to establish the feasibility of measuring CPA. Conditions were not counterbalanced, and subjects were always presented with erotic film segments before viewing anxiety-inducing videos. While analyses revealed no differences in baseline levels before erotic and anxiety conditions, and although we found no order effects, future studies could counterbalance the order of conditions. Also, participants were asked to leave the vaginal photoplethysmograph in place while switching the clitoral devices between trials.

Whereas we found some initial support for discriminant validity using nonsexual stimuli with negative valence, future research could address the question of whether CPA discriminates between erotic film clips and other film clips, including those with positive valence. For example, a study using clitoral ultrasonography failed to show differentiation between erotic and nonsexual emotional stimuli with positive valence.²³ Moreover, the current findings present an individual recording obtained during one lab visit. To examine test-retest reliability, multiple recordings completed over a short period are needed.

Our sample was small and consisted of healthy volunteers. Previous research in patients with female sexual dysfunction (FSD) and healthy volunteers did not find any differences in CBV between these groups.¹⁸ In the future, following further validation of the new clitoral device, research could explore (differences in) CPA in, for example, women who are menopausal, or women who experience problems in their sexual functioning. Furthermore, while evidence for the effect of hormonal contraceptives on sexual desire and arousal remains mixed,²⁴⁻²⁷, hormonal contraceptives have been found

(using Doppler ultrasonography) to alter clitoral arteries.^{26, 27} The new clitoral photoplethysmograph successfully measured CPA in women with and without hormonal contraceptives, but a comparison between both groups fell outside the scope of this article. In addition to the effects of hormonal contraceptives on clitoral vascular resistance, clitoral hemodynamic changes during the menstrual cycle have been found.²⁸ Future studies could more systematically explore the effects of menstrual cycle changes and (hormonal) contraceptives on clitoral pulse amplitude.

More research using CPA is required to understand the relationship between CPA and subjective sexual arousal as well as the hemodynamics of the clitoral complex and its relationship to changes in the vagina during sexual arousal. Differences in the innervation of the clitoris and vagina have previously been reported.^{8, 9} Consistent with innervation by different efferent nerves and different behavioral correlates, clitoral and vaginal self-stimulation have been found to activate differentiable sensory cortical regions. Erectile physiology of the clitoris includes a role for nitric oxide²⁹ and although the trabeculae between the vascular spaces allow for engorgement of the clitoris during sexual arousal, not much is known about the physiology and dynamics of clitoral engorgement during sexual arousal.

Conclusion

This study presents the first instrument to successfully detect and measure Clitoral Pulse Amplitude (CPA). The angled version of the clitoral photoplethysmograph was shown to be at least as sensitive as the vaginal photoplethysmograph, and correlations between genital response and subjective sexual arousal, although showing substantial variability, were higher for CPA than for VPA.

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Figure 1. Visual representation of the two clitoral medallions. (A) The two windows for the sensor and the light source were oriented in an x degrees angle. Medallion (B) shows a parallel orientation between the sensor and the light source windows. (C) Photo of the medallions.

A

B

C

Figure 2. Continuous CPA, VPA, and subjective sexual arousal as indicated through a lever for two participants.

Figure 3. ClitPtPNeg (A) vs VagPtPNeg (B)

A

B