NORMALISED OVULATION TIMING IN POPULATION USING CORE BODY TEMPERATURE MONITORING TO CONCEIVE

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Objective
To determine pattern of confirmed ovulation in users trying to conceive (TTC) with assistance of nocturnal vaginal Core Body Temperature (CBT) recorded during non-menstruation with the OvuSense system (OS).

Materials and Methods
15,332 ovulatory cycles from 6,365 OS users aged 19 to 53 (if age provided), with cycle length 11 to 190 days (90% 22 - 46).

Participants used OS to monitor CBT, having been asked to provide date of birth and length of TTC before OS use. OS produces one representative CBT for each night, assessed with a proprietary moving averaged analysis over the cycle, then confirms date of ovulation.

Ovulation day (OD) in each cycle was divided by total cycle length to provide a percentage – e.g. OD 13 in 32 day cycle would produce 13/32 = 40.6%. ODs for each cycle were then 'normalised' to a representative cycle day for a 28 day cycle, then rounded down to that normalised day (ND), e.g. 40.6% x 28 days = 11.37 = day 11.

Main outcome measures were: proportions of cycles with corresponding ND, then categorised by indicated length of trying to conceive prior to OS use.

To check if bias for OD was introduced by the OS system, a randomised sample of 125 OS cycles were checked with the ‘3/6’ rule [1]. Sample size determined using square root of the total number of cycles + 1 method. Each variance showed earlier OD determined using square root of the total number of cycles + 1 method.

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Results
Ovulation timing for the OS population shows a broad spread within the ‘normalised’ 28-day spectrum.

Inter-cycle ovulation timing with the OvuSense System as measured by % day of cycle on which ovulation was detected in relation to total cycle days ‘normalised’ to represent the equivalent day in a 28 day cycle.

Cycles aggregated in four normalised day of ovulation groups: <13, 13-16, 17-20, > 20 produces 4.55%, 40.89%, 43.80% and 10.77% cycles in each category, respectively. Analysis of these groups split by time trying to conceive prior to OS use showed no identifiable pattern.

Study Design
Retrospective, longitudinal, comparative, observational study.

Conclusions
Over 52% OS users ovulate more than 60% through their cycle. Over 10% ovulate more than 75% through their cycle. The consistent variance in sampling vs. the ‘3/6’ rule shows the OS method to provide consistent results. Traditional thinking holds that a majority of women ovulate mid-cycle, whereas only 42% of OS users show this pattern.

There appears to be no increased chance of early or late ovulation in OS users based on how long they had been trying to conceive prior to OS use.

References
3. Hurst BS, Pirrie A (2019). P-345 Atypical vaginal temperature patterns may identify subtle, not yet recognised, causes of infertility. ASRM 75th Conference.

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