Assessing pelvic floor muscle function (PFM) in prostate cancer.
Using non-invasive tests to replace the DRE.

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Background:
Digital rectal examination (DRE) to assess pelvic floor muscle (PFM) function, the "Brink" test, has several limitations:
- Invasive
- Subjective
- Confronting for patients
- Sometimes painful
- Poor reliability
- Clinical reticence

Its validity is also questionable as:
- It involves a subjective measure of global 'strength', which is anatomically distant from the urethral sphincter & does not address fatigue or endurance of PFM.
- The 0-5 ordinate scale is subjective, arbitrary & has poor inter- and intra-tester reliability.
- It ignores the physiology of the pelvic floor muscles, which contain both fast (~20%; rapid contractile) and slow twitch (~80%) fibres.
- DRE is performed in supine or lateral side lying which is unrelated to clinical symptomatology.

Methods:

**EXPERIMENT 1: VALIDITY TEST**
- NF=28 post-prostatectomy patients
- PFM function assessed using:
  - DRE and SET
  - Anal perinometry (Peritron A) to record rectal sphincter squeezing pressure/PFM strength (cmH2O)

**EXPERIMENT 2: RELIABILITY TEST**
- NF=80 post-prostatectomy patients
- PFM assessed:
  - using the RRT and SET
  - 2 different testers to assess reproducibility

Results:

**Results: Validity**
- RRT assesses fast twitch muscle function
- SET assesses slow twitch muscle function

**Results: Reliability**
- Elapsed time recorded (10 sec = 1.0sec/lift)
- Relevant to functional tasks as walking, standing bladder holding & sexual function

Discussion:
The DRE is subjective and invalid for assessment of pelvic floor function.

Conclusions:
- Here we introduce novel, non-invasive tests of pelvic floor muscle function which are valid and reliable.
- The tests may be translated across populations and are ecologically relevant to clinical experience.

References:

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