

## **Postprocessing of pelvic floor ultrasound data: how repeatable is it?**

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### **Abstract**

#### **AIMS:**

Translabial 3D/4D pelvic floor ultrasound (PFUS) is increasingly used in the evaluation of pelvic floor disorders. Commonly, this involves the analysis of stored volume data sets by postprocessing. In this study, we aimed to assess the time requirement to reaching acceptable repeatability for commonly employed outcome measures in PFUS.

#### **METHODS:**

Between 2010 and 2013, 20 individuals from 11 countries underwent training in postprocessing of PFUS volume data sets. They undertook test-retest series ( $n \geq 20$ ) between day 2 and day 15 of training. Outcome measures tested included levator hiatus area on Valsalva, descent of the bladder neck, bladder, uterus and rectal ampulla, and rectocele depth. After an initial training session of 10-20 cases, test-retest series were undertaken between the trainee and measurements obtained by the author or senior trainees.

#### **RESULTS:**

Trainees were obstetricians/gynaecologists in training ( $n = 4$ ), obstetricians/gynaecologists or subspecialty trainees ( $n = 13$ ), medical students ( $n = 1$ ) and physiotherapists ( $n = 2$ ). A total of 58 repeatability series were analysed, obtained between days 2 and 15 of training. When second or third retest series were necessary, there always was improvement in repeatability except for one series in one individual. Satisfactory repeatability ( $ICC > 0.7$ ) was achieved by all trainees for all parameters required by them. Training lasted from 3 to 15 days, with means between 4 and 5.8 days.

#### **CONCLUSIONS:**

Postprocessing analysis of commonly used PFUS parameters can be taught to an acceptable standard within 1 week. Most commonly used ultrasound parameters obtained by postprocessing for prolapse assessment can be taught to an acceptable standard of repeatability within one week.