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Hot off the press: Recent evidence for physiotherapy in prostate cancer

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Objectives

Overview of key publications 2023 - 2024

Pelvic floor
muscle training



Physiotherapy





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Context



Quality

Implementation / Research Translation



Search strategy

1 exp Prostatic Neoplasms

2 (prostat* adj3 (cancer* or neoplasm*))

3 1 or 2

4 exp Prostatectomy

5 ("radical prostatectom*" or radical-prostatectom* or prostatectom*)

6 exp Radiotherapy

7 (radiotherap* or "radiation therap*" or radiation-therap*)

8 6 or 7

9 3 and 8

10 ("androgen deprivation therap*" or androgen-deprivation-therap* or "ADT")

11 3 or 4 or 5 or 9 or 10

12 ("pelvic floor muscle training" or pelvic-floor-muscle-training or "pelvic floor muscle exercis*" or pelvic-floor-muscle-exercis* or "PFMT")

13 kegel*

14 exp Physical Therapy Modalities

15 Physical Therapists

16 (physio* or "physical therap*" or physical-therap*)

17 12 or 13 or 14 or 15 or 16

18 11 and 17

19 limit 18 to yr="2023-Current"



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Muscle function

Post prostatectomy incontinence and pelvic floor muscle training

Sexual function

Education

Service Implementation



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Muscle Function



Pelvic Floor Muscle Function and Its Relationship with Post-Prostatectomy Incontinence

Cecile T. Pham,¹ Manish I. Patel,^{1,2} Sean F. Mungovan^{3,4}

¹Specialty of Surgery, Faculty of Medicine and Health, University of Sydney, Camperdown, New South Wales, Australia ²Department of Urology, Westmead Private Hospital, Westmead, New South Wales, Australia ³Westmead Private Physiotherapy Services, Westmead, New South Wales, Australia ⁴The Clinical Research Institute, Westmead, New South Wales, Australia

- Relationship between PPI and PFM displacement
- SUS, BC, and PR displacement decreased significantly 3 weeks post-operatively (P = 0.042, P = 0.002)
- Continent men exhibited significantly greater SUS displacement than incontinent men at 3 weeks postoperatively (P = 0.029)
- Following RARP
 - Significant decrease in PFM function after RARP
 - Significant recovery between 3 and 6 weeks
 - SUS activation greater in continent patients at 3 weeks post-operatively-



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Post prostatectomy incontinence and pelvic floor muscle training



Included comparisons:

- PFMT versus no treatment, sham treatment or verbal and written instructions
- PFMT plus biofeedback versus no treatment, sham treatment or verbal and written instructions
- Electrical or magnetic stimulation versus no treatment, sham treatment or verbal and written instructions
- Lifestyle interventions versus no treatment, sham treatment or verbal and written instructions
- Combinations of conservative treatments versus no treatment, sham treatment or verbal and written instructions
- PFMT plus electrical stimulation versus PFMT or other exercise alone.



Cochrane Database of Systematic Reviews

Conservative interventions for managing urinary incontinence after prostate surgery (Review)

Johnson EE, Mamoulakis C, Stoniute A, Omar MI, Sinha S

"There is a lack of high-certainty evidence regarding the use of conservative interventions for urinary incontinence following prostate surgery. Existing trials lack standardisation regarding the PFMT technique, protocols for combining conservative treatments, outcome measures for assessing subjective and objective response as well as quality of life and the reporting of adverse events."



Reviews: Pre-op training

Geng et. al.

- 15 studies
- Pre-operative
- Studies
- Number of
- Duration
- Outcome
- 1

Confounding factors

- **Low number of examined studies**
- **Heterogeneity in:**
 - Treatment protocols
 - Outcome measures
 - PFMT instructions
 - Training discrepancies (anal vs SUS/BC)
- **Variance in pre-op training timeframes**
 - Ranging from 1 day to 4 weeks

Conclusion

- PFMT
- reduce
- postop
- Addition
- significant
- recovery of

groups who
pre-
months
ur of
groups
post-op.

The effect of perioperative pelvic floor muscle exercise on urinary incontinence after radical prostatectomy: a meta-analysis

Erkang Geng¹, Sifan Yin¹, Yulin Yang¹, Changxing Ke¹, Kewei Fang¹, Jianhe Liu¹, Daoqi Wang¹

Preoperative pelvic floor muscle exercise for continence after radical prostatectomy: a systematic review and meta-analysis

Luqiang Zhou¹, Yu Chen¹, Xiaojuan Yuan, Lijing Zeng, Jingzhen Zhu and Ji Zheng*



Reviews: Post-op training

Urinary incontinence rehabilitation of after radical prostatectomy: a systematic review and network meta-analysis

Kai Yu¹, Fan Bu², Tengteng Jian¹, Zejun Liu¹, Rui Hu¹, Sunmeng Chen¹ and Ji Lu^{1*}

Am J Clin Exp Urol 2023;11(4):320-327
www.ajceu.us /ISSN:2330-1910/AJCEU0149176

Original Article

Impact of exercise on continence in prostate cancer patients post robotic assisted radical prostatectomy: a systematic review

Shirin Razdan¹, Krunal Pandav¹, Joshua Altschuler¹, Kate Moody¹, Lily Martin², Hiten D Patel³, Nihal Mohamed¹, Zachary Dovey¹, Ashutosh K Tewari¹



Systematic Review

Physiotherapy as an Effective Method to Support the Treatment of Male Urinary Incontinence: A Systematic Review

Agnieszka Mazur-Bialy^{1,*}, Sabina Tim¹, Daria Kołomańska-Bogucka¹, Bartłomiej Burzyński², Tomasz Jurys² and Natalia Pławiak³

Non-pharmacological and nonsurgical interventions in male urinary incontinence: A scoping review

Ying Zhang BSc (Nursing), RN, PhD Candidate^{1,2} | Sijia Hou BSc (Nursing), RN, PhD Candidate^{1,2} | Ziyi Qi BSc (Nursing), RN, Master Candidate^{1,2} | Siyuan Wu BSc (Nursing), RN, Master Candidate^{1,2} | Keping Zhu RN, Head Nurse¹ | Wei Wang PhD, MSc, RN, Professor¹



Reviews: Post-op training

Modalities

- PFMT, PFMT + biofeedback AND e/s, PFMT + electrical stimulation

PFMT approaches:

- Performing 30 contractions per day for 12 weeks most frequently reported

Outcomes:

- PFMT with or without adjunctive therapies improves post-operative UI
- Physiotherapist guided and supervised PFMT has better outcomes at 3 months post-op
- Less treatment effect at 6 months
- BFB or electrical stimulation shows some improvement, but generally conflicting results

Recommendations:

- PFMT should be Individualised and supervised

Limitations:

- Low number of studies
- Heterogeneity
 - (E.g. 17 treatment methods identified in 42 studies (Yu, et. al.))



Reviews: Factors influencing participation and engagement

REVIEW ARTICLE



Factors influencing engagement in pelvic floor muscle exercise following radical prostatectomy: A scoping review

Yousef Qan'ir PhD¹ | Lixin Song PhD, FAAN² | Kathleen Knafl PhD, FAAN³ | Paschal Sheeran PhD^{4,5} | Hung-Jui Tan MD, MSHPM^{4,6} | Mohammed Shahait MD⁷ | Ahmad AL-Sagarat PhD⁸

Barriers and facilitators of the implementation of the application of pelvic floor muscle training in patients with prostate cancer: a scoping review

Lijuan Wang, Yaqin Li, Ziyi Qi and Wei Wang*

Department of Nursing, The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China

- Factors that **enhance** participation:
 - Regular follow ups and supervised sessions
 - HPs with technical skills to instruct PFMT
 - Encouragement from social networks
 - Symptomatic improvement
- **Recommendations:**
 - Approaches should be individualised and culturally sensitive
 - Behaviour change theories may assist in optimising participation

Barriers

- Clinician specific
- Lack of clinician skill or access to equipment
- Inconsistent definitions of continence and UI
- Inappropriate monitoring or supervision
- Poor patient adherence and motivation
- Lack of financial feasibility for patients

Facilitators

- Symptomatic improvement
- Ease of performance



RCTs

- **Control group:** PFMT verbal instructions and lifestyle advice
- **Intervention group:**
 - Physiotherapist supervised pre-op PFMT on 3 occasions, 2 months pre-op
 - Continued support to 12 months post-op
 - x 7 visits total
 - Program 3 x daily
 - Sustained holds 6-8 seconds
 - Rapidly initiated contractions
- **Outcomes:**
 - 24hr pad weight significantly lower in IG
 - Continence achieved significantly higher in the IG at 12 months
 - Enhanced PFM function 6 months post-op

BJU Int 2024 doi:10.1111/bju.16369

Original Article



Physiotherapy for continence and muscle function in prostatectomy: a randomised controlled trial

Mifuka Ouchi¹ , Takeya Kitta³ , Hiroki Chiba², Madoka Higuchi², Yui Abe-Takahashi¹, Mio Togo¹, Naohisa Kusakabe¹ , Sachiyo Murai¹, Hiroshi Kikuchi² , Ryuji Matsumoto¹, Takahiro Osawa², Takashige Abe¹ and Nobuo Shinohara¹

Limitations:

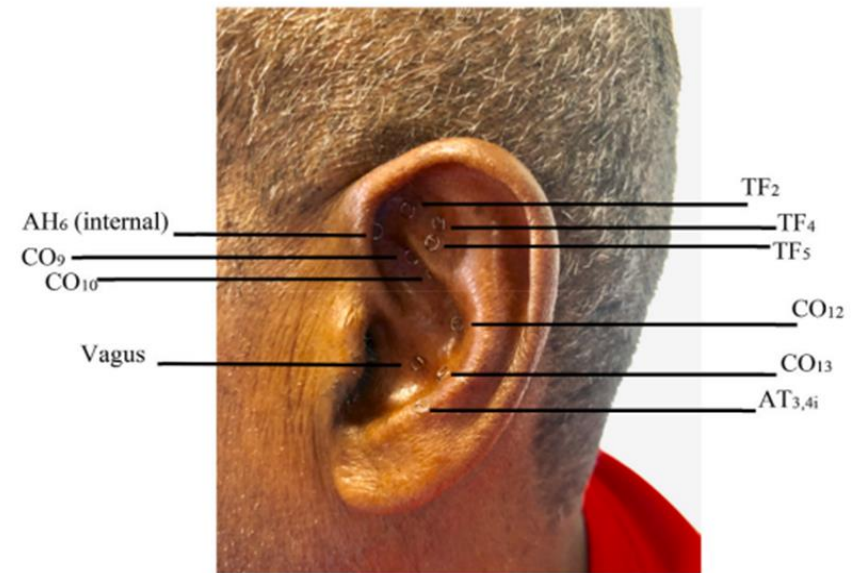
- Intra anal probe used to measure PFM function
- No urodynamic factors assessed as potential bladder function/continence confounders

RCTs

- **Control group:**
 - Post-op PFMT alone
- **Intervention group:**
 - Post op PFMT
 - Auricular acupuncture therapy for 8 weeks
- **PFMT regime:**
 - Rapid contractions x 15-20
 - Sustained contractions 5:5 secs x 15-20
 - Anterior prompting
 - 4 x positions prone, sitting, standing and walking
 - 3 x daily
- **Outcomes:**
 - No difference in one hour pad test
 - Statistically significant difference in QOL on KHQ in favour of IG.

Effectiveness of auricular acupuncture and pelvic floor muscle training in the management of urinary incontinence following surgical treatment for prostate cancer: A randomized clinical trial

Cissa Azevedo^{a,*}, Luciana Regina Ferreira da Mata^b, Livia Cristina de Resende Izidoro^c, Caroline de Castro Moura^d, Bianca Bacelar Assis Araújo^b, M. Graça Pereira^e, Tânia Couto Machado Chianca^b





Electrical stimulation

Post-operative electrical stimulation

- 20 minutes per session
- 3 days per week, for 1-3 months
- 35Hz, 80-100% intensity
- ?? Perineal
- ?? Not an adjunct to PFMT

Outcomes

- 48% vs 36% dry at 1 month
- 76% vs 52% dry at 3 months
- 84% vs 72% dry at 6 months
 - ? Dry is self-reported on ICIQ-UISF



CLINICAL STUDIES

Postoperative Functional Results after Laparoscopic Radical Prostatectomy Using Adjuvant Pelvic Electrostimulation

V. Ghirca, O. Martha, D. Porav-Hodade, C. Chibeleian, R. Vascul, O. Vida, T. Reman, M. Guliciuc, C. Todea-Moga

Department of Urology, "George Emil Palade" University of Medicine, Pharmacy, Science and Technology, Târgu Mures, Romania

Electrical stimulation- what is actually happening?



Differences in activation of pelvic floor muscles in response to electrical stimulation in men using different electrode montages

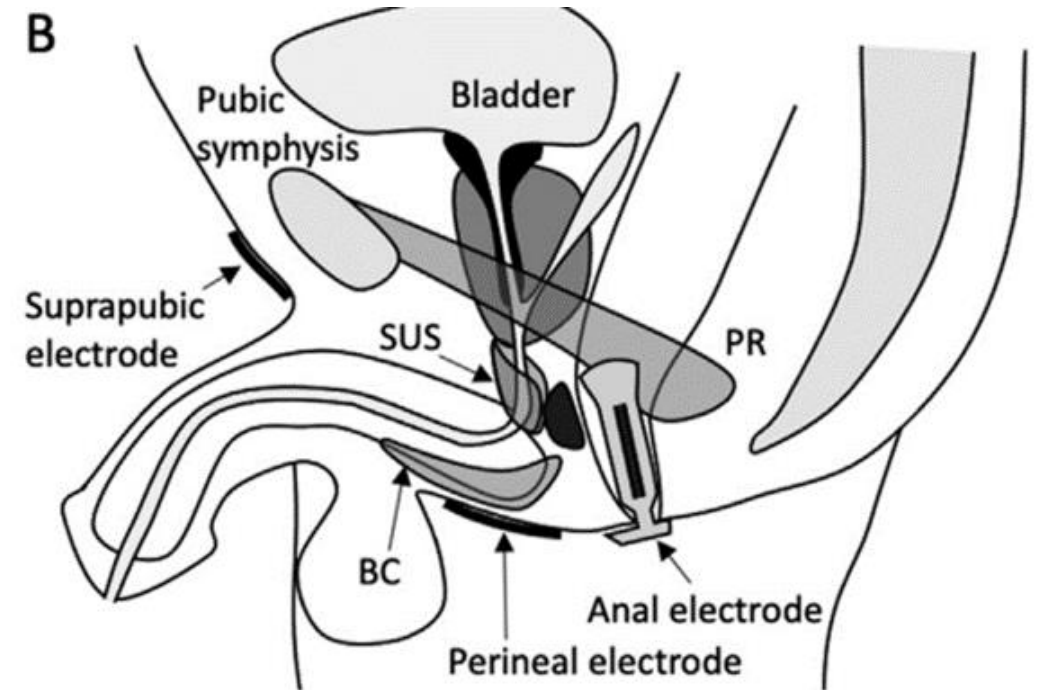
David Cowley^a, Ryan E. Stafford^{a,b}, Rachel S. Worman^a, Paul W. Hodges^{a,*}



- N = 10 healthy men
- Intra-anal, perineal, perineal-suprapubic
- ALL electrodes elicited contractions of SUS, BC and PR
- Motor thresholds lower for anal stimulation

Implications

- Needs to suit purpose
- Perineal to suprapubic = UVJ descent
- UVJ descent = determinant PPI





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Sexual function



Running Title: Physiotherapy on Erectile Dysfunction - Afshar et al.

The effect of Physiotherapy on Erectile Dysfunction Secondary to Prostatic Adenectomy: A Randomized Control Trial Study

Intervention group

- 10 sessions of PFMT and manual therapy
- Friction massage on ischiocavernosus and bulbocavernosus
- Release directed in a circular motion to the tip of the penis
- Performed for 10 minutes.
- PFMT
 - 6 x sets daily
 - X 10 rapid initiation contractions
 - 10:10 secs x 10 repetitions

Control group

- PFMT only (one month program)

Outcomes

- EHS scores significantly higher than control group ($p < 0.001$)
- IIEF total score higher in intervention group

Conclusion: Friction massage applied with daily PFMT can optimize self-reported erectile function.



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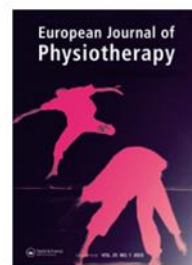
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Education



- Surveyed Australian entry level physiotherapy programs
- 15/22 response rate
- 14/15 covered male pelvic health content
- 1-16 hours across the curriculum
- **Topics**
 - Pre and post-surgical rehabilitation
 - BPH
 - Common bladder problems
 - An introduction to erectile dysfunction
- **Barriers**
 - Space in the curriculum
 - No women's and men's health clinical placements
 - Male pelvic health content incorporated to oncology and women's health subjects



European Journal of Physiotherapy



ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/iejp20

Women's and men's health physiotherapy, the content covered and it's perceived importance within entry-level physiotherapy programs in Australia – an observational study

Kerstin McPherson, Irmina Nahon & Gordon Waddington



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Implementation

- Knowledge to Action and CFIR approaches
- **Processes**
 - Review and synthesis of the evidence
 - Stakeholder interviews were conducted to identify enablers and barriers
 - A “program champion”
 - Optimising partnerships internally
 - Leveraging external partnerships
 - Implementation
 - Evaluation (5-month implementation period)

PTJ: Physical Therapy & Rehabilitation Journal | *Physical Therapy*, 2024;104:pzad163
<https://doi.org/10.1093/ptj/pzad163>
Advance access publication date November 25, 2023
Case Report



Implementation of Physical Therapist Services for Men Undergoing Radical Prostatectomy: An Administrative Case Report

Mitchell Wolden , PT, DPT, PhD^{1,2,*}, Scott Brown, PT, DPT³, Sigrid V. Carlsson, MD, PhD, MPH^{4,5}, Thomas A. Noah, MD⁶, Sean F. Mungovan, BAppSc, MPhil^{2,7,8}

Recommendation: Utilisation of an implementation framework such as CFIR to guide implementation



Summary

- Pelvic floor muscle training and PPI
 - Research continues to be conducted with a focus in post operative intervention.
 - Heterogeneity in approaches creating barriers for meta-analyses
 - Pre-operative PFMT remains an evidence-based option and is an opportunity for motor skill acquisition and motor learning during a time where the patient is pain and symptom free.
- Sexual function
 - Sparse
 - Physiotherapy adjunctive to the MDT
- Barriers to entry-level education should be considered
- Strategies to bridging the research-practice gap are emerging



Thank you

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Thank you

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