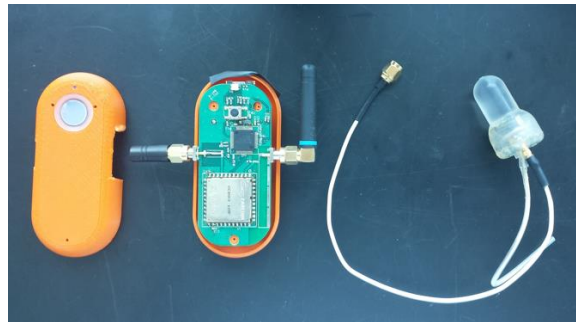


## MODIFICATION OF AN INTRA-VAGINAL PRESSURE TRANSDUCER

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Pelvic Floor Disorders (PFDs) are a set of disorders which affect the muscles, tissues and organs located in the pelvic region. These disorders include urinary and fecal incontinence, as well as pelvic organ prolapse. The severity PFDs can range from uncomfortable to debilitating. One in four women will develop a PFD during her lifetime, and one in nine women will require at least one surgical procedure to fix a PFD.

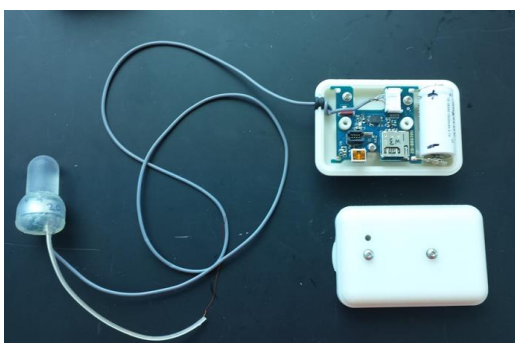
PFDs have been linked to high Intra-Abdominal Pressure (IAP), which is the internal pressure of the abdomen. IAP changes with various physical activities. As such, those in the medical research and treatment communities are interested in determining what sorts of activities have an effect on IAP, so as to better understand which activities might be modified or restricted to prevent PFDs. The goal of this research was to modify an existing intra-vaginal pressure transducer (IVT) that was designed to monitor IAP. The existing sensor was wireless, which allowed for a broader range of measurements over older, traditional measurement techniques. This attribute also meant that the device had an inherently short recording duration of 4-6 hours. The modifications made during the research were meant to extend the recording duration, which would allow longer, more complex studies of IAP to be performed.



Original IVT was wireless, but had a small battery and short recording duration

The research showed that our modifications to the device were successful in extending the battery life to approximately 5 weeks without affecting device usability. The new design is now being used for a study involving more than 500 participants and examines how IAP changes after childbirth. Ongoing research on this project involves device manufacture and modification of the design to improve the durability of the device and the ease of manufacturing.





New IVT has minimally disruptive wire and lasts ~5 weeks.

