**Additional file 1**

**Questionnaire**

1. Name:
2. Age:
3. Height:
4. Body weight:
5. Sports? YES NO
6. If so, what sport?…………………………………………………….
7. How many times a week, and what time does the sport entail?……………………………………............................
8. Do you smoke? YES NO
9. Do you take any medicine? YES NO
10. If so, what?.........................................................................................
11. Are you suffering from any gynaecological or urological disease? YES NO
12. If so, from what illness do you suffer?
13. Are you suffering from any coughing disease (hay fever, asthma, chronic bronchitis and so on)? YES NO
14. How much fluid do you drink daily?

a) 0–1 L  
b) 1–2 L  
c) 2–3 L

1. Menstrual cramps on a 1–10 scale where 1 is a very mild and 10 is a very strong, almost unbearable, pain!

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10

1. Do you experience leakage of urine drops? YES NO
2. If yes, to what extent?   
   a) mild: 1–2 drops   
   b) medium: 10–15 drops   
   c) large volume: 15–30 drops
3. When does urine leak?

a) during jumping, coughing  
b) climbing stairs, during lifting  
c) at rest, without any activity  
d) Other:

1. Do you have stool or gas retention problems? YES NO
2. Do you suffer from haemorrhoids? YES NO
3. Do you suffer from constipation?  
   a) sometimes  
   b) very often  
   c) almost never or very rarel
4. Does your vagina feel dilated? YES NO
5. Do you feel the airflow in your vagina? YES NO
6. . If so, when does it occur?  
   a) during sexual intercourse  
   b) during change in position (line up)  
   c) Other:
7. After swimming or bathing in the tub, do you still feel water dripping from your vagina for a long time? YES NO
8. Do you have a sexual life? YES NO
9. If so, how often?  
   a) 1 time per month  
   b) 1 time per week  
   c) 2–4 times per week  
   d) 5–7 times per week  
   e) occasionally  
   f) Other: ……………………
10. Do you feel pain when penetrating a tampon or sexual intercourse? YES NO
11. Sexual libido on a scale of 1 to 10, where 1 is low and weak and 10 is strong libido!   
    0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10
12. Frequency of orgasm on a 1–10 scale, where 1 means very rarely and 10 is almost always during sexual intercourse!   
    0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10

**Additional file 8**

Detailed exercise regimen and estimated progression in the present trial (Sapsford, 2004; Hung, 2010)

|  |  |
| --- | --- |
| Stage | Exercise regimen |
| I. Before the training programme: Patient education | Teaching about the anatomy of the PFM, risk factors, symptoms of PFM dysfunction and feeling PFM contractions through palpation and visualisation.  *Position*: supine  *Instruction:* Try to lift your PFM as if you want to hold your urine or faeces.  *Home exercise*: Awareness through feeling PFM contractions  *Feedback*: palpation, mirror and during urination |
| II. Week 1: Diaphragmatic breathing, tonic TRA and PFM activation, warm-up, voluntary concentric and isometric PFM contractions | *Group position:* supine  *Instructions:* Try to raise the abdomen while your chest expands only minimally during inhalation, then lower your abdomen during exhalation; try to lift your lower abdomen cranially and keep pulling it in towards your spine; tensing exercises for the muscles (hip extensor, adductor) surrounding the pelvic floor; lift PFM gradually (25%, 50%, 75% and 100%) and try to hold it; try to relax PFM as far as possible by diaphragmatic breathing and hip movements. Spinal and pelvic movements are prohibited.  *Feedback*: in front of a mirror to see lower abdominal and rib movements; tactile input at the medial ASIS by both the therapist and the participant; participant’s subjective feeling of tensing response around the perineal region.  *Home exercise*: in supine position: Diaphragmatic breathing 30 repetitions × 2 sets/day; holding the TRA contraction as long as possible (target: 40 s) × 2 sets/day; contracting the gluteal and hip adductor 15 repetitions; pulling PFM up gradually (25%, 50%,75% and 100%), 5 repetitions and hold at different levels for 5–10 s × 2 sets/day. Make sure PFM are relaxed. |
| III. Week 2: PFM voluntary eccentric and quick contraction | *Prerequisites:* the participant can perform the tasks of Week 1.  *Group position:* supine  *Instruction:* Repeat the home exercises of Week 1 as a warm-up; try to let PFM down slowly from 25%, 50%, 75% and 100% and hold at different levels; try to pull PFM up quickly as far as possible and make sure PFM are relaxed.  *Feedback*: tactile input, the medial ASIS is palpated by both the therapist and the participant to check the TRA/PFM co-contraction; participant’s subjective feeling of tensing response around the perineal region.  *Home exercise*: in supine position: Diaphragmatic breathing 30 repetitions × 2 sets/day; holding the TRA contraction as long as possible (target: 40 s) × 2 sets/day; contracting the gluteal and hip adductor 15 repetitions; maximal PFM contraction 5 repetitions; pulling PFMs up gradually 25%, 50%,75% and 100%, 5 repetitions; hold at different PFM levels for 5–10 s; pull up and let down from 50% to 100%, 5 repetitions; pull PFM up quickly at 100% and relax for 30 s, 5 repetitions. All repetitions × 2 sets/day. Make sure PFM are relaxed. |
| IV. Week 3: | *Prerequisites:* the participant can perform the tasks of Weeks 1 and 2  *Group Position:* supine  *Instruction:* Try to keep the PFM contraction at 100% combined with slow movement of the limbs and trunk; pull the PFM up quickly at 100% together with fast limb movements.  *Feedback*: tactile input, the medial ASIS is palpated by both the therapist and the participant to feel the TRA/PFM co-contraction; participant’s subjective feeling of tensing response around the perineal region.  *Home exercise*: in supine position: same as the home exercise of Week 2. |
| V. Week 4: | *Prerequisites:* tonic TRA/PFM contraction can be maintained easily together with limb and trunk movements  *Group position:* lying on the side  *Instruction:* Try to keep PFM contraction at 100% combined with slow limb and trunk movements, pull PFM up quickly at 100% together with fast limb and trunk movements.  *Feedback*: tactile input, the medial ASIS is palpated by both the therapist and the participant to feel TRA/PFM co-contraction; participant’s subjective feeling of tensing response around the perineal region.  *Home exercise*: SUG in supine and SIG in sitting position: same as the home exercise of Week 2. |
| VI. Week 5: | *Prerequisites:* TRA/PFM contraction can be maintained easily together with limb and trunk movements  *Group Position:* on hands and knees  *Instruction:* Keep PFM contraction at 100% combined with slow limb and trunk movements; pull PFM up quickly at 100% together with fast limbs movements.  *Feedback*: tactile input, the medial ASIS is palpated by both the therapist and the participant to feel TRA/PFM co-contraction; participant’s subjective feeling of tensing response around the perineal region.  *Home exercise*: SUG in supine and SIG in sitting position: same as the home exercise of Week 2. |
| VII. Week 6: | *Prerequisites:* TRA/PFM contraction can be maintained easily together with limb and trunk movements  *Group Position:* sitting  *Instruction:* Keep PFM contraction at 100% combined with slow limb and trunk movements; pull PFM up quickly at 100% together with fast limb movements.  *Feedback*: tactile input, the medial ASIS is palpated by both the therapist and the participant to feel TRA/PFM co-contraction; participant’s subjective feeling of tensing response around the perineal region.  *Home exercise*: SUG in supine and SIG in sitting position: same as the home exercise of Week 2. |
| VIII.Week 7: | *Prerequisites:* The TRA/PFM contraction can be maintained easily together with limb and trunk movements  *Group Position:* standing  *Instruction:* Keep the PFM contraction at 100% combined with slow limb and trunk movements; pull the PFM up quickly at 100% together with fast limb movements.  *Feedback*: tactile input, the medial ASIS is palpated by both the therapist and the participant to feel the TRA/PFM co-contraction; participant’s subjective feeling of tensing response around the perineal region.  *Home exercise*: SUG in supine and SIG in sitting position: same as the home exercise of Week 2. |
| IX. Week 8: | *Prerequisites:* The TRA/PFM contraction can be maintained easily together with limb and trunk movements  *Group Position:* walking, steps, unstable  *Instruction:* Keep the PFM contraction at 100% combined with slow limb and trunk movements; pull the PFM up quickly at 100% together with fast limbs movements.  *Feedback*: tactile input, the medial ASIS is palpated by both the therapist and the participant to feel the TRA/PFM co-contraction; participant’s subjective feeling of tensing response around the perineal region.  *Home exercise*: SUG in supine and SIG in sitting position: same as the home exercise of Week 2. |
| X. After the training programme | The participants are advised to continue the programme for another 4 weeks to achieve sufficient muscle strength. Thereafter they are required to do the PFM-T 3 times per week, which is essential for maintaining the achieved level. |