Supervised pelvic floor muscle training (PFMT) as part of the conservative management of pelvic organ prolapse (POP) has a growing evidence base (Wiegersma 2014, Hagen 2014, Braekken 2010a). A Cochrane review in 2006 looking at the available evidence for conservative management found only 3 trials assessing PFMT as an intervention, and an update in 2011 found 3 further studies; the latest Cochrane update currently ongoing, shows a 4 fold increase in available trials. (Stark D personal communication 2015).

A clearer understanding of the possible mechanism for POP and the transferability of the theory of PFMT in stress urinary incontinence has helped to build the rationale for PFMT in the management of POP (Bo 2006). Recent studies demonstrating validity for PFMT have specified clearly the PFMT protocol used and over what time scale. Physiotherapists have been involved in the management of POP for many years but further research to identify the most effective conservative interventions and at what time and for how long would be useful to maximize the effectiveness of the specialist health professional.

**The Problem:**

Pelvic organ prolapse (definition): The descent of one or more of the anterior vaginal wall, posterior vaginal wall, the uterus (cervix), or the apex of the vagina (vaginal vault or cuff scar after hysterectomy). The presence of any such sign should be correlated with relevant POP symptoms. More commonly, this correlation would occur at the level of the hymen or beyond. (ICS/IUGA Joint Report on the Terminology for Female Pelvic Floor Dysfunction, Haylen et al 2010).

POP is a common problem occurring in up to 50% of women, with a prevalence of symptomatic POP of 6%- 28%, increasing with every decade of age (Swift 2005).
Women are more likely to seek treatment for POP once the leading edge of the pelvic organ prolapse is at or beyond the hymen.

The aetiology is multifactorial and associated with pregnancy and childbirth, ageing and increases in intra-abdominal pressure e.g. constipation, obesity and heavy lifting (Gyhagen 2013, Swift 2005, Hendrix 2002, Meidel 2009).

The symptoms associated with POP may include vaginal heaviness or bulge, bladder problems of leakage, emptying and overactivity; bowel difficulties of incomplete emptying, urgency and anal incontinence and sexual problems of pain, obstruction or dissatisfaction.

The Bump and Norton theoretical model for understanding pelvic floor dysfunction, further adapted by O’Dell in 2008 helps to draw the distinction between those factors which we have some influence over and those we don’t.

**Aetiology – 1998 Bump & Norton Theoretical model**

- **Predispose**
  - Collagen
  - Race/ethnicity
  - Family history

- **Incite**
  - Childbirth
  - Parity
  - Radical pelvic surgery

- **Decompensating**
  - Ageing
  - Co-morbidities
  - Mobility
  - Dexterity

- **Promote**
  - Constipation
  - Obesity
  - Occupation
  - Recreation
  - Lung disease

VERSUS

The work of Dietz, De Lancey and others to identify the anatomical changes relating to pelvic organ prolapse suggest that muscular and fascial supports of the vagina maintain an optimal position such that there is minimal descent of the vaginal walls or apex.
towards the urogenital hiatus. Deficiency of the pelvic floor muscles and fascial attachments are likely to be contributing factors to POP and studies suggest that the pelvic floor muscles are different in those with POP (DeLancey 2007, 2012, Slieker ten Hove 2010, Borello-France 2007). Conservative management targeted to those factors over which we have influence may result in demonstrable symptomatic improvement for the women with POP.

The Solution:
Pelvic floor muscle training seeks to increase the effectiveness of pelvic organ support by improving the strength, power and endurance of the levator ani. Authors have shown that the morphological changes associated with PFMT may improve organ support, reduce the urogenital hiatus and improve the timing of pelvic floor muscle contraction in response to an increase in intra-abdominal pressure.

What is less certain is what the optimal pelvic floor muscle training programme should include. Consideration needs to be given to the intensity (type of contractions/number of repetitions/length of hold/how many times a day/ for how long), level of supervision, use of additional modalities and adherence. Additionally, the level to which lifestyle measures should be addressed is not well evidenced. The aetiology of POP would suggest including lifestyle advice about weight loss, constipation and activities which increase intra-abdominal pressure such as lifting/ exercise/ chronic cough.
The 2 largest RCTs to date used the following protocol:

<table>
<thead>
<tr>
<th>Study</th>
<th>PFMT group</th>
<th>Control group</th>
</tr>
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<tbody>
<tr>
<td>447 women (225 intervention group/222 control) POP stages 1 (11%) 11 (74%) 111 (15%)</td>
<td>5 PT appts over 16 weeks PFMT (3 sets per day Up to 10 x 10sec hold, 10+ fast contractions in lying, sitting, standing) +Knack +Lifestyle advice + adherence diary</td>
<td>Lifestyle advice leaflet only</td>
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<tr>
<td>(Hagen et al 2014)</td>
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<tr>
<td>109 women (59 intervention group/ 50 control) POP stages 1 (17%) 11 (60%) 111 (22%)</td>
<td>1 PT appt/week for 3 months then 1 PT appt/fortnight for 3 months PFMT (3 x 8 -12 contractions in lying, sitting, standing) + adherence diary + exercise DVD</td>
<td>Knack, avoid straining, advised not to start or stop PFMExs</td>
</tr>
<tr>
<td>(Braekken 2010)</td>
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The POPPY trial (Hagen 2014) and the Braekken study (2010) showed that pelvic floor muscle training was effective over the trial period with a reduction in symptoms and severity of the POP. The Braekken trial additionally demonstrated an improved bladder neck and rectal ampulla elevation. It is worth noting that not all women in the Braekken trial had symptomatic prolapse at baseline.

A recent further study comparing pelvic floor muscle training with watchful waiting found that there was symptomatic improvement as measured on the Pelvic Floor Distress Inventory-20 scale particularly in the mild prolapse group, and the biggest effect was on bladder symptoms. (Wiegersma 2014)

**The Future:**

The evidence for conservative management in pelvic organ prolapse is increasing, with the skills of the specialist physiotherapist becoming an increasingly cost effective commodity. The scope of the physiotherapist in POP management has increased to include pelvic floor muscle rehabilitation, lifestyle advice and pessary use.
A 2004 survey of UK physiotherapists the majority of whom had additional training in women’s health, established that 92% were treating women with POP, most often using protocols based on stress urinary incontinence (Hagen 2004). This survey was repeated in 2013, 10 years after the original survey to assess whether there had been any change in practice. This survey is not yet published.

A further study investigated the feasibility and reliability of physiotherapists using the POP-Q technique for measurement of pelvic organ prolapse. POP-Q is used extensively in research and clinical practice. First defined by a consensus group in 1996, the POP-Q comprises 9 identified points, 6 of which are measured on full strain in relation to the hymen, 2 on full strain in relation to the urogenital hiatus, and one point measured at rest. The POP is then staged from 0 to IV.

If all the clinicians treating women with POP are using the same system for measurement, and ideally outcome measures, the communication between the health professionals will be improved. Physiotherapists who are providing conservative management need to be able to determine whether the intervention has been effective. A reliable and valid symptom score, the POP-SS will record improvements of POP.
symptoms, and physiotherapists using the POP-Q system will additionally be able to communicate any improvement in the level of POP following PFMT (Hagen 2010). There has been some discussion about whether the POP-Q system is too cumbersome for use in full in ‘normal’ clinical situations, and some studies suggest that a modified form of POP-Q is often used. (Swift 2006, Harmanjii 2014).

The video shown demonstrates that a modified POP-Q is easily performed within the context of a usual pelvic floor muscle assessment by a physiotherapist working in the area of pelvic floor dysfunction. Adding this clinical skill will improve the accuracy of communication between clinicians and help the woman with pelvic organ prolapse understand her condition. This is turn is likely to increase adherence to any management programme, and reduce anxiety about the symptoms.

References:

Wiegersma M, Panman C et al (2014) BMJ;349:g7378 Effect of pelvic floor muscle training compared with watchful waiting in older women with symptomatic mild pelvic organ prolapse: randomised controlled trial in primary care


Swift S et al (2006) Validation of a simplified technique for using the POPQ pelvic organ prolapse classification system. *Int Urogynecol J*; 17; 615-620

Harmanjii O (2014) POP-Q 2.0: its time has come! *Int Urogynecol J*; 25; 447-449