Fitness and pelvic floor dysfunction:
what are the clinical issues and what is
the evidence?

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Why this presentation?
Because:
• An opportunity to ‘bridge the gap’
• Sufferers suffer in silence
• Incontinence is curable
• Opportunity for holistic client care
• There’s a lot of it about
  – 3.8 million Australians are incontinent, 70% are
    women
  – 1 in 3 women who have had a baby

‘Sufferers’ suffer in silence
• Incontinence is embarrassing
• If long term, leads to acceptance
• Misinformation; ageing, treatment
• TV advertising - pads
• Women more than men
• Withdrawal from physical activity
  (Physical Activity in Australia, Dept Health & Ageing 2003)
Relevance

- Withdrawal from sports & physical activity participation
- Continuing physical activity but worsening the condition by doing so

What do we mean by ‘pelvic floor dysfunction’?

- Urinary Incontinence
  - stress (SUI) approx. 50%
  - mixed -less
  - urge (UUI) -least
  - voiding dysfunction
- Faecal incontinence (FI)
  - faecal urgency (FU)
  - defaecation difficulty

What else can be associated with pelvic floor dysfunction?

- Prolapse
  - anterior vaginal wall (cystocele, urethrocele)
  - posterior vaginal wall (enterocele, rectocele)
  - Vaginal vault (Uterine descent, grade 1,2,3)
- Pelvic Pain
- Sexual Problems
- Back Pain
Anatomy of PFM - Inferior view

Corton et al. 2005

Anatomy of PFM - Superior view


Pelvic Viscera and Perineum of Female

Function of the pelvic floor

1. Support the pelvic organs
   - Resist downward movement due to raised intra-abdominal pressure (IAP)

2. Closure of urethral and anal sphincters

We need:
- PFM that is responsive to IAP and postural changes
- Fast, strong response
- Ability to relax

Risk factors for pelvic floor dysfunction – a balance

- Obesity
- High impact exercise
- Coughing
- Constipation
- Heavy lifting
- PFM function
- Trunk posture
- Physical activity
- Pelvic surgery
- Pelvic neuropathy
- Childbirth/parity
- Gender
- Increasing age

PFM strength & surgical failure rates

N=358, mean age 61y, median follow-up period 5 mths

PFM strength correlated most strongly with:
- addition surgery
- recurrent incontinence

Recurrent prolapse correlated most strongly with:
- Urogenital hiatus size

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And risk factors for the men?

- Risk factors
  - Getting older
  - Prostate enlargement
  - Trauma to pelvis
    - Falls
    - Surgery
  - Incontinence is more common in women
Cost utility of incontinence treatment

SA Omnibus Health Survey 1998

Level 1a evidence, Grade A recommendation

4th International Consultation on Incontinence

Abrams et al ICI 2009

‘Pelvic floor muscle training should be offered, as first line therapy, to all women with stress, urge or mixed urinary incontinence’

PFMT is the mainstay of physiotherapy treatment

‘Training’ for PFM
- Motor control, coordination
- Strength, power
- Endurance
- Function

(Bø & Sherburn 2005)
Looking beyond the Pelvis: Pelvic floor function as part of an abdominal capsule

- The PFM contract synergistically with lowest transversus abdominis (TrA)
- PFM are more effective in normal lumbar lordosis
  (Espalier 2001)
- This is commonly disrupted in urgency & prolapse, in 30% depressed pelvic floor when asked to perform TrA contraction alone
  (Thompson et al 2003)
- 43% of subjects abdominis (TrA)

Looking beyond the Pelvis: Understanding trunk muscle mechanisms
Pelvic floor forms base of pressurised abdominal capsule. Is there a relationship between diaphragm, trunk and pelvic floor muscles? All have postural & dynamic roles

Compromise: When respiratory demand increases postural activity of diaphragm, TrA and PFM all decrease

How does IAP affect the pelvic floor?
It's all in the physics
- The trunk is a sealed pressurised elastic cavity
- Pressure equal throughout (Pascal)
- Capsule wall tension varies according to the radius of the capsule (LaPlace)
How does IAP affect the pelvic floor?

It’s all in the physics

- The trunk is a sealed pressurised elastic cavity
- Pressure equal throughout (Pascal)
- Capsule wall tension varies according to the radius of the capsule (LaPlace)
  - PFM overpowered by the abdominals

Functional PFM training

[Image of functional PFM training]

[Image of functional PFM training with a checkmark and an X]

[Image of functional PFM training with a checkmark and an X]
Who is at risk?

Those who do activities which raise intra-abdominal pressure (IAP):
- High impact sports/activity
- Heavy lifting sports/activity
- Deconditioned status
- Chronic lung disease
- Overweight
- Constipation

Then add pregnancy ...

Risk factors: red & blue flags

Red flags
- Already incontinent or with symptoms of other pelvic floor dysfunctions
  - Loss of urine, flatus, bowel motion during training/treatment
  - Bladder or bowel urgency during training/treatment
  - c/o vaginal heaviness, bulging, pain
  - Lumbar or sacral neurological signs

Blue flags
- At risk of incontinence or other pelvic floor dysfunctions
  - Biomechanical or medical/surgical factors
    - Female
    - Older age
    - Pregnancy/postnatal
    - Elite training in high impact or weight lifting sports
    - Poor motor control patterns
    - Medical – CTissue, lung, neuro, spinal, bowel disorders
    - Diabetes
    - Medications – NSAIDS, anti-depressants, diuretics
Problem identified ... what next?

- Offer advice/treatment?
- But what is the evidence?
- Who is best placed to deliver the most effective service?

Clinical effectiveness – the 6 R’s

- Right person
- Right thing
- Right way
- Right place
- Right time
- Right results

Right person

- Strong evidence for good outcomes
  - If treated by PF physiotherapists
  - With evidence based management
- Outcomes not generalisable to other health practitioners without specific training
- Fitness leaders are at the ‘coal-face’
  - For screening women
  - Referring for a PF check
Right thing

- Self help is not the best help
  - > 30% not able to contract at first session
    (Benvenuti et al 1987, Bø et al 1988, Hesse et al 1990)
  - Only 49% increased urethral pressure during contraction
    (Bø et al 1981)
  - 25% were straining instead
    (Bø et al 1981)
- Failing is de-motivating
  - Lost opportunity
    - ‘PF exercises don’t work’
  - ‘I need surgery’ – re-operation rate is high
- Duty of care to talk about PF issues
  - Including male instructors

Right way

- Think further than the pelvic floor - to trunk mechanics
  - But don’t ignore the pelvic floor
  - And don’t think clients/athletes have got it right without checking
- Ban star jumps
- Transabdominal ultrasound??
  - Excellent biofeedback for muscle activation
  - Valid, reliable, intuitive, accepted by patients
  - But does it give us the whole picture?
  - No information on m tone, m defects, prolapse, pain etc
  - Does not qualify the US practitioner to treat PF problems

Right place

- Appropriate environment
  - Privacy to discuss PF issues
    - Eg. why not fully participating in a class
- General information placed in gyms/change rooms
- Beginning of, and during a class
  - Leaders must feel comfortable talking about the pelvis
Right time

Is now … for us as professionals

For our clients:

• Timeliness of information important
• Availability of services
• Access to services

Right results

Optimal outcomes if these principles are adhered to
And finally …

- Understand each profession’s strengths and boundaries for best:
  - Collaboration between professionals
  - For quality service
  - Patient satisfaction
- Communication between us:
  - what’s the best way?
- PF problems are complex
  - Require trained practitioners
  - Respond to appropriate management
- Be aware of the signs/symptoms
  - Be prepared to ask

References

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References


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