

The "Fit-Bit" for your Pelvic Floor

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Background

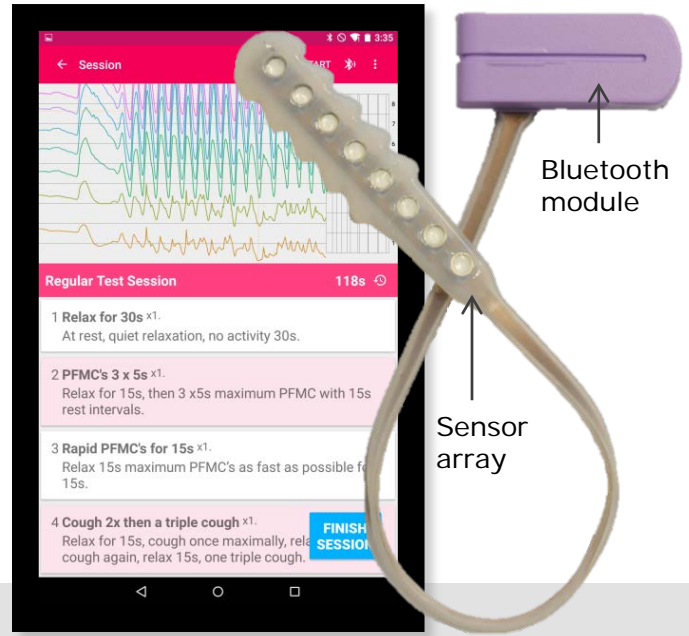
- 1 in 3 women suffer from urinary incontinence. In total 50% suffer from pelvic floor dysfunction (PFD) [1].
- Pelvic floor muscle (PFM) exercises are effective in the prevention and treatment of PFD [2]. However, 30% of women do not contract their PFM correctly [3].

- To date there is no easy, objective, and reliable measure of PFM function.

Objective: To develop a mobile and compliant intra-vaginal pressure sensing device (IVPSD), which will continuously measure the vaginal pressure profile to simultaneously evaluate PFM activation and abdominal pressure.

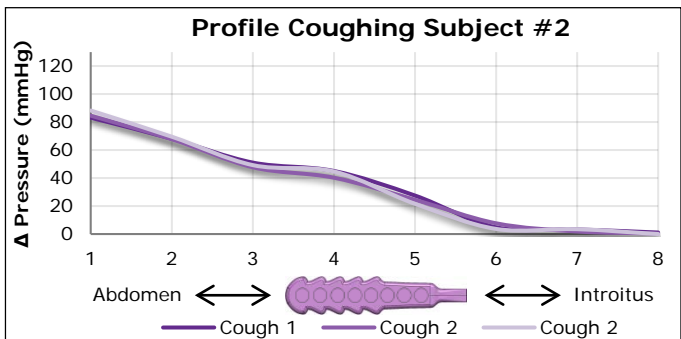
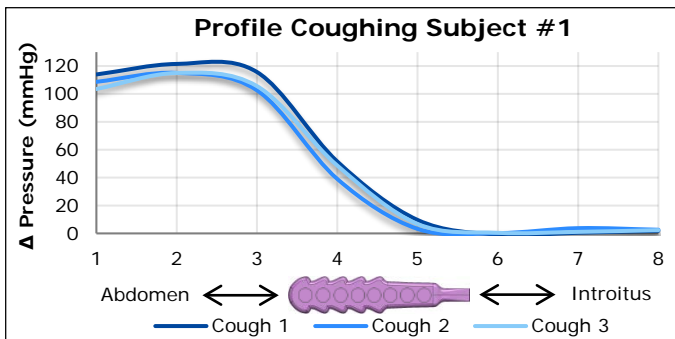
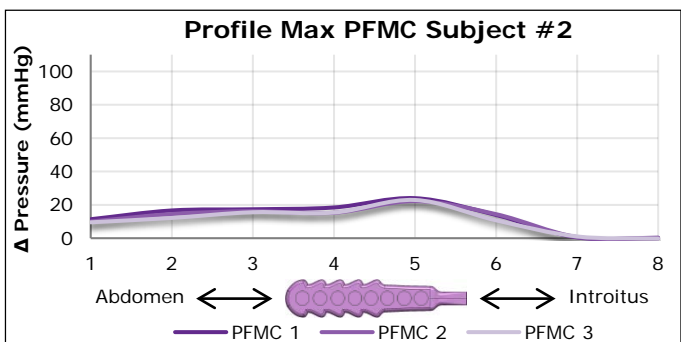
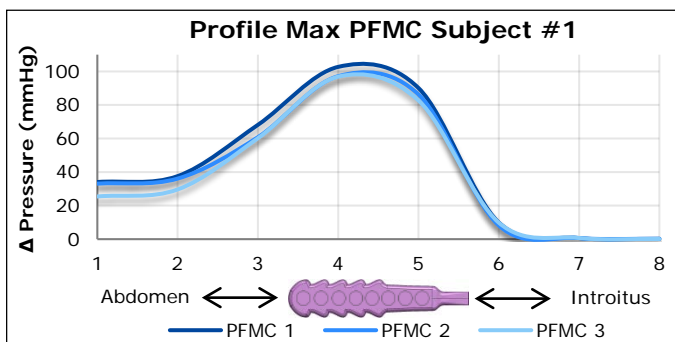
Methods

- The device consists of an array of pressure sensors; a flexible printed circuit board and an injection moulded, soft medical grade silicone cover.
- The device was tested for pressure offset drift, mechanical bending, hysteresis, hydration, as well as pressure and temperature sensitivity.
- Data was transferred via Bluetooth to an Android device and synced to the cloud.
- In-vivo testing has been conducted for multiple subjects at rest and for various exercises to evaluate repeatability and comfort.



Results

- The device was able to measure the vaginal pressure profile.
- It was described as comfortable and easy to use.
- The measurement profiles were repeatable.
- Profiles of the different exercises could be clearly distinguished.
- Baseline profiles and maximum pressures achieved during activities varied between subjects.



Summary

The device is the first of its kind to continuously measure the vaginal pressure profile at rest and during activities. More data needs to be collected to understand if the device can add to and quantify the effect of a PFM training programme.

References

- [1] Godfrey J. A. Walker & Prasanna Gunasekera, Pelvic organ prolapse and incontinence in developing countries: review of prevalence and risk factors (2010) *Int Urogynecol J* 22 127-135, [2] Kari Bø, Pelvic floor muscle training is effective in treatment of female stress urinary incontinence, but how does it work? (2004) *Int Urogynecol J* 15: 76-84, [3] P. Wein, Kavoussi, Partin, Campbell-Walsh Urology, 10th ed. Saunders Elsevier, 2012.

Disclosures Statement

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