

First Bluetooth® connected ovulation test with App to predict ovulation and track cycles

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Introduction

- Fertility Apps offer the convenience of menstrual cycle tracking and storage of data over multiple cycles
- However, accuracy of ovulation prediction by most free Apps was found to be very poor^{1,2}
- Therefore, an App that uploads accurate ovulation test data would be of benefit to women seeking to conceive
- This study examined women's usage and experience of the new Clearblue™ Connected Ovulation Test System

Test description

The Clearblue™ Connected Ovulation Test System is designed for home use by women who are either planning or trying for a pregnancy. This is achieved by identifying those days in a woman's cycle on which intercourse is most likely to lead to conception.

The product defines three phases of fertility through urine hormone measurement:

- Low (small chance of conceiving)
- High (increased chance of conceiving) which is achieved by the detection of a rise in the level of estrone-3-glucuronide (E3G)
- Peak (highest chance of conceiving) which predicts the day of ovulation by detecting the luteinizing hormone (LH) surge that precedes ovulation by 24–36 hours³⁻⁵

The product has a connectivity function, via Bluetooth® Low Energy. Test results are uploaded directly to a mobile App and are viewable via a cloud-based web-hosted user account. The App displays test result information and further information relating to the user's menstrual cycle, e.g. a cycle summary. The user has the ability to upload additional information to the App and user account, such as dates of menses and intercourse.

Figure 1: Clearblue™ Connected Ovulation Test System provides test results directly to a mobile App. A calendar enables viewing of daily information, and a cycle comparison screen enables easy viewing of fertility information in previous cycles.



Methods

This home-based UK study required volunteers to pair the Bluetooth® Connected Ovulation Test System to their mobile phone using the associated App, then use the App and ovulation test for one cycle. Volunteers completed a simple ease-of-use questionnaire when pairing the App with the device. After 4 weeks' usage, they completed a more detailed usability questionnaire, ranking attributes on a 7-point Likert scale

(where 1 is extremely easy to use, and 7 is extremely difficult). Volunteer results and pattern of usage were all available in the Cloud, enabling detailed analysis of user experience when using the App. Previous testing of this product had concentrated on iOS phones, therefore this study aimed to recruit Android phone users, with a smaller subset of iOS users.

Results

- A total of 191 Android users returned the ease-of-use questionnaire, and 164 returned the 4-week usage assessment forms
- A total of 27 iOS users returned the ease-of-use questionnaire, and 23 returned the 4-week usage assessment forms

Demographics

- Mean age of the volunteers was 33 years (range 22–45), and 97.9% were white European. Mean self-reported menstrual cycle length was 28 days (range 22–40)

Initial connection of device

- 84.3% of Android users and 100% of iOS users were satisfied with the experience of connecting the device to the App

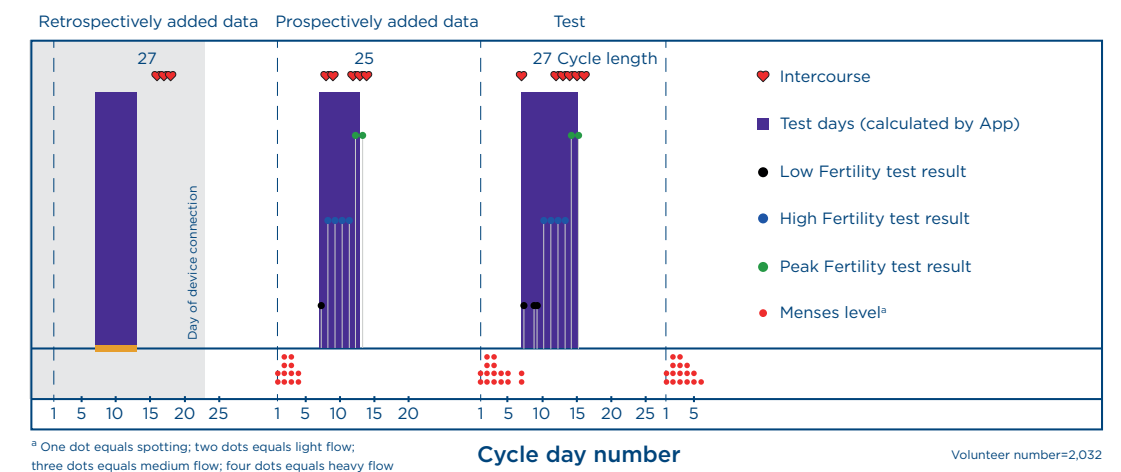
Usage experience

- Cloud data showed women conducted tests on the right days and chose to add additional data, e.g. dates of intercourse and menses. Volunteers also successfully uploaded their test results to the App, providing a central, concise record of data. An example of the pattern of usage is shown in Figure 2

Usability questionnaire after 4 weeks' usage

Questions	Android		iOS	
	n	Percentage scoring 3 or less	n	Percentage scoring 3 or less
How EASY was the test to use?	162	98.1	23	100
How EASY was the smartphone App to use?	164	93.3	23	95.7
How EASY TO UNDERSTAND was the leaflet?	164	93.3	23	95.7
How CLEAR was the advice in the smartphone App?	164	95.7	23	95.7
How EASY TO READ were the test results on the App?	162	96.3	23	95.7
How EASY was it to determine between a test stick and the wake-up stick?	164	97.6	23	95.7

Figure 2: Graphic of volunteer usage experience with the Clearblue™ Connected Ovulation Test System



Conclusions

The Clearblue™ Connected Ovulation Test System combines the convenience of an App with the accuracy and benefits of a home ovulation test.

References

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Declaration of interest

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