National Institute for Health and Care Excellence

Final

# Pelvic Floor Dysfunction: prevention and non-surgical management

## [C] Co-existing long-term conditions and pelvic floor dysfunction

*NICE guideline number NG210*

*Evidence review underpinning recommendations 1.2.1 (and content of box 1 related to co-existing long term conditions) and recommendation 1.3.8 as well as research recommendation 7 in the NICE guideline*

*Evidence reviews*

*December 2021*

*Final*

*These evidence reviews were developed by the National Guideline Alliance which is a part of the Royal College of Obstetricians and Gynaecologists*

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# Co-existing long-term conditions and pelvic floor dysfunction

## Review question

Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction?

### Introduction

It is important to know if specific groups of women are at a higher risk of developing or having pelvic floor dysfunction (PFD). This knowledge would guide targeted advice to help those who are at risk adopt preventative strategies with the aim of reducing the development and burden of disease. The aim of this review is to identify if having a long-term condition (for example chronic respiratory disease or diabetes) is associated with a higher risk of having symptoms associated with PFD.

### Summary of the protocol

See Table 1 for a summary of the Population, Exposure, Comparator and Outcome (PECO) characteristics of this review.

**Table 1: Summary of the protocol (PECO table)**

| | |
|---|---|
| **Population** | Women and young women (aged 12 years and older) |
| **Exposure (risk factor)** | The following comorbidities will be considered:<br>• chronic fatigue syndrome<br>• chronic respiratory disorders (such as pulmonary disorders, COPD, cystic fibrosis, asthma)<br>• connective tissue disorders (such as Ehlers-Danlos syndromes)<br>• constipation<br>• fibromyalgia syndrome<br>• irritable bowel syndrome<br>• neurological diseases (such as Parkinson's disease, motor neurone disease, MS, stroke)<br>• peripheral nerve damage (such as diabetes, back surgery, spinal stenosis, spinal bifida)<br>• psychiatric problems (such as anxiety, depression, personality disorders)<br>• traumatic injury/surgery to the pelvic region (gynaecological, bladder- or colorectal cancer-related treatments, spinal cord injuries) |
| **Comparator** | • Women with no known comorbidities or with other comorbidities that are not assumed to be related to PFD |
| **Outcomes** | **Critical**<br>Prevalence (such as proportion, effect estimate) of the following symptoms associated with pelvic floor dysfunction:<br>• urinary incontinence<br>• emptying disorder of the bladder<br>• emptying disorder of the bowel<br>• faecal incontinence |

| | |
|---|---|
| | • sexual dysfunction<br>• pelvic pain |

*COPD: chronic obstructive pulmonary disease; MS: multiple sclerosis; PFD: pelvic floor dysfunction*

For further details see the review protocol in appendix A.

## Methods and process

This evidence review was developed using the methods and process described in Developing NICE guidelines: the manual. Methods specific to this review question are described in the review protocol in appendix A and the methods document (supplementary document 1).

Declarations of interest were recorded according to NICE's conflicts of interest policy.

## Clinical evidence

### Included studies

Twelve cross-sectional studies were included for this review (Carrillo-Izquierdo 2018, Chambers 2017, Kim, 2011, Knoepp 2013, Lawrence 2007, Neron 2019, Rortveit 2010, Rutledge 2010, Schofield 2018, Segal 2017, Singh 2019, Wang 2010).

The included studies are summarised in Table 2.

Eight studies compared groups of women with a specific comorbidity to a control group of women: ovarian cancer (Schofield 2018), gynaecological cancer (Neron 2019 and Rutledge 2010), metabolic syndrome (Kim 2011), diabetes (Lawrence 2007), hypermobility (Knoepp 2013), fibromyalgia (Carrillo-Izquierdo 2018) and irritable bowel syndrome (IBS, Wang 2010). One study compared women who had received radiation therapy to those who had not received radiation therapy for endometrial cancer (Segal 2017) and one study compared women with functional constipation to women with irritable bowel syndrome with constipation (Singh 2019).

Two studies were not comparative by design and had no control group; Rortveit 2010 reported the prevalence of PFD in women with diabetes, chronic obstructive pulmonary disease (COPD) and constipation and Chambers 2017 reported the prevalence of PFD in women with cystic fibrosis. As these two studies were not comparative, their data is not reported in the GRADE tables in appendix F but summarised narratively in the summary of the evidence section.

Seven studies reported the prevalence of PFD symptoms in women with a comorbidity (Chambers 2017, Knoepp 2013, Lawrence 2007, Rortveit 2010, Rutledge 2010, Segal 2017, Wang 2010). Five studies reported symptom scores for women with and without a comorbidity (Carrillo-Izquierdo 2018, Kim 2011, Neron 2019 and Schofield 2018) or women with two different types of comorbidities (Singh 2019).

No studies were identified for the following comorbidities: chronic fatigue syndrome, neurological diseases (such as Parkinson's disease, motor neurone disease, multiple sclerosis (MS), stroke) and psychiatric problems (such as anxiety, depression, personality disorders).

See the literature search strategy in appendix B and study selection flow chart in appendix C.

### Excluded studies

Studies not included in this review are listed, and reasons for their exclusion are provided in appendix K.

## Summary of studies included in the evidence review

Summaries of the studies that were included in this review are presented in Table 2.

**Table 2: Summary of included studies.**

| Study | Population | Comorbidity (underlined headings refer to the protocol comorbidity) | Outcomes |
|---|---|---|---|
| Carrillo-Izquierdo 2018<br><br>Cross-sectional<br><br>Spain | N=448 women<br><br>n=226 women with fibromyalgia<br>n=222 control women<br><br>Age (years), mean (SD): Fibromyalgia 43.8 (0.6); Control 42.4 (0.7) | <u>Fibromyalgia syndrome</u><br>As documented by a physician | • PFDI-20<br>• UDI-6<br>• CRADI-8<br>• POPDI-6<br>• PFIQ-7<br>• UIQ-7<br>• CRAIQ-7<br>• POPIQ-7 |
| Chambers 2017<br><br>Cross-sectional<br><br>Australia | N=28 women with cystic fibrosis<br><br>Age (years), mean (SD): 25.82 (8.36) | <u>Chronic respiratory disorders (cystic fibrosis)</u><br>Approached in an outpatient clinic for cystic fibrosis | <u>Prevalence of:</u><br>• Bladder dysfunction<br>• Bowel dysfunction<br>• Sexual dysfunction<br>• POP sensation<br>• Global PFD |
| Kim 2011<br><br>Cross-sectional<br><br>Korea | N=984 women<br><br>n=138 with metabolic syndrome<br>n=846 controls<br><br>Age (years), mean (SD): With metabolic syndrome 52.9 (7.1); Controls 48.9 (5.5) | <u>Peripheral nerve damage (metabolic syndrome)</u><br>The presence of any 3 risk factors:<br>(1) elevated waist circumference<br>(2) elevated triglycerides;<br>(3) reduced high-density lipoprotein cholesterol<br>(4) elevated blood pressure<br>(5) elevated fasting glucose level | • PFDI-20<br>• POPDI-6<br>• CRADI-8<br>• UDI-6 |
| Knoepp 2013<br><br>Cross-sectional<br><br>USA | N=587<br><br>n=46 women with hypermobility syndrome<br>n=541 controls<br><br>Age (years), median (IQR): hypermobility syndrome 40.0 (36.4 to 43.2); controls 37.7 (35.3 to 40.8) | <u>Connective tissue disorders (joint hypermobility)</u><br>Joint mobility was assessed using the Beighton Modification of the Carter and Wilkinson Scoring System.<br>Benign joint hypermobility syndrome is diagnosed with a Beighton score of ≥4. | <u>Prevalence of:</u><br>• SUI<br>• OAB<br>• AI<br>• POP symptoms<br>• Prolapse on examination |
| Lawrence 2007<br><br>Cross-sectional<br><br>USA | N=3962<br><br>n=393 diabetic women<br>n=3569 controls | <u>Peripheral nerve damage (diabetes)</u><br>Respondents surveys were linked to the Diabetes Case Identification Database | <u>Prevalence of:</u><br>• SUI<br>• OAB<br>• AI<br>• Any PFD |

| Study | Population | Comorbidity (underlined headings refer to the protocol comorbidity) | Outcomes |
|---|---|---|---|
| | Age (years), mean (SD): 56.6 (15.8) | | |
| Neron 2019<br><br>Cross-sectional<br><br>France | N=1177<br><br>n=89 women with a history of gynaecologic cancer<br>n=1269 controls<br><br>Age (years), mean (SD): gynaecologic cancer survivors 63.72 (6.46); controls 61.69 (6.84) | <u>Traumatic injury/surgery to the pelvic region (gynaecological cancer)</u><br>Women from the gynaecologic cancer department of the University Hospital | • PFDI-20<br>• PFIQ-7 |
| Rortveit 2010<br><br>Cross-sectional<br><br>USA | N=2109<br><br>Age (years), mean (SD): 55.6 (8.6) | <u>Chronic respiratory disorders; Peripheral nerve damage (diabetes); Constipation</u><br>Conditions were self-reported | <u>Prevalence of:</u><br>• UI<br>• POP<br>• AI<br>• ≥2 PFD conditions |
| Rutledge 2010<br><br>Cross-sectional<br><br>USA | N=368<br><br>n=260 survivors of gynaecologic cancer<br>n=108 controls<br><br>Age (years), mean (SD): cancer survivors 57 (12); gynaecologic patients 47 (10) | <u>Traumatic injury/surgery to the pelvic region (gynaecological cancer)</u><br>women who attended the gynaecologic oncology clinics for routine surveillance visits | <u>Prevalence of:</u><br>• Any UI<br>• Moderate/severe UI<br>• AI<br>• Prolapse<br><br>• POP/UI sexual questionnaire score |
| Schofield 2018<br><br>Cross-sectional<br><br>Australia | N=40<br><br>n=20 ovarian cancer survivors<br>n=20 controls<br><br>Age (years), mean (SD): Ovarian cancer survivors 63.2 (8.9); Controls 63.0 (9.1) | <u>Traumatic injury/surgery to the pelvic region (ovarian cancer)</u><br>Identified through consultation rooms of three gynaecologic oncologists | • Bladder score – subscale from the APFQ<br>• Bowel score – subscale from the APFQ<br>• POP score – subscale from the APFQ<br>• Pelvic floor score – subscale from the APFQ |
| Segal 2017<br><br>Cross-sectional<br><br>USA | N=149<br><br>n=87 no radiation<br>n=62 radiation therapy<br><br>Age (years), median (range): No radiation 63 (58-67); Radiation therapy 64 (58-71) | <u>Traumatic injury/surgery to the pelvic region (endometrial cancer)</u><br>Women were identified from surgical case logs. Whether the woman had radiation therapy or not was self-reported by the woman | <u>Prevalence of:</u><br>• Any urinary leakage<br>• Moderate to severe UI<br>• SUI<br>• UUI<br>• AI<br>• Mucous leakage<br>• Liquid stool leakage |

| Study | Population | Comorbidity (underlined headings refer to the protocol comorbidity) | Outcomes |
|---|---|---|---|
| | | | • Solid stool leakage<br>• POP<br>• Sexual function score |
| Singh 2019<br><br>Cross-sectional<br><br>USA | N=107<br><br>n=64 functional constipation<br>n=43 Irritable bowel syndrome with constipation | <u>Constipation or irritable bowel syndrome</u> Women were diagnosed with functional constipation or irritable bowel syndrome with constipation from the Rome III criteria | • PFDI-20<br>• UDI-6<br>• CRADI-8<br>• POPDI-6 |
| Wang 2010<br><br>Cross-sectional<br><br>USA | N=2107<br><br>n=204 with Irritable Bowel Syndrome<br>n=1903 Controls<br><br>Age (years), mean (SD): IBS 56 (9); Control 56 (9) | <u>Irritable bowel syndrome</u><br>Women self-reported their irritable bowel syndrome status by answering: "Has a medical doctor or other medical person ever told you that you had irritable bowel syndrome or IBS?" | <u>Prevalence of:</u><br>• Urinary urgency >weekly<br>• Any UI<br>• Symptomatic POP |

*AI: anal incontinence; APFQ: Australian Pelvic Floor Questionnaire; COPD: chronic obstructive pulmonary disorder; CRADI-8: Colorectal anal distress inventory score; CRAIQ-7: Colorectal-anal impact questionnaire; IBS: Irritable bowel syndrome; OAB: overactive bladder; PFD: Pelvic floor dysfunction; PFDI-20: Pelvic floor distress inventory score; POP: pelvic organ prolapse; POPDI-6 Pelvic organ prolapse distress inventory score; POPIQ-7: Pelvic organ prolapse impact questionnaire; SD: standard deviation; SUI: stress urinary incontinence; UDI-6: Urinary Distress Inventory, short form; UI: urinary incontinence; UIQ-7 Urinary impact questionnaire; UUI: urge urinary incontinence*

See the full evidence tables in appendix D. No meta-analysis was conducted (and so there are no forest plots in appendix E).

## Quality assessment of studies included in the evidence review

See the evidence profiles in appendix F.

## Economic evidence

### Included studies

A single economic search was undertaken for all topics included in the scope of this guideline but no economic studies were identified which were applicable to this review question. See the literature search strategy in appendix B and economic study selection flow chart in appendix G.

### Excluded studies

Economic studies not included in this review are listed, and reasons for their exclusion are provided in appendix K.

## Summary of studies included in the economic evidence review

See the economic evidence tables in appendix H and economic evidence profiles in appendix I.

## Economic model

No economic modelling was undertaken for this review because it did not involve a comparison of competing courses of action.

## Brief summary of evidence

Some of the evidence in the summary below was quality assessed using GRADE methodology. Other evidence could not be assessed using GRADE because of the type of data that were reported. We have indicated where non-GRADE evidence was used in headings below.

### GRADE evidence

#### Women who have cancer

- Low quality evidence showed no difference between the symptom scores for pelvic floor, bladder, bowel or POP scores between women who had been treated for, and survived ovarian cancer and those who had not had ovarian cancer.
- Moderate to high quality evidence showed no difference between the symptom scores for PFDI, PFIQ or POP/UI sexual questionnaire and the prevalence of faecal incontinence or POP between women who had been treated for, and survived gynaecological cancer and those who had not had gynaecological cancer. However, the prevalence for any UI or moderate to severe UI was higher in women who had survived gynaecological cancer compared to those who had not had gynaecological cancer.
- Low to high quality evidence showed no difference in the prevalence of urinary leakage, moderate to severe UI, stress UI, urgency UI, faecal incontinence, mucous leakage, liquid stool leakage, solid stool leakage or POP bulge between women who had radiation therapy to treat their endometrial cancer and those who did not have radiation therapy. However, the scores for sexual function were better in women who had not had radiation therapy compared to those who had had radiation therapy to treat their endometrial cancer).

#### Women who have metabolic syndrome or diabetes

- High quality evidence showed the scores for PFD, UI, anal incontinence and POP were higher in the women with metabolic syndrome compared to control women.
- Moderate quality evidence showed that the prevalence of PFD, SUI, overactive bladder and anal incontinence was higher in women with diabetes compared to women who did not have diabetes.

*Non-GRADE evidence*

- Low risk of bias evidence from a non-comparative study showed rates of PFD symptoms in 174 women with diabetes: 49 (28.2%) had UI, 9 (5.2%) had faecal incontinence, 4 (2.3%) had POP and 13 (7.5%) had 2 or more PFD symptoms.

#### Women with hypermobility

- Low quality evidence showed there were no differences in the prevalence of overactive bladder, SUI, anal incontinence, prolapse symptoms or prolapse on examination in women who had hypermobility and those who did not.

#### Women with Fibromyalgia

- High quality evidence showed the scores for PFD, UI, anal incontinence and POP were all higher in women with fibromyalgia compared to women who did not have fibromyalgia.

#### Women with IBS or constipation

- Very low to moderate quality evidence showed the prevalence for any UI, experience UI at least monthly, experiencing UI at least daily, having urinary urgency at least weekly and having symptomatic POP in the last 12 months was higher in women with IBS compared to women without IBS. Women without IBS were more likely to never experience UI. There were no differences in the prevalence of experience UI less than monthly and weekly between women with IBS and those without IBS.
- High quality evidence showed that women with functional constipation had lower scores for PFD, UI, anal incontinence and POP compared to women with IBS and constipation.

*Non-GRADE evidence*

- Low risk of bias evidence from a non-comparative study showed rates of PFD symptoms in 1845 women with constipation: 422 (22.9%) had UI, 38 (2.1%) had faecal incontinence, 48 (2.6%) had POP and 87 (4.7%) had 2 or more PFD conditions.

### Non-GRADE evidence

#### Women who have cystic fibrosis

*Non-GRADE evidence*

- Low risk of bias evidence from a non-comparative study showed rates of PFD symptoms in 28 women who had cystic fibrosis: 11 (39.3%) had bladder dysfunction, 15 (53.6%) had bowel dysfunction, 1 (3.6%) had POP, 12 (42.9%) had sexual dysfunction and 13 (46.4%) had PFD.

#### Women who have COPD

*Non-GRADE evidence*

- Low risk of bias from a non-comparative study showed rates of PFD symptoms in 123 women with COPD: 39 (31.7%) had UI, 4 (3.3%) had faecal incontinence, 3 (2.4%) had POP and 13 (10.6%) had 2 or more PFD conditions.

## The committee's discussion of the evidence

### Interpreting the evidence

#### *The outcomes that matter most*

The aim of this review was to determine if women with a defined comorbidity were at a higher risk of having or developing PFD; therefore, the committee agreed that the prevalence of developing the individual associated symptoms (urinary incontinence, emptying disorder of the bladder, emptying disorder of the bowel, faecal incontinence, sexual dysfunction, pelvic organ prolapse, pelvic pain) were the most appropriate critical outcome for this epidemiological review.

#### *The quality of the evidence*

The quality of the evidence for this review was assessed using GRADE and ranged from very low to high. In general, the data were downgraded due to imprecision of the effect estimate. The quality of the evidence was downgraded in some cases due to failure to account for potential confounders.

Although there was evidence for all the classes of co-morbidity in some cases the only evidence found was from non-comparative studies which reported rates of pelvic floor dysfunction in women with a particular co-morbidity (such as cystic fibrosis or COPD). It was difficult to conclude whether women are at increased risk of pelvic floor dysfunction from such evidence.

***Benefits and harms***

The committee acknowledged that although the quality of the evidence varied, the evidence presented supported their opinion that women with certain conditions were at an increased risk of developing symptoms of pelvic floor dysfunction. The evidence showed that there was association between pelvic floor dysfunction and having the following long-term conditions: fibromyalgia, constipation, chronic respiratory diseases, diabetes and gynaecological cancer. Other long term conditions such as hypermobility did not show an association and irritable bowel syndrome had mixed results related to urinary incontinence.

The evidence identified showed that women treated for and surviving gynaecological cancer were at an increased risk of developing urinary incontinence, faecal incontinence and sexual dysfunction. The committee discussed that in their experience both the cancer itself and consequential treatment, such as surgery and radiotherapy can lead to pelvic floor dysfunction due to direct trauma to the pelvic floor.

Three studies suggested that diabetes increased the risk of women developing pelvic floor dysfunction with one of these studies showing this risk was increased further in women with a raised BMI. Based on their expertise the committee noted that having blood sugar levels that are above target over time can lead to nerve damage, also known as neuropathy. This can, in turn, lead to pelvic floor dysfunction.

One study suggested that women with fibromyalgia were also more likely to experience pelvic floor dysfunction. This was consistent with the committee's experience in clinical practice which suggests that fibromyalgia causes pain in the pelvic region which in turn leads to muscle tension in the pelvic floor which can lead to pelvic floor dysfunction.

The committee also recognised that women with chronic constipation were prone to developing pelvic floor dysfunction due to increased straining as a result of their constipation. In addition, that chronic respiratory conditions causing persistent cough; such as COPD and cystic fibrosis, increased the risk of pelvic floor dysfunction. This was in keeping with the evidence presented.

The committee were conscious that the evidence was limited for conditions such as hypermobility syndrome. In addition, there was no evidence identified for other conditions that the committee felt in their clinical experience may be associated with pelvic floor dysfunction. The committee agreed that more research is need in this area, and so a research recommendation was made (see appendix L).

***Cost effectiveness and resource use***

The recommendation that came out of this review was in regard to the advice that should be given to women with certain conditions that the review suggested would result in an increased risk of pelvic floor dysfunction. The committee thought negligible resources would be needed to implement this recommendation as the information would typically be provided as part of the on-going management of the woman's co-existing condition, although some providers might have to alter the advice that is given.

***Other considerations***

The committee noted that optimal management of diabetes would decrease the risk of peripheral never damage and would also decrease the risk of obesity which are both associated with pelvic floor dysfunction. They therefore cross referred to the NICE guidelines on:

- Type 1 diabetes in adults
- Type 2 diabetes in adults,
- the NICE guideline on diabetes (type 1 and type 2) in children and young people.

## Recommendations supported by this evidence review

This evidence review supports recommendations 1.2.1 and the following co-existing long term conditions in box 1:

- Diabetes
- Gynaecological cancer and any treatments for this
- Gynaecological surgery (such as a hysterectomy)
- Fibromyalgia
- Chronic respiratory disease and cough (chronic cough may increase the risk of faecal incontinence and flatus incontinence)

Other content of box 1 in the guideline is supported by evidence report B.

It also supports recommendation 1.3.8 and research recommendation 7 on co-existing long term conditions in the NICE guideline.

## References

**Carrillo-Izquierdo 2018**

Carrillo-Izquierdo, M. D., Slim, M., Hidalgo-Tallon, J., Calandre, E. P., Pelvic floor dysfunction in women with fibromyalgia and control subjects: Prevalence and impact on overall symptomatology and psychosocial function, Neurourol Urodyn, 37, 2702-2709, 2018

**Chambers 2017**

Chambers, R., Lucht, A., Reihill, A., Hough, J., Prevalence and impact of pelvic floor dysfunction in an adult cystic fibrosis population: a questionnaire survey, Int Urogynecol J Pelvic Floor Dysfunct, 28, 591-604, 2017

**Kim 2011**

Kim, Y. H., Kim, J. J., Kim, S. M., Choi, Y., Jeon, M. J., Association between metabolic syndrome and pelvic floor dysfunction in middle-aged to older Korean women, American Journal of Obstetrics & Gynecology, 205, 71.e1-8, 2011

**Knoepp 2013**

Knoepp, L. R., McDermott, K. C., Munoz, A., Blomquist, J. L., Handa, V. L., Joint hypermobility, obstetrical outcomes, and pelvic floor disorders, International urogynecology journal and pelvic floor dysfunction, 24, 735-740, 2013

**Lawrence 2007**

Lawrence,J.M., Lukacz,E.S., Liu,I.L., Nager,C.W., Luber,K.M., Pelvic floor disorders, diabetes, and obesity in women: Findings from the Kaiser Permanente continence associated risk epidemiology study, Diabetes Care, 30, 2536-2541, 2007

**Neron 2019**

Neron, M., Bastide, S., Tayrac, R., Masia, F., Ferrer, C., Labaki, M., Boileau, L., Letouzey, V., Huberlant, S., Impact of gynecologic cancer on pelvic floor disorder symptoms and quality of life: an observational study, Scientific Reports Sci, 9, 2250, 2019

**Rortveit 2010**

Rortveit,G., Subak,L.L., Thom,D.H., Creasman,J.M., Vittinghoff,E., Van Den Eeden,S.K., Brown,J.S., Urinary incontinence, fecal incontinence and pelvic organ prolapse in a population-based, racially diverse cohort: prevalence and risk factors, Female Pelvic Medicine and Reconstructive Surgery, 16, 278-283, 2010

**Rutledge 2010**

Rutledge, T. L., Heckman, S. R., Qualls, C., Muller, C. Y., Rogers, R. G., Pelvic floor disorders and sexual function in gynecologic cancer survivors: a cohort study, Am J Obstet Gynecol, 203, 514.e1-7, 2010

**Schofield 2018**

Schofield, C., Newton, R. U., Cohen, P. A., Galvao, D. A., McVeigh, J. A., Mohan, G. R., Tan, J., Salfinger, S. G., Straker, L. M., Peddle-McIntyre, C. J., Health-related quality of life and pelvic floor dysfunction in advanced-stage ovarian cancer survivors: associations with objective activity behaviors and physiological characteristics, Supportive Care in Cancer, 26, 2239-2246, 2018

**Segal 2017**

Segal, S., John, G., Sammel, M., Andy, U. U., Chu, C., Arya, L. A., Brown, J., Schmitz, K., Urinary incontinence and other pelvic floor disorders after radiation therapy in endometrial cancer survivors, Maturitas, 18, 18, 2017

**Singh 2019**

Singh, P., Seo, Y., Ballou, S., Ludwig, A., Hirsch, W., Rangan, V., Iturrino, J., Lembo, A., Nee, J. W., Pelvic Floor Symptom Related Distress in Chronic Constipation Correlates With a Diagnosis of Irritable Bowel Syndrome With Constipation and Constipation Severity but Not Pelvic Floor Dyssynergia, J Neurogastroenterol Motil, 25, 129-136, 2019

**Wang 2010**

Wang,J., Varma,M.G., Creasman,J.M., Subak,L.L., Brown,J.S., Thom,D.H., van den Eeden,S.K., Pelvic floor disorders and quality of life in women with self-reported irritable bowel syndrome, Alimentary Pharmacology and Therapeutics, 31, 424-431, 2010

# Appendices

## Appendix A – Review protocol

### Review protocol for review question: Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction?

**Table 3: Review protocol**

| ID | Field | Content |
|---|---|---|
| 0. | PROSPERO registration number | CRD42019162301 |
| 1. | Review title | Co-existing long-term conditions and pelvic floor dysfunction |
| 2. | Review question | Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction? |
| 3. | Objective | The objective of this review is to determine whether co-existing long-term conditions are associated with a higher risk of developing pelvic floor dysfunction.<br><br>Identifying which long-term conditions increase the risk of developing pelvic floor dysfunction will provide information to allow for targeted advice regarding prevention and risk of pelvic floor dysfunction for these groups. |
| 4. | Searches | The following databases will be searched:<br>• Cochrane Database of Systematic Reviews (CDSR)<br>• Cochrane Central Register of Controlled Trials (CENTRAL)<br>• MEDLINE & Medline in Process<br>• Embase<br><br>Searches will be restricted by:<br>• Date limit 1980 onwards (see section 10 for justification)<br>• English language<br>• Human studies<br><br>Other searches:<br>• Inclusion lists of potentially relevant systematic reviews |

| ID | Field | Content |
|---|---|---|
| | | The full search strategies for MEDLINE database will be published in the final review.<br><br>For each search, the principal database search strategy is quality assured by a second information scientist using an adaptation of the PRESS 2015 Guideline Evidence-Based Checklist. |
| 5. | Condition or domain being studied | The following symptoms will be addressed as long as they are associated with pelvic floor dysfunction: urinary incontinence, emptying disorders of the bladder, faecal incontinence, emptying disorders of the bowel, pelvic organ prolapse, sexual dysfunction and chronic pelvic pain syndromes. |
| 6. | Population | Inclusion<br>• Women and young women (aged 12 years and older)<br><br>Exclusion<br>• Men<br>• Babies and children (younger than 12 years)<br>• Studies which include women with urinary incontinence, emptying disorders of the bladder, faecal incontinence, emptying disorders of the bowel, pelvic organ prolapse, sexual dysfunction and chronic pelvic pain syndromes which are not due to pelvic floor dysfunction will be excluded. For example, women who have urinary incontinence due to a neurological condition or pelvic cancer will be excluded. During the screening stage, the reported inclusion/exclusion criteria of studies will be examined carefully. We do not anticipate studies on urinary incontinence, emptying disorders of the bladder or pelvic organ prolapse will explicitly state "*associated with pelvic floor dysfunction*" therefore this will be a pragmatic decision based on the description of the condition provided by the study authors. Some of these symptoms (for example urinary incontinence) are most often due to a failure in the pelvic floor and therefore unless the exclusion criteria states a different cause, these studies are likely to be included. However, for studies on faecal incontinence, emptying disorders of the bowel, sexual dysfunction and pelvic pain the causes are more numerous. As such for these symptoms, unless the study specifically states "*associated with pelvic floor dysfunction"*, they will be excluded. If any ambiguity exists, at least two reviewers will make the final decision if to include or exclude the study.<br>• |
| 7. | Intervention/Exposure/Test | The following comorbidities will be considered:<br>• chronic fatigue syndrome<br>• chronic respiratory disorders (such as pulmonary disorders, COPD, cystic fibrosis, asthma)<br>• connective tissues disorders (such as Ehlers-Danlos syndromes)<br>• constipation<br>• fibromyalgia syndrome |

| ID | Field | Content |
|---|---|---|
| | | • irritable bowel syndrome<br>• neurological diseases (such as Parkinson's disease, motor neurone disease, MS, stroke)<br>• peripheral nerve damage (such as diabetes, back surgery, spinal stenosis, spinal bifida)<br>• psychiatric problems (such as anxiety, depression, personality disorders)<br>• traumatic injury/surgery to the pelvic region (gynaecological, bladder- or colorectal cancer-related treatments, spinal cord injuries) |
| 8. | Comparator/Reference standard/Confounding factors | • Women with no known comorbidities or with other comorbidities that are not assumed to be related to PFD |
| 9. | Types of study to be included | • Systematic reviews of prospective cohort studies<br>• Prospective cohort studies<br>• Retrospective cohort studies<br>• Cross-sectional studies<br>• Epidemiological register data studies<br><br>• Note: For further details, see the algorithm in appendix H, Developing NICE guidelines: the manual. |
| 10. | Other exclusion criteria | • Studies that do not report the confidence interval (CI) of the prevalence estimate, or where the CI can't be calculated from the data available will be excluded.<br>• Studies with a mixed population (i.e women with symptoms such as urinary incontinence which are associated with pelvic floor dysfunction and women with symptoms that are not associated with pelvic floor dysfunction) will be excluded, unless subgroup analysis for those women with symptoms associated with pelvic floor dysfunction has been reported.<br>• Conference abstracts will be excluded because these do not typically provide sufficient information to fully assess risk of bias.<br>Only articles published after 1980 will be included. This was agreed by the committee as this is the date that the condition "pelvic floor dysfunction" was recognised to include agreed terminology on symptoms. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2815805/ |
| 11. | Context | Studies which demonstrate the development of pelvic floor dysfunction over time in women with a comorbidity will be prioritised for decision making in regards to recommendations, over those studies which simply show a correlation. These recommendations will apply to those receiving care in any healthcare settings (such as community, primary, secondary care).<br><br>Specific recommendations for groups listed in the Equality Considerations section of the scope may be also be made as appropriate. |

| ID | Field | Content |
|---|---|---|
| 12. | Primary outcomes (critical outcomes) | Prevalence (such as proportion, effect estimate) of the following symptoms associated with pelvic floor dysfunction:<br>• urinary incontinence<br>• emptying disorder of the bladder<br>• emptying disorder of the bowel<br>• faecal incontinence<br>• sexual dysfunction<br>• pelvic pain<br><br>Note that only studies using validated measures for<br>diagnosing the above conditions will be included : (for example: ICIQ-UI, ICIQ-VS, BFLUTS, UDI, POPSS, PISQ, POPQ, FISI, FIQL, GIQLI, PAC-QM, PAC –SYM, PDI, BPI) |
| 13. | Secondary outcomes (important outcomes) | N/A |
| 14. | Data extraction (selection and coding) | All references identified by the searches and from other sources will be uploaded into STAR and de-duplicated.<br>Titles and abstracts of the retrieved citations will be screened to identify studies that potentially meet the inclusion criteria outlined in the review protocol.<br>Duplicate screening will not be undertaken for this question.<br><br>Full versions of the selected studies will be obtained for assessment. Studies that fail to meet the inclusion criteria once the full version has been checked will be excluded at this stage. Each study excluded after checking the full version will be listed, along with the reason for its exclusion.<br>A standardised form will be used to extract data from studies. One reviewer will extract relevant data into a standardised form, and this will be quality assessed by a senior reviewer. Information to be extracted from studies includes: study type, study dates, location of study, funding, inclusion and exclusion criteria, participant characteristics, and details comorbidities of participants. |
| 15. | Risk of bias (quality) assessment | Quality assessment of individual studies will be performed using the following checklists<br>• ROBIS tool for systematic reviews<br>• The Joanna Briggs Institute (JBI) checklist for cross-sectional studies<br>• The CEBMA checklist for prevalence data<br><br>The quality assessment will be performed by one reviewer and this will be quality assessed by a senior reviewer. |

| ID | Field | Content | |
|---|---|---|---|
| 16. | Strategy for data synthesis | Depending on the availability of the evidence, the findings will be summarised narratively or quantitatively.<br>Data Synthesis<br>Prevalence data will be extracted, and if possible meta-analysis will be conducted. Alternatively prevalence data will be presented narratively.<br>Heterogeneity<br>Heterogeneity in the effect estimates of the individual studies will be assessed using the I2 statistic. I2 values of greater than 50% and 80% will be considered as significant and very significant heterogeneity, respectively. In the presence of heterogeneity sub-group analysis will be conducted<br>• According to risk of bias of individual studies<br>• According to socioeconomic status of population included<br>• By ethnicity of included populations<br>Exact subgroup analysis may vary depending on differences identified within included studies. If heterogeneity cannot be explained through subgroup analysis then a random effects model will be used for meta-analysis. If heterogeneity remains above 80% reviewers will consider if meta-analysis is appropriate given the characteristics of included. | |
| 17. | Analysis of sub-groups | Stratification<br>All data will initially be pooled for overall analysis; however, if data is available, separate analysis will also be conducted on:<br>• Women who are pregnant<br>• Women before and after gynaecological surgery<br>• Women aged 65 or older<br>• Women with physical disabilities<br>• Women with cognitive impairment<br>• According to those who do not identify themselves as women, but who have female pelvic organs<br>• Women who have difficulties reading, speaking or understanding English<br>*Recommendations will apply to all those with pelvic floor dysfunction unless there is evidence of a difference in these stratified groups* | |
| 18. | Type and method of review | ☐ | Intervention |
| | | ☐ | Diagnostic |
| | | ☐ | Prognostic |
| | | ☐ | Qualitative |

| ID | Field | Content | | |
|---|---|---|---|---|
| | | ☒ | Epidemiologic | |
| | | ☐ | Service Delivery | |
| | | ☐ | Other (please specify) | |
| 19. | Language | English | | |
| 20. | Country | England | | |
| 21. | Anticipated or actual start date | February 2020 | | |
| 22. | Anticipated completion date | August 2021 | | |
| 23. | Stage of review at time of this submission | Review stage | Started | Completed |
| | | Preliminary searches | ☐ | ☐ |
| | | Piloting of the study selection process | ☐ | ☐ |
| | | Formal screening of search results against eligibility criteria | ☐ | ☐ |
| | | Data extraction | ☐ | ☐ |
| | | Risk of bias (quality) assessment | ☐ | ☐ |
| | | Data analysis | ☐ | ☐ |
| 24. | Named contact | **5a. Named contact**<br>National Guideline Alliance<br>**5b Named contact e-mail**<br>PreventionofPOP@nice.org.uk<br>**5e Organisational affiliation of the review**<br>National Institute for Health and Care Excellence (NICE) and the National Guideline Alliance | | |
| 25. | Review team members | • NGA technical team | | |
| 26. | Funding sources/sponsor | This systematic review is being completed by the National Guideline Alliance, which is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists. NICE funds the National Guideline Alliance to develop guidelines for those working in the NHS, public health, and social care in England. | | |

| ID | Field | Content | |
|---|---|---|---|
| 27. | Conflicts of interest | All guideline committee members and anyone who has direct input into NICE guidelines (including the evidence review team and expert witnesses) must declare any potential conflicts of interest in line with NICE's code of practice for declaring and dealing with conflicts of interest. Any relevant interests, or changes to interests, will also be declared publicly at the start of each guideline committee meeting. Before each meeting, any potential conflicts of interest will be considered by the guideline committee Chair and a senior member of the development team. Any decisions to exclude a person from all or part of a meeting will be documented. Any changes to a member's declaration of interests will be recorded in the minutes of the meeting. Declarations of interests will be published with the final guideline. | |
| 28. | Collaborators | Development of this systematic review will be overseen by an advisory committee who will use the review to inform the development of evidence-based recommendations in line with section 3 of Developing NICE guidelines: the manual. Members of the guideline committee are available on the NICE website: https://www.nice.org.uk/guidance/indevelopment/gid-ng10123/ | |
| 29. | Other registration details | N/A | |
| 30. | Reference/URL for published protocol | https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=162301 | |
| 31. | Dissemination plans | NICE may use a range of different methods to raise awareness of the guideline. These include standard approaches such as:<br>• notifying registered stakeholders of publication<br>• publicising the guideline through NICE's newsletter and alerts<br>issuing a press release or briefing as appropriate, posting news articles on the NICE website, using social media channels, and publicising the guideline within NICE. | |
| 32. | Keywords | • Pelvic floor dysfunction | |
| 33. | Details of existing review of same topic by same authors | Not applicable | |
| 34. | Current review status | ☐ | Ongoing |
| | | ☐ | Completed but not published |
| | | ☐ | Completed and published |
| | | ☐ | Completed, published and being updated |
| | | ☐ | Discontinued |
| 35.. | Additional information | | |
| 36. | Details of final publication | www.nice.org.uk | |

*BFLUTS: Bristol Female Lower Urinary Tract Symptoms Questionnaire; BPI: Brief pain inventory; CDSR: Cochrane Database of Systematic Reviews; CENTRAL: Cochrane Central Register of Controlled Trials; CI: confidence intervals; COPD: Chronic obstructive pulmonary disorder; Faecal incontinence quality of life scale; FISI: Faecal*

*incontinence severity index; GIQLI: Gastrointestinal quality of life index; GRADE: Grading of Recommendations Assessment, Development and Evaluation; HTA: Health Technology Assessment; ICIQ-UI: International Consultation on Incontinence Questionnaire- Urinary incontinence; ICIQ-VS: International Consultation on Incontinence questionnaire – vaginal symptoms; ISI: Incontinence symptom index; MID: minimally important difference; MS: multiple sclerosis; NGA: National Guideline Alliance; NHS: National health service; NICE: National Institute for Health and Care Excellence; PAC-QL: patient assessment of constipation - quality of life; PAC-SYM: Patient assessment of constipation symptoms; PDI: Pain disability index; PISQ: Pelvic organ prolapse/urinary incontinence sexual questionnaire; POPQ: Pelvic organ prolapse quantification system; POP-SS: Pelvic organ prolapse symptom score; UDI: Urinary distress index*

# Appendix B – Literature search strategies

## Literature search strategies for review question: Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction?

### Clinical Search

**Database(s): Medline & Embase (Multifile) – OVID interface**
**Embase Classic+Embase** 1947 to 2020 February 03; **Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily** 1946 to February 03, 2020
Date of last search: 4 February 2020

*Multifile database codes: emczd = Embase Classic+Embase; ppez= MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily*

| # | Searches |
|---|---|
| 1 | Pelvic Floor/ or Pelvic Floor Disorders/ or exp *Urinary Incontinence/ or *Urinary Bladder, Overactive/ or exp *Pelvic Organ Prolapse/ or *Rectocele/ or *Fecal Incontinence/ or Urinary Retention/ or Fecal Impaction/ or Vaginismus/ |
| 2 | 1 use ppez |
| 3 | pelvis floor/ or pelvic floor disorder/ or exp *urine incontinence/ or *overactive bladder/ or *bladder instability/ or exp *pelvic organ prolapse/ or *rectocele/ or *feces incontinence/ or urine retention/ or defecation disorder/ or Feces Impaction/ or female sexual dysfunction/ or vaginism/ |
| 4 | 3 use emczd |
| 5 | (pelvi$ adj (floor$ or diaphragm$) adj3 (dysfunction$ or disorder$ or fail$ or impair$ or incompeten$ or insufficien$ or dyssynerg$ or symptom$ or laxity or change$ or care$ or health$ or wellbeing$ or well-being$ or prevent$ or rehabilitat$ or weak$ or hypertonic$ or overactiv$ or over activ$ or over-activ$)).tw. |
| 6 | (pelvi$ adj (dysfunction$ or disorder$ or fail$ or impair$ or incompeten$ or insufficien$ or dyssynerg$ or symptom$ or laxity or care$ or health$ or wellbeing$ or well-being$ or prevent$ or rehabilitat$ or weak$ or hypertonic$ or overactiv$ or over activ$ or over-activ$)).tw. |
| 7 | ((stress$ or mix$ or urg$ or urin$) adj5 incontinen$).ti. |
| 8 | (bladder$ adj5 (overactiv$ or over activ$ or over-activ$ or instabilit$ or hyper-reflex$ or hyperreflex$ or hyper reflex$ or incontinen$)).ti. |
| 9 | (detrusor$ adj5 (overactiv$ or over activ$ or over-activ$ or instabilit$ or hyper-reflex$ or hyperreflex$ or hyper reflex$)).ti. |
| 10 | ((urgency adj2 frequency) or (frequency adj2 urgency)).ti. |
| 11 | ((urin$ or bladder$) adj2 (urg$ or frequen$)).ti. |
| 12 | (SUI or OAB).ti. |
| 13 | (pelvic$ adj3 organ$ adj3 prolaps$).ti. |
| 14 | (urinary adj3 bladder adj3 prolaps$).ti. |
| 15 | ((vagin$ or urogenital$ or genit$ or uter$ or viscer$ or anterior$ or posterior$ or apical or pelvi$ or vault$ or urethr$ or bladder$ or cervi$ or rectal or rectum) adj3 prolaps$).ti. |
| 16 | (splanchnoptos$ or visceroptos$).ti. |
| 17 | (hernia$ adj3 (pelvi$ or vagin$ or urogenital$ or uter$ or bladder$ or urethr$ or viscer$)).ti. |
| 18 | (urethroc?ele$ or enteroc?ele$ or sigmoidoc?ele$ or proctoc?ele$ or rectoc?ele$ or cystoc?ele$ or rectoenteroc?ele$ or cystourethroc?ele$).ti. |
| 19 | ((faecal or fecal or faeces or feces or fecally or faecally or anal or anally or stool or stools or bowel or double or defecat$ or defaecat$) adj5 (incontinence or incontinent or urge$ or leak or leaking or leakage or soiling or seeping or seepage or impacted or impaction)).ti. |
| 20 | (urin$ adj3 (retention$ or retain$)).tw. |
| 21 | (voiding adj (disorder$ or dysfunction$ or problem$)).tw. |
| 22 | (empty$ adj disorder$ adj3 (bowel$ or bladder$ or vesical$ or stool$)).tw. |
| 23 | ((urogeni$ or anorec$ or ano-rec$ or ano rec$) adj3 dysfunction$).tw. |
| 24 | ((difficult$ or delay$ or irregular$ or infrequen$ or pain$) adj3 (defecat$ or defaecat$ or stool$ or faeces or feces or bowel movement$)).tw. |
| 25 | (obstruct$ adj3 (defecat$ or defaecat$)).tw. |
| 26 | ((defecat$ or defaecat$ or evacuat$) adj3 (disorder$ or dysfunction$)).tw. |
| 27 | outlet$ dysfunction$ constipa$.tw. |
| 28 | (dys?ynerg$ adj (defecat$ or defaecat$)).tw. |
| 29 | (pelvi$ adj3 dyskines$).tw. |
| 30 | pelvi$ outlet$ obstruct$.tw. |
| 31 | anismus$.tw. |
| 32 | puborectal$ contract$.tw. |
| 33 | ((rectal or rectum) adj3 urge$).tw. |
| 34 | (female adj sex$ adj (dysfunct$ or satisf$ or problem$ or symptom$ or arous$ or activit$ or disorder$)).tw. |
| 35 | (obstruct$ adj3 intercourse).tw. |
| 36 | (vagin$ adj3 laxity$).tw. |

| # | Searches |
|---|---|
| 37 | (vagin$ adj wind).tw. |
| 38 | vaginismus$.tw. |
| 39 | (vagin$ adj penetrat$ adj disorder$).tw. |
| 40 | or/2, 4-39 |
| 41 | Comorbidity/ or Prevalence/ or Risk Factors/ |
| 42 | 41 use ppez |
| 43 | comorbidity/ or prevalence/ or risk factor/ or disease association/ or correlation analysis/ or frequency analysis/ or medical history/ |
| 44 | 43 use emczd |
| 45 | (association or associated or correlat$ or prevalen$ or determinant$).ti. |
| 46 | 42 or 44 or 45 |
| 47 | *Fatigue Syndrome, Chronic/ or *Pulmonary Disease, Chronic Obstructive/ or *Cystic Fibrosis/ or *Asthma/ or *Connective Tissue Diseases/ or *Ehlers-Danlos Syndrome/ or *Marfan Syndrome/ or *Joint Instability/ or *Constipation/ or *Fibromyalgia/ or *Irritable Bowel Syndrome/ or *Inflammatory Bowel Diseases/ or *Crohn Disease/ or *Parkinson Disease/ or *Multiple Sclerosis/ or *Stroke/ or *Stroke Rehabilitation/ or *Cerebrovascular Disorders/ or *Cerebral Infarction/ or *Cerebral Hemorrhage/ or *Neuromuscular Diseases/ or *Obesity/ or *Obesity, Abdominal/ or *Cardiovascular Diseases/ or *Heart Failure/ or *Hypertension/ or *Metabolic Syndrome/ or *Diabetes Mellitus/ or *Diabetes Mellitus, Type 1/ or *Diabetes Mellitus, Type 2/ or *Diabetes, Gestational/ or *Diabetic Nephropathies/ or *Diabetes Complications/ or *Insulin Resistance/ or *Spinal Stenosis/ or *Spinal Dysraphism/ or *Spina Bifida Occulta/ or *Depression/ or *Anxiety/ or *Anxiety Disorders/ or *Mental Disorders/ or *Borderline Personality Disorder/ or *Psychotic Disorders/ or *Personality Disorders/ or *Schizophrenia/ or *Polycystic Ovary Syndrome/ or *Acromegaly/ or *Neoplasms/ or *Rectal Neoplasms/ or *Colorectal Neoplasms/ or *Uterine Cervical Neoplasms/ or *Endometrial Neoplasms/ or *Urinary Bladder Diseases/ or *Urinary Bladder Neoplasms/ or *Genital Neoplasms, Female/ or *Vulvar Neoplasms/ or *Ovarian Neoplasms/ or *Uterine Neoplasms/ or *Brain Injuries/ or *Spinal Cord Injuries/ or *HIV Infections/ or *Rheumatic Diseases/ or *Arthritis, Rheumatoid/ or *Skin Ulcer/ or *Scleroderma, Limited/ or *Scleroderma, Systemic/ or *Hypothyroidism/ or *Non-alcoholic Fatty Liver Disease/ or *Primary Ovarian Insufficiency/ or *Kidney Failure, Chronic/ or *Renal Insufficiency/ or *Kidney Transplantation/ or *Frail Elderly/ or *Chronic Disease/ |
| 48 | 47 use ppez |
| 49 | *chronic fatigue syndrome/ or *chronic obstructive lung disease/ or *cystic fibrosis/ or *asthma/ or *connective tissue disease/ or *Ehlers Danlos syndrome/ or *marfan syndrome/ or *joint hypermobility/ or *constipation/ or *fibromyalgia/ or *irritable colon/ or *inflammatory bowel disease/ or *Crohn disease/ or *Parkinson disease/ or *multiple sclerosis/ or *stroke/ or *stroke rehabilitation/ or *cerebrovascular accident/ or *cerebrovascular disease/ or *brain infarction/ or *brain hemorrhage/ or *brain ischemia/ or *neuromuscular disease/ or *obesity/ or *abdominal obesity/ or *cardiovascular disease/ or *heart failure/ or *hypertension/ or *metabolic syndrome X/ or *diabetes mellitus/ or *insulin dependent diabetes mellitus/ or *non insulin dependent diabetes mellitus/ or *pregnancy diabetes mellitus/ or *diabetic neuropathy/ or *diabetic patient/ or *insulin resistance/ or *vertebral canal stenosis/ or *spinal dysraphism/ or *occult spinal dysraphism/ or *depression/ or *anxiety/ or *anxiety disorder/ or *psychiatric diagnosis/ or *mental disease/ or *borderline state/ or *psychosis/ or *personality disorder/ or *schizophrenia/ or *ovary polycystic disease/ or *acromegaly/ or *neoplasm/ or *rectum carcinoma/ or *rectum cancer/ or *colorectal cancer/ or *colorectal tumor/ or *gynecologic cancer/ or *uterine cervix cancer/ or *endometrium cancer/ or *bladder disease/ or *bladder cancer/ or *urogenital tract disease/ or *female genital tract cancer/ or *vulva cancer/ or *ovary cancer/ or *uterus cancer/ or *cancer radiotherapy/ or *cancer surgery/ or *cancer patient/ or *traumatic brain injury/ or *spinal cord injury/ or *Human immunodeficiency virus infection/ or *rheumatic disease/ or *rheumatoid arthritis/ or *skin ulcer/ or *limited scleroderma/ or *systemic sclerosis/ or *hypothyroidism/ or *subclinical hypothyroidism/ or *nonalcoholic fatty liver/ or *premature ovarian failure/ or *chronic kidney failure/ or kidney failure/ or *kidney transplantation/ or *frail elderly/ or *chronic disease/ |
| 50 | 49 use emczd |
| 51 | 48 or 50 |
| 52 | 40 and 46 and 51 |
| 53 | ((associat$ or prevalen$ or history or correlat$ or factor$ or risk or risks) adj10 (COPD or pulmonary disorder$ or pulmonary disease$ or lung disorder$ or lung disease$ or chronic cough$ or chronic fatigue$ or cystic fibrosis$ or asthma$ or ehler$ or EDS or marfan$ or joint instabilit$ or joint hypermobilit$ or hypermobilit$ syndrome$ or acromegaly$ or constipation or fibromyalg$ or crohn$ disease$ or irritabl$ bowel$ or irritabl$ colon$ or inflammat$ bowel$ or inflammat$ colon$ or parkinson$ or multipl$ sclerosis$ or MS or stroke or post-stroke or poststroke or obesity or hypertension$ or cardio$ disease$ or metabol$ syndrome$ or diabet$ or insulin resistan$ or spina$ stenos$ or spin$ dysraph$ or spina$ bifida$ or anxiety or depression or schizophrenia$ or personality disorder$ or borderline or psychiatr$ comorbid$ or psychiatr$ co-morbid$ or psychiatr$ disorder$ or psychiatr$ inpatient$ or psychiatr$ outpatient$ or psychiatr$ illness$ or inpatient psychiatr$ or heart failure$ or cancer$ or neoplasm$ or tum?or$ or spin$ cord$ injur$ or SCI or brain$ injur$ or system$ sclerosis$ or liver disease$ or HIV$ or rheumat$ arthriti$ or kidney failure$ or kidney transplantation or renal transplantation or ovarian insufficien$ or ovarian failure$ or polycystic ovar$ or PCOS)).ti. |
| 54 | 40 and 53 |
| 55 | ((prevalen$ or risk factor$) adj5 (COPD or pulmonary disorder$ or pulmonary disease$ or lung disorder$ or lung disease$ or chronic cough$ or chronic fatigue$ or cystic fibrosis$ or asthma$ or ehler$ or EDS or marfan$ or joint instabilit$ or joint hypermobilit$ or hypermobilit$ syndrome$ or acromegaly$ or constipation or fibromyalg$ or crohn$ disease$ or irritabl$ bowel$ or irritabl$ colon$ or inflammat$ bowel$ or inflammat$ colon$ or parkinson$ or multipl$ sclerosis$ or MS or stroke or post-stroke or poststroke or obesity or hypertension$ or cardio$ disease$ or metabol$ syndrome$ or diabet$ or insulin resistan$ or spina$ stenos$ or spin$ dysraph$ or spina$ bifida$ or anxiety or depression or schizophrenia$ or personality disorder$ or borderline or psychiatr$ comorbid$ or psychiatr$ co-morbid$ or psychiatr$ disorder$ or psychiatr$ inpatient$ or psychiatr$ outpatient$ or psychiatr$ illness$ or inpatient psychiatr$ or heart failure$ or cancer$ or neoplasm$ or tum?or$ or spin$ cord$ injur$ or SCI or brain$ injur$ or system$ sclerosis$ or liver disease$ or HIV$ or rheumat$ arthriti$ or kidney failure$ or kidney transplantation or renal transplantation or ovarian insufficien$ or ovarian failure$ or polycystic ovar$ or PCOS)).tw. |
| 56 | 40 and 55 |

| # | Searches |
|---|---|
| 57 | 52 or 54 or 56 |
| 58 | limit 57 to english language |
| 59 | limit 58 to yr="1980 -Current" [General Exclusions filter applied] |

**Database(s): Cochrane Library – Wiley interface**
**Cochrane Database of Systematic Reviews**, Issue 2 of 12, February 2020; **Cochrane Central Register of Controlled Trials**, Issue 2 of 12, February 2020
Date of last search: 4 February 2020

| # | Searches |
|---|---|
| #1 | MeSH descriptor: [Pelvic Floor] this term only |
| #2 | MeSH descriptor: [Pelvic Floor Disorders] this term only |
| #3 | ((pelvi* NEXT (floor* or diaphragm*) NEAR/3 (dysfunction* or disorder* or fail* or impair* or incompeten* or insufficien* or dyssynerg* or symptom* or laxity or change* or care* or health* or wellbeing* or well-being* or prevent* or rehabilitat* or weak* or hypertonic* or overactiv* or over activ* or over-activ*))):ti,ab,kw |
| #4 | ((pelvi* NEXT (dysfunction* or disorder* or fail* or impair* or incompeten* or insufficien* or dyssynerg* or symptom* or laxity or care* or health* or wellbeing* or well-being* or prevent* or rehabilitat* or weak* or hypertonic* or overactiv* or over activ* or over-activ*))):ti,ab,kw |
| #5 | MeSH descriptor: [Urinary Incontinence] explode all trees |
| #6 | MeSH descriptor: [Urinary Bladder, Overactive] this term only |
| #7 | (((stress* or mix* or urg* or urin*) NEAR/5 incontinen*)):ti |
| #8 | (((bladder* NEAR/5 (overactiv* or over activ* or over-activ* or instabilit* or hyper-reflex* or hyperreflex* or hyper reflex* or incontinen*))):ti |
| #9 | (((detrusor* NEAR/5 (overactiv* or over activ* or over-activ* or instabilit* or hyper-reflex* or hyperreflex* or hyper reflex*))):ti |
| #10 | (((((urgency NEAR/2 frequency) or (frequency NEAR/2 urgency)))):ti |
| #11 | (((((urin* or bladder*) NEAR/2 (urg* or frequen*)))):ti |
| #12 | (((SUI or OAB))):ti |
| #13 | MeSH descriptor: [Pelvic Organ Prolapse] explode all trees |
| #14 | MeSH descriptor: [Rectocele] this term only |
| #15 | (((pelvic* NEAR/3 organ* NEAR/3 prolaps*))):ti |
| #16 | (((urinary NEAR/3 bladder NEAR/3 prolaps*))):ti |
| #17 | (((((vagin* or urogenital* or genit* or uter* or viscer* or anterior* or posterior* or apical or pelvi* or vault* or urethr* or bladder* or cervi* or rectal or rectum) NEAR/3 prolaps*))):ti |
| #18 | (((splanchnoptos* or visceroptos*))):ti |
| #19 | (((hernia* NEAR/3 (pelvi* or vagin* or urogenital* or uter* or bladder* or urethr* or viscer*)))):ti |
| #20 | (((urethroc?ele* or enteroc?ele* or sigmoidoc?ele* or proctoc?ele* or rectoc?ele* or cystoc?ele* or rectoenteroc?ele* or cystourethroc?ele*))):ti |
| #21 | MeSH descriptor: [Fecal Incontinence] this term only |
| #22 | (((((faecal or fecal or faeces or feces or fecally or faecally or anal or anally or stool or stools or bowel or double or defecat* or defaecat*) NEAR/5 (incontinence or incontinent or urge* or leak or leaking or leakage or soiling or seeping or seepage or impacted or impaction)))):ti |
| #23 | MeSH descriptor: [Urinary Retention] this term only |
| #24 | (((urin* NEAR/3 (retention* or retain*)))):ti,ab,kw |
| #25 | (((voiding NEXT (disorder* or dysfunction* or problem*)))):ti,ab,kw |
| #26 | (((empty* NEXT disorder* NEAR/3 (bowel* or bladder* or vesical* or stool*)))):ti,ab,kw |
| #27 | (((((urogeni* or anorec* or ano-rec* or ano rec*) NEAR/3 dysfunction*))):ti,ab,kw |
| #28 | MeSH descriptor: [Fecal Impaction] this term only |
| #29 | (((((difficult* or delay* or irregular* or infrequen* or pain*) NEAR/3 (defecat* or defaecat* or stool* or faecal or fecal or faeces or feces or fecally or faecally or bowel movement*)))):ti,ab,kw |
| #30 | (((obstruct* NEAR/3 (defecat* or defaecat*)))):ti,ab,kw |
| #31 | (((((defecat* or defaecat* or evacuat*) NEAR/3 (disorder* or dysfunction*)))):ti,ab,kw |
| #32 | ((outlet* dysfunction* constipa*)):ti,ab,kw |
| #33 | (((dys?ynerg* NEXT (defecat* or defaecat*)))):ti,ab,kw |
| #34 | (((pelvi* NEAR/3 dyskines*))):ti,ab,kw |
| #35 | ((pelvi* outlet* obstruct*)):ti,ab,kw |
| #36 | ((anismus*)):ti,ab,kw |
| #37 | ((puborectal* contract*)):ti,ab,kw |
| #38 | ((((rectal or rectum) NEAR/3 urge*))):ti,ab,kw |
| #39 | (((female NEXT sex* NEXT (dysfunct* or satisf* or problem* or symptom* or arous* or activit* or disorder*)))):ti,ab,kw |
| #40 | (((obstruct* NEAR/3 intercourse))):ti,ab,kw |
| #41 | (((vagin* NEAR/3 laxity*))):ti,ab,kw |
| #42 | (((vagin* NEXT wind))):ti,ab,kw |
| #43 | MeSH descriptor: [Vaginismus] this term only |
| #44 | ((vaginismus*)):ti,ab,kw |
| #45 | (((vagin* NEXT penetrat* NEXT disorder*))):ti,ab,kw |
| #46 | {or #1-#45} |
| #47 | MeSH descriptor: [Comorbidity] this term only |
| #48 | MeSH descriptor: [Prevalence] this term only |
| #49 | MeSH descriptor: [Risk Factors] this term only |
| #50 | ((association or associated or correlat* or prevalen* or determinant* or relationship)):ti |

| # | Searches |
|---|---|
| #51 | #47 OR #48 OR #49 OR #50 |
| #52 | #46 AND #51 |
| #53 | (((associat* or prevalen* or history or correlat* or factor* or risk or risks) NEAR/10 (COPD or "pulmonary disorder*" or "pulmonary disease*" or "lung disorder*" or "lung disease*" or "chronic cough*" or "chronic fatigue*" or "cystic fibrosis*" or asthma* or ehler* or EDS or marfan* or "joint instabilit*" or "joint hypermobilit*" or "hypermobilit* syndrome*" or acromegaly* or constipation or fibromyalg* or "crohn* disease*" or "irritabl* bowel*" or "irritabl* colon*" or "inflammat* bowel*" or "inflammat* colon*" or parkinson* or "multipl* sclerosis*" or MS or stroke or post-stroke or poststroke or obesity or hypertension* or "cardio* disease*" or "metabol* syndrome*" or diabet* or "insulin resistan*" or "spina* stenos*" or "spin* dysraph*" or "spina* bifida*" or anxiety or depression or schizophrenia* or "personality disorder*" or borderline or "psychiatr* comorbid*" or "psychiatr* co-morbid*" or "psychiatr* disorder*" or "psychiatr* inpatient*" or "psychiatr* outpatient*" or "psychiatr* illness*" or "inpatient psychiatry*" or "heart failure*" or cancer* or neoplasm* or tum?or* or "spin* cord* injur*" or SCI or "brain* injur*" or "system* sclerosis*" or "liver disease*" or HIV* or "rheumat* arthriti*" or "kidney failure*" or "kidney transplantation" or "renal transplantation" or "ovarian insufficien*" or "ovarian failure*" or "polycystic ovar*" or PCOS))):ti |
| #54 | #46 AND #53 |
| #55 | #52 OR #54 |

**Database(s): Database of Abstracts of Reviews of Effects (DARE); HTA Database – CRD interface**

Date of last search: 4 February 2020

| # | Searches |
|---|---|
| 1 | MeSH DESCRIPTOR Pelvic Floor IN DARE,HTA |
| 2 | MeSH DESCRIPTOR Pelvic Floor Disorders IN DARE,HTA |
| 3 | ((pelvi* NEXT (floor* or diaphragm*) NEAR3 (dysfunction* or disorder* or fail* or impair* or incompeten* or insufficien* or dyssynerg* or symptom* or laxity or change* or care* or health* or wellbeing* or well-being* or prevent* or rehabilitat* or weak* or hypertonic* or overactiv* or over activ* or over-activ*))) IN DARE, HTA |
| 4 | ((pelvi* NEXT (dysfunction* or disorder* or fail* or impair* or incompeten* or insufficien* or dyssynerg* or symptom* or laxity or care* or health* or wellbeing* or well-being* or prevent* or rehabilitat* or weak* or hypertonic* or overactiv* or over activ* or over-activ*))) IN DARE, HTA |
| 5 | MeSH DESCRIPTOR Urinary Incontinence EXPLODE ALL TREES IN DARE,HTA |
| 6 | MeSH DESCRIPTOR Urinary Bladder, Overactive IN DARE,HTA |
| 7 | (((stress* or mix* or urg* or urin*) NEAR5 incontinen*)) IN DARE, HTA |
| 8 | ((bladder* NEAR5 (overactiv* or over activ* or over-activ* or instabilit* or hyper-reflex* or hyperreflex* or hyper reflex* or incontinen*))) IN DARE, HTA |
| 9 | ((detrusor* NEAR5 (overactiv* or over activ* or over-activ* or instabilit* or hyper-reflex* or hyperreflex* or hyper reflex*))) IN DARE, HTA |
| 10 | (((urgency NEAR2 frequency) or (frequency NEAR2 urgency))) IN DARE, HTA |
| 11 | (((urin* or bladder*) NEAR2 (urg* or frequen*))) IN DARE, HTA |
| 12 | ((SUI or OAB)) IN DARE, HTA |
| 13 | MeSH DESCRIPTOR Pelvic Organ Prolapse EXPLODE ALL TREES IN DARE,HTA |
| 14 | MeSH DESCRIPTOR Rectocele IN DARE,HTA |
| 15 | ((pelvic* NEAR3 organ* NEAR3 prolaps*)) IN DARE, HTA |
| 16 | ((urinary NEAR3 bladder NEAR3 prolaps*)) IN DARE, HTA |
| 17 | (((vagin* or urogenital* or genit* or uter* or viscer* or anterior* or posterior* or apical or pelvi* or vault* or urethr* or bladder* or cervi* or rectal or rectum) NEAR3 prolaps*)) IN DARE, HTA |
| 18 | ((splanchnoptos* or visceroptos*)) IN DARE, HTA |
| 19 | ((hernia* NEAR3 (pelvi* or vagin* or urogenital* or uter* or bladder* or urethr* or viscer*))) IN DARE, HTA |
| 20 | ((urethroc?ele* or enteroc?ele* or sigmoidoc?ele* or proctoc?ele* or rectoc?ele* or cystoc?ele* or rectoenteroc?ele* or cystourethroc?ele*)) IN DARE, HTA |
| 21 | MeSH DESCRIPTOR Fecal Incontinence IN DARE,HTA |
| 22 | (((faecal or fecal or faeces or feces or fecally or faecally or anal or anally or stool or stools or bowel or double or defecat* or defaecat*) NEAR5 (incontinence or incontinent or urge* or leak or leaking or leakage or soiling or seeping or seepage or impacted or impaction))) IN DARE, HTA |
| 23 | MeSH DESCRIPTOR Urinary Retention IN DARE,HTA |
| 24 | ((urin* NEAR3 (retention* or retain*))) IN DARE, HTA |
| 25 | ((voiding NEXT (disorder* or dysfunction* or problem*))) IN DARE, HTA |
| 26 | ((empty* NEXT disorder* NEAR3 (bowel* or bladder* or vesical* or stool*))) IN DARE, HTA |
| 27 | (((urogeni* or anorec* or ano-rec* or ano rec*) NEAR3 dysfunction*)) IN DARE, HTA |
| 28 | MeSH DESCRIPTOR Fecal Impaction IN DARE,HTA |
| 29 | (((difficult* or delay* or irregular* or infrequen* or pain*) NEAR3 (defecat* or defaecat* or stool* or faecal or fecal or faeces or feces or fecally or faecally or bowel movement*))) IN DARE, HTA |
| 30 | ((obstruct* NEAR3 (defecat* or defaecat*))) IN DARE, HTA |
| 31 | (((defecat* or defaecat* or evacuat*) NEAR3 (disorder* or dysfunction*))) IN DARE, HTA |
| 32 | (((outlet* NEXT dysfunction* NEXT constipa*))) IN DARE, HTA |
| 33 | ((dys?ynerg* NEXT (defecat* or defaecat*))) IN DARE, HTA |
| 34 | ((pelvi* NEAR3 dyskines*)) IN DARE, HTA |
| 35 | ((pelvi* NEXT outlet* NEXT obstruct*)) IN DARE, HTA |
| 36 | ((anismus*)) IN DARE, HTA |
| 37 | ((puborectal* NEXT contract*)) IN DARE, HTA |
| 38 | (((rectal or rectum) NEAR3 urge*)) IN DARE, HTA |

| # | Searches |
|---|---|
| 39 | ((female NEXT sex* NEXT (dysfunct* or satisf* or problem* or symptom* or arous* or activit* or disorder*))) IN DARE, HTA |
| 40 | ((obstruct* NEAR3 intercourse)) IN DARE, HTA |
| 41 | ((vagin* NEAR3 laxity*)) IN DARE, HTA |
| 42 | ((vagin* NEXT wind)) IN DARE, HTA |
| 43 | MeSH DESCRIPTOR Vaginismus IN DARE,HTA |
| 44 | ((vaginismus*)) IN DARE, HTA |
| 45 | ((vagin* NEXT penetrat* NEXT disorder*)) IN DARE, HTA |
| 46 | #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44 OR #45 |
| 47 | MeSH DESCRIPTOR Comorbidity IN DARE,HTA |
| 48 | MeSH DESCRIPTOR Prevalence IN DARE,HTA |
| 49 | MeSH DESCRIPTOR Risk Factors IN DARE,HTA |
| 50 | (association or associated or correlat* or prevalen* or determinant* or relationship):TI IN DARE, HTA |
| 51 | #47 OR #48 OR #49 OR #50 |
| 52 | #46 AND #51 |

## Economic Search

One global search was conducted for economic evidence across the guideline.

### Database(s): NHS Economic Evaluation Database (NHS EED); HTA Database – CRD interface

Date of last search: 3 February 2021

| # | Searches |
|---|---|
| 1 | MeSH DESCRIPTOR Pelvic Floor IN NHSEED,HTA |
| 2 | MeSH DESCRIPTOR Pelvic Floor Disorders IN NHSEED,HTA |
| 3 | MeSH DESCRIPTOR Urinary Bladder, Overactive IN NHSEED,HTA |
| 4 | (((pelvi* NEXT (floor* or diaphragm*) NEAR3 (dysfunction* or disorder* or fail* or impair* or incompeten* or insufficien* or dyssynerg* or symptom* or laxity or change* or care* or health* or wellbeing* or well-being* or prevent* or rehabilitat* or weak* or hypertonic* or overactiv* or over activ* or over-activ*)))) IN NHSEED, HTA |
| 5 | MeSH DESCRIPTOR Urinary Incontinence EXPLODE ALL TREES IN NHSEED,HTA |
| 6 | MeSH DESCRIPTOR Urinary Bladder, Overactive IN NHSEED,HTA |
| 7 | ((((stress* or mix* or urg* or urin*) NEAR5 incontinen*))) IN NHSEED, HTA |
| 8 | (((bladder* NEAR5 (overactiv* or over activ* or over-activ* or instabilit* or hyper-reflex* or hyperreflex* or hyper reflex* or incontinen*)))) IN NHSEED, HTA |
| 9 | (((detrusor* NEAR5 (overactiv* or over activ* or over-activ* or instabilit* or hyper-reflex* or hyperreflex* or hyper reflex*)))) IN NHSEED, HTA |
| 10 | ((((urgency NEAR2 frequency) or (frequency NEAR2 urgency)))) IN NHSEED, HTA |
| 11 | ((((urin* or bladder*) NEAR2 (urg* or frequen*)))) IN NHSEED, HTA |
| 12 | (((SUI or OAB))) IN NHSEED, HTA |
| 13 | MeSH DESCRIPTOR Pelvic Organ Prolapse EXPLODE ALL TREES IN NHSEED,HTA |
| 14 | MeSH DESCRIPTOR Rectocele IN NHSEED,HTA |
| 15 | (((pelvic* NEAR3 organ* NEAR3 prolaps*))) IN NHSEED, HTA |
| 16 | (((urinary NEAR3 bladder NEAR3 prolaps*))) IN NHSEED, HTA |
| 17 | ((((vagin* or urogenital* or genit* or uter* or viscer* or anterior* or posterior* or apical or pelvi* or vault* or urethr* or bladder* or cervi* or rectal or rectum) NEAR3 prolaps*))) IN NHSEED, HTA |
| 18 | (((splanchnoptos* or visceroptos*))) IN NHSEED, HTA |
| 19 | (((hernia* NEAR3 (pelvi* or vagin* or urogenital* or uter* or bladder* or urethr* or viscer*)))) IN NHSEED, HTA |
| 20 | (((urethroc?ele* or enteroc?ele* or sigmoidoc?ele* or proctoc?ele* or rectoc?ele* or cystoc?ele* or rectoenteroc?ele* or cystourethroc?ele*))) IN NHSEED, HTA |
| 21 | MeSH DESCRIPTOR Fecal Incontinence IN NHSEED,HTA |
| 22 | ((((faecal or fecal or faeces or feces or fecally or faecally or anal or anally or stool or stools or bowel or double or defecat* or defaecat*) NEAR5 (incontinence or incontinent or urge* or leak or leaking or leakage or soiling or seeping or seepage or impacted or impaction)))) IN NHSEED, HTA |
| 23 | MeSH DESCRIPTOR Urinary Retention IN NHSEED,HTA |
| 24 | (((urin* NEAR3 (retention* or retain*)))) IN NHSEED, HTA |
| 25 | (((voiding NEXT (disorder* or dysfunction* or problem*)))) IN NHSEED, HTA |
| 26 | (((empty* NEXT disorder* NEAR3 (bowel* or bladder* or vesical* or stool*)))) IN NHSEED, HTA |
| 27 | ((((urogeni* or anorec* or ano-rec* or ano rec*) NEAR3 dysfunction*))) IN NHSEED, HTA |
| 28 | MeSH DESCRIPTOR Fecal Impaction IN NHSEED,HTA |
| 29 | ((((difficult* or delay* or irregular* or infrequen* or pain*) NEAR3 (defecat* or defaecat* or stool* or faecal or fecal or faeces or feces or fecally or faecally or bowel movement*)))) IN NHSEED, HTA |
| 30 | (((obstruct* NEAR3 (defecat* or defaecat*)))) IN NHSEED, HTA |
| 31 | ((((defecat* or defaecat* or evacuat*) NEAR3 (disorder* or dysfunction*)))) IN NHSEED, HTA |
| 32 | ((((outlet* NEXT dysfunction* NEXT constipa*)))) IN NHSEED, HTA |
| 33 | (((dys?ynerg* NEXT (defecat* or defaecat*)))) IN NHSEED, HTA |

| # | Searches |
|---|---|
| 34 | (((pelvi* NEAR3 dyskines*))) IN NHSEED, HTA |
| 35 | (((pelvi* NEXT outlet* NEXT obstruct*))) IN NHSEED, HTA |
| 36 | (((anismus*))) IN NHSEED, HTA |
| 37 | (((puborectal* NEXT contract*))) IN NHSEED, HTA |
| 38 | ((((rectal or rectum) NEAR3 urge*))) IN NHSEED, HTA |
| 39 | (((female NEXT sex* NEXT (dysfunct* or satisf* or problem* or symptom* or arous* or activit* or disorder*)))) IN NHSEED, HTA |
| 40 | (((obstruct* NEAR3 intercourse))) IN NHSEED, HTA |
| 41 | (((vagin* NEAR3 laxity*))) IN NHSEED, HTA |
| 42 | (((vagin* NEXT wind))) IN NHSEED, HTA |
| 43 | MeSH DESCRIPTOR Vaginismus IN NHSEED,HTA |
| 44 | (((vaginismus*))) IN NHSEED, HTA |
| 45 | (((vagin* NEXT penetrat* NEXT disorder*))) IN NHSEED, HTA |
| 46 | (#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44 OR #45) IN NHSEED, HTA |

**Database(s): Medline & Embase (Multifile) – OVID interface**
**Embase Classic+Embase** 1947 to 2021 February 01; **Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily** 1946 to February 01, 2021
Date of last search: 3 February 2021

*Multifile database codes: emczd = Embase Classic+Embase; ppez= MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily*

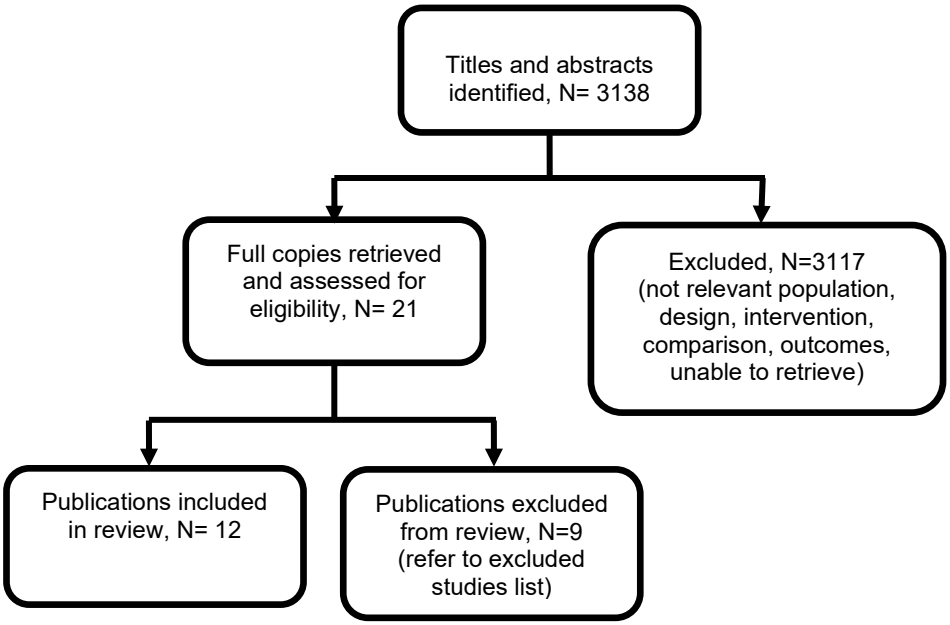
| # | Searches |
|---|---|
| 1 | Pelvic Floor/ use ppez |
| 2 | Pelvic Floor Disorders/ use ppez |
| 3 | pelvis floor/ use emczd |
| 4 | pelvic floor disorder/ use emczd |
| 5 | (pelvi$ adj (floor$ or diaphragm$) adj3 (dysfunction$ or disorder$ or fail$ or impair$ or incompeten$ or insufficien$ or dyssynerg$ or symptom$ or laxity or change$ or care$ or health$ or wellbeing$ or well-being$ or prevent$ or rehabilitat$ or weak$ or hypertonic$ or overactiv$ or over activ$ or over-activ$)).tw. |
| 6 | (pelvi$ adj (dysfunction$ or disorder$ or fail$ or impair$ or incompeten$ or insufficien$ or dyssynerg$ or symptom$ or laxity or care$ or health$ or wellbeing$ or well-being$ or prevent$ or rehabilitat$ or weak$ or hypertonic$ or overactiv$ or over activ$ or over-activ$)).tw. |
| 7 | or/1-6 |
| 8 | exp *Urinary Incontinence/ use ppez |
| 9 | *Urinary Bladder, Overactive/ use ppez |
| 10 | exp *urine incontinence/ use emczd |
| 11 | *overactive bladder/ use emczd |
| 12 | *bladder instability/ use emczd |
| 13 | ((stress$ or mix$ or urg$ or urin$) adj5 incontinen$).ti. |
| 14 | (bladder$ adj5 (overactiv$ or over activ$ or over-activ$ or instabilit$ or hyper-reflex$ or hyperreflex$ or hyper reflex$ or incontinen$)).ti. |
| 15 | (detrusor$ adj5 (overactiv$ or over activ$ or over-activ$ or instabilit$ or hyper-reflex$ or hyperreflex$ or hyper reflex$)).ti. |
| 16 | ((urgency adj2 frequency) or (frequency adj2 urgency)).ti. |
| 17 | ((urin$ or bladder$) adj2 (urg$ or frequen$)).ti. |
| 18 | (SUI or OAB).ti. |
| 19 | or/8-18 |
| 20 | exp *Pelvic Organ Prolapse/ use ppez |
| 21 | exp *pelvic organ prolapse/ use emczd |
| 22 | *Rectocele/ use ppez |
| 23 | *rectocele/ use emczd |
| 24 | (pelvic$ adj3 organ$ adj3 prolaps$).ti. |
| 25 | (urinary adj3 bladder adj3 prolaps$).ti. |
| 26 | ((vagin$ or urogenital$ or genit$ or uter$ or viscer$ or anterior$ or posterior$ or apical or pelvi$ or vault$ or urethr$ or bladder$ or cervi$ or rectal or rectum) adj3 prolaps$).ti. |
| 27 | (splanchnoptos$ or visceroptos$).ti. |
| 28 | (hernia$ adj3 (pelvi$ or vagin$ or urogenital$ or uter$ or bladder$ or urethr$ or viscer$)).ti. |
| 29 | (urethroc?ele$ or enteroc?ele$ or sigmoidoc?ele$ or proctoc?ele$ or rectoc?ele$ or cystoc?ele$ or rectoenteroc?ele$ or cystourethroc?ele$).ti. |
| 30 | or/20-29 |
| 31 | *Fecal Incontinence/ use ppez |
| 32 | *feces incontinence/ use emczd |
| 33 | ((faecal or fecal or faeces or feces or fecally or faecally or anal or anally or stool or stools or bowel or double or defecat$ or defaecat$) adj5 (incontinence or incontinent or urge$ or leak or leaking or leakage or soiling or seeping or seepage or impacted or impaction)).ti. |

| # | Searches |
|---|---|
| 34 | or/31-33 |
| 35 | Urinary Retention/ use ppez |
| 36 | urine retention/ use emczd |
| 37 | (urin$ adj3 (retention$ or retain$)).tw. |
| 38 | (voiding adj (disorder$ or dysfunction$ or problem$)).tw. |
| 39 | (empty$ adj disorder$ adj3 (bowel$ or bladder$ or vesical$ or stool$)).tw. |
| 40 | ((urogeni$ or anorec$ or ano-rec$ or ano rec$) adj3 dysfunction$).tw. |
| 41 | defecation disorder/ use emczd |
| 42 | Fecal Impaction/ use ppez |
| 43 | Feces Impaction/ use emczd |
| 44 | ((difficult$ or delay$ or irregular$ or infrequen$ or pain$) adj3 (defecat$ or defaecat$ or stool$ or faeces or feces or bowel movement$)).tw. |
| 45 | (obstruct$ adj3 (defecat$ or defaecat$)).tw. |
| 46 | ((defecat$ or defaecat$ or evacuat$) adj3 (disorder$ or dysfunction$)).tw. |
| 47 | outlet$ dysfunction$ constipa$.tw. |
| 48 | (dys?ynerg$ adj (defecat$ or defaecat$)).tw. |
| 49 | (pelvi$ adj3 dyskines$).tw. |
| 50 | pelvi$ outlet$ obstruct$.tw. |
| 51 | anismus$.tw. |
| 52 | puborectal$ contract$.tw. |
| 53 | ((rectal or rectum) adj3 urge$).tw. |
| 54 | or/35-53 |
| 55 | female sexual dysfunction/ use emczd |
| 56 | (female adj sex$ adj (dysfunct$ or satisf$ or problem$ or symptom$ or arous$ or activit$ or disorder$)).tw. |
| 57 | (obstruct$ adj3 intercourse).tw. |
| 58 | (vagin$ adj3 laxity$).tw. |
| 59 | (vagin$ adj wind).tw. |
| 60 | Vaginismus/ use ppez |
| 61 | vaginism/ use emczd |
| 62 | vaginismus$.tw. |
| 63 | (vagin$ adj penetrat$ adj disorder$).tw. |
| 64 | or/55-63 |
| 65 | 7 or 19 or 30 or 34 or 54 or 64 |
| 66 | Economics/ use ppez |
| 67 | Value of life/ use ppez |
| 68 | exp "Costs and Cost Analysis"/ use ppez |
| 69 | exp Economics, Hospital/ use ppez |
| 70 | exp Economics, Medical/ use ppez |
| 71 | Economics, Nursing/ use ppez |
| 72 | Economics, Pharmaceutical/ use ppez |
| 73 | exp "Fees and Charges"/ use ppez |
| 74 | exp Budgets/ use ppez |
| 75 | health economics/ use emczd |
| 76 | exp economic evaluation/ use emczd |
| 77 | exp health care cost/ use emczd |
| 78 | exp fee/ use emczd |
| 79 | budget/ use emczd |
| 80 | funding/ use emczd |
| 81 | budget*.ti,ab. |
| 82 | cost*.ti. |
| 83 | (economic* or pharmaco?economic*).ti. |
| 84 | (price* or pricing*).ti,ab. |
| 85 | (cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab. |
| 86 | (financ* or fee or fees).ti,ab. |
| 87 | (value adj2 (money or monetary)).ti,ab. |
| 88 | or/66-87 |
| 89 | 65 and 88 |
| 90 | limit 89 to english language |

# Appendix C – Clinical evidence study selection

## Study selection for: Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction?

**Figure 1: Study selection flow chart**



# Appendix D – Evidence tables

## Evidence tables for review question: Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction?

**Table 4: Evidence tables**

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| **Full citation**<br><br>Carrillo-Izquierdo, M. D., Slim, M., Hidalgo-Tallon, J., Calandre, E. P., Pelvic floor dysfunction in women with fibromyalgia and control subjects: Prevalence and impact on overall symptomatology and psychosocial function, Neurourology & UrodynamicsNeurourol Urodyn, 37, 2702-2709, 2018<br><br>**Ref Id**<br><br>1194274<br><br>**Country/ies where the study was carried out**<br><br>Spain<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To evaluate the prevalence, distress, and | **Sample size**<br>N=448<br>n=226 women with fibromyalgia<br>n=222 control women<br><br>**Characteristics**<br>Age (years), mean (SD): Fibromyalgia 43.8 (0.6); Control 42.4 (0.7)<br><br>**Inclusion criteria**<br>Women from the Catholic University of Murcia<br><br>**Exclusion criteria**<br>Controls who suffered any regional or generalized chronic pain syndrome. Participants who did not complete the questionnaires correctly. | **Comorbidities**<br>Fibromyalgia was documented and diagnosed by a physician | **Details**<br>Controls were recruited from the Catholic University of Murcia. Questionnaires were completed on 'Google Drive' or paper-form. Questionnaires included: PFDI-20 (including POPDI-6, CRADI-8 and UDI-6); PFIQ-7 | **Results**<br>PFDI-20, mean (SD) [range]: Fibromyalgia 143.1 (5.7) [0-264.6]; Control 96.1 (4.8) [0-198]<br>POPDI-6, mean (SD) [range]: Fibromyalgia 44.6 (1.3) [0-91.7]; Control 28.1 (1.6) [0-70.8]<br>CRADI-8, mean (SD) [range]: Fibromyalgia 41.5 (1.2) [0-96.9]; Control 32.3 (1.7) [0-75]<br>UDI-6, mean (SD) [range]: Fibromyalgia 54.6 (1.6) [0-100]; Control 35.5 (2.1) [0-91.7]<br><br>PFIQ-7, mean (SD) [range]: Fibromyalgia 122.4 (5.6) [0-300]; Control 100.6 (6.4) [0-300]<br>UIQ-7, mean (SD) [range]: Fibromyalgia 40.49 (1.9) [0-99.9]; Control 31.03 (2.4) [0-99.9]<br>CRAIQ-7, mean (SD) [range]: Fibromyalgia 32.2 (1.9) [0-99.9]; Control 23.8 (1.9) [0-99.9]<br>POPIQ-7, mean (SD) [range]: Fibromyalgia 33.6 | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – documented by physician<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – higher % of fibromyalgia group had temporomandibular dysfunction, chronic fatigue syndrome, were unemployed or on sick leave and had |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| impact of pelvic floor dysfunction (PFD) symptomatology in women with fibromyalgia and control women.<br><br>**Study dates**<br>March 2014 to March 2015<br><br>**Source of funding**<br>None reported | | | | (2.0) [0-99.9]; Control 23.9 (2.0) [0-99.9] | lower education levels.<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (mean, SD) extracted<br><br>Overall rating: Low risk |
| **Full citation**<br><br>Chambers, R., Lucht, A., Reihill, A., Hough, J., Prevalence and impact of pelvic floor dysfunction in an adult cystic fibrosis population: a questionnaire survey, International Urogynecology JournalInt Urogynecol J Pelvic Floor Dysfunct, 28, 591-604, 2017<br><br>**Ref Id**<br><br>1194371<br><br>**Country/ies where the study was carried out**<br><br>Australia<br><br>**Study type** | **Sample size**<br>N=28<br><br>NB also n=32 men, but data not extracted for men as not relevant for this guideline<br><br>**Characteristics**<br>Age (years), mean (SD): 25.82 (8.36)<br>BMI (kg/m2), mean (SD): 22.47 (3.48)<br>Parous, n (%): 5 (17.86)<br><br>**Inclusion criteria**<br>Confirmed diagnosis of Cystic Fibrosis and to be able to read and understand English | **Comorbidities**<br>Participants were approached in an outpatient clinic for cystic fibrosis or from the respiratory ward. | **Details**<br>Participants were asked to complete the questionnaires with an iPad alone in private. Researchers were available to answers any questions.<br>Questionnaires were used to investigate pelvic floor dysfunction.<br>Questionnaires included the validated self-administered Australian Pelvic Floor Questionnaire (APFQ), the validated International Consultation on Incontinence Questionnaire Male Sexual Matters Associated with Lower Urinary Tract Symptoms Module and a series of questions based on the | **Results**<br>Clinically meaningful bladder dysfunction: 11/28<br>Clinically meaningful bowel dysfunction: 15/28<br>Clinically meaningful sexual dysfunction: 12/28<br>Pelvic organ prolapse sensation: 1/28<br>Clinically meaningful overall global pelvic floor dysfunction: 13/28 | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – identified from CF ward<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Not |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| Cross-sectional<br><br>**Aim of the study**<br>To determine, in an adult CF population, (1) the prevalence of PF dysfunction (bladder, bowel and sexual dysfunction and prolapse), (2) the risk factors associated with PF dysfunction, (3) the bothersomeness of PF dysfunction, and (4) the clinical considerations in PF dysfunction in relation to how it constrains CF management (cough, airway clearance techniques, exercise and spirometry) and preferences regarding discussion with health professionals.<br><br>**Study dates**<br>Not reported<br><br>**Source of funding**<br>None reported | **Exclusion criteria**<br>Mental or cognitive impairment affecting their ability to respond to the questionnaire | | clinical implications of PF dysfunction in CF. | | applicable – study not comparative<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (n/N's) extracted<br><br>Overall rating: Low risk |
| **Full citation**<br><br>Kim, Y. H., Kim, J. J., Kim, S. M., Choi, Y., Jeon, M. J., Association between metabolic syndrome and pelvic floor dysfunction in | **Sample size**<br>N=984 women<br>n=138 with metabolic syndrome<br>n=846 without metabolic syndrome | **Comorbidities**<br>Metabolic Syndrome (MS) was defined according to the guidelines set forth by several organizations: the Joint Interim Statement of the International Diabetes | **Details**<br>Women were recruited from a comprehensive medical screening clinic where subjects had visited the clinic independently | **Results**<br>**PFDI-20, mean (SD)**<br>With Metabolic Syndrome: 38.3 (2.4)<br>Controls: 31.2 (1.0)<br><br>**POPDI-6, mean (SD)** | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| middle-aged to older Korean women, American Journal of Obstetrics & GynecologyAm J Obstet Gynecol, 205, 71.e1-8, 2011<br><br>**Ref Id**<br><br>1193304<br><br>**Country/ies where the study was carried out**<br><br>Korea<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To prospectively collect data from middle-aged to older women, who are a group that is highly susceptible to Metabolic Syndrome, to evaluate the association between Metabolic Syndrome and pelvic floor dysfunction.<br><br>**Study dates**<br>May 2009 and January 2010<br><br>**Source of funding**<br>No funding received | **Characteristics**<br>MS = metabolic syndrome<br><br>Age (years), mean (SD): With MS 52.9 (7.1); Controls 48.9 (5.5)<br><br>BMI (kg/m2), mean (SD): With MS 25.0 (3.1); Controls 22.0 (2.4)<br>Obesity (BMI >=25kg/m2), n (%): With MS 62 (44.9); Controls 84 (9.9)<br><br>Parity<br>0, n (%): With MS 1 (0.7); Controls 28 (3.3)<br>1, n (%): With MS 19 (13.8); Controls 91 (10.8)<br>2+, n (%): With MS 118 (85.5); Controls 727 (85.9)<br><br>Menopausal status<br>Premenopausal: With MS 62 (44.9); Controls 561 (66.3)<br>Postmenopausal: With MS 76 (55.1); Controls 285 (33.7)<br><br>**Inclusion criteria**<br>Women who visited a comprehensive medical screening clinic where subjects had visited the clinic independently for routine health examinations and who | Federation Task Force on Epidemiology and Prevention; the National Heart, Lung, and Blood Institute; the American Heart Association; the World Heart Federation; the International Atherosclerosis Society; and the International Association for the Study of Obesity.<br>The presence of any 3 of the following 5 risk factors were sufficient for a diagnosis of MS:<br>(1) elevated waist circumference >=80 cm for Asian women;<br>(2) elevated triglycerides (>=150 mg/dL) or drug treatment for elevated triglycerides;<br>(3) reduced high-density lipoprotein cholesterol (<50 mg/dL) or drug treatment for reduced high-density lipoprotein cholesterol;<br>(4) elevated blood pressure (systolic >=130 mm Hg and/or diastolic >=85 mm Hg) or antihypertensive drug treatment in a patient with a history of hypertension;<br>(5) elevated fasting glucose level (>=100 mg/dL) or drug treatment for elevated glucose level. | for routine health examinations.<br><br>Pelvic floor dysfunction was measured by the Pelvic Floor Distress Inventory–20 (PFDI-20). The PFDI consists of 20 questions that are separated into 3 subscales: the Pelvic Organ Prolapse Distress Inventory– 6 (POPDI-6), the Colorectal-Anal Distress Inventory– 8 (CRADI-8), and the Urinary Distress Inventory– 6 (UDI-6). Women were asked whether they experience specific symptoms and, if so, the degree to which the symptom bothers them on a 4-point scale from “Not at all” to “Quite a bit.” Each sub- scale is scored from 0-100; higher scores indicate greater symptom burden. The PFDI-20 total score is the sum of these 3 subscale scores (0-300). | With Metabolic Syndrome: 7.5 (0.9)<br>Controls: 7.0 (0.4)<br><br>**CRADI-8, mean (SD)**<br>With Metabolic Syndrome: 15.6 (1.2)<br>Controls: 12.5 (0.5)<br><br>**UDI-6, mean (SD)**<br>With Metabolic Syndrome: 15.2 (1.1)<br>Controls: 11.7 (0.5) | 1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – medical screening clinics<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – women with metabolic syndrome were older, a higher % were postmenopausal, weighed more, had higher BMI, had lower education status, had a higher waist circumference.<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| | were 40 years old and over<br><br>**Exclusion criteria**<br><br>• women with a history of malignancy or other severe psychologic or physical disorders that were not amenable to the study<br>• women who had received current or recent (<=1 year previously) hormone replacement treatment | | | | – raw data (mean, SD) extracted<br><br>Overall rating: Low risk |
| **Full citation**<br><br>Knoepp, L. R., McDermott, K. C., Munoz, A., Blomquist, J. L., Handa, V. L., Joint hypermobility, obstetrical outcomes, and pelvic floor disorders, International urogynecology journal and pelvic floor dysfunction, 24, 735-740, 2013<br><br>**Ref Id**<br><br>1151979 | **Sample size**<br>N=587<br><br>Beighton score <4 = controls; n=541<br>Beighton score ≥4 = Hypermobility syndrome; n=46<br><br>**Characteristics**<br>Beighton score <4 = controls; n=541 | **Comorbidities**<br>Joint mobility was assessed on physical examination at enrolment using five standard manoeuvres known as the Beighton Modification of the Carter and Wilkinson Scoring System.<br>Benign joint hypermobility syndrome is diagnosed with a Beighton score of ≥4. | **Details**<br>Participants were recruited from the obstetrical population at a large community hospital in suburban Maryland, USA.<br>Symptoms of stress urinary incontinence (SUI), overactive bladder (OAB), anal incontinence (AI), and prolapse were assessed using the validated Epidemiology of Prolapse and | **Results**<br>Beighton score <4 = controls; n=541<br>Beighton score ≥4 = Hypermobility syndrome; n=46<br><br><u>Stress urinary incontinence</u><br>n (%): hypermobility syndrome 9 (20); controls 73 (13)<br><br><u>Overactive bladder</u> | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| **Country/ies where the study was carried out**<br><br>USA<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To investigate the association between joint hypermobility syndrome, childbirth outcomes, and pelvic floor disorders<br><br>**Study dates**<br>Not reported<br><br>**Source of funding**<br>Supported by a grant from NICHD (R01 HD056275). | Beighton score ≥4 = Hypermobility syndrome; n=46<br><br>Age (years), median (IQR): hypermobility syndrome 40.0 (36.4 to 43.2); controls 37.7 (35.3 to 40.8)<br>Race (Caucasian), n (%): hypermobility syndrome 469 (87); controls 39 (85)<br>Race (African American), n (%): hypermobility syndrome 53 (10); controls 4 (9)<br>Race (Other), n (%): hypermobility syndrome 19 (4); controls 3 (7)<br>Maternal age >35 at 1st delivery, n (%): hypermobility syndrome 158 (29); controls 8 (17)<br>Multiparous (at enrolment), n (%): hypermobility syndrome 402 (74); controls 33 (72)<br>BMI≥30kg/m2 (at enrolment), n (%): hypermobility syndrome 101 (19); controls 7 (15)<br><br>Delivery group across all delivery types (caesarean - after complete cervical dilation), n (%): hypermobility syndrome 132 (24); controls 8 (17)<br>Delivery group across all delivery types (spontaneous vaginal birth - non-operative), n (%): | | Incontinence Questionnaire (EPIQ). In addition, objective evidence of pelvic organ support was assessed during a gynaecologic exam using the Pelvic Organ Prolapse Quantification (POP-Q) examination. | n (%): hypermobility syndrome 3 (7); controls 51 (9)<br><br><u>Anal incontinence</u><br>n (%): hypermobility syndrome 6 (13); controls 66 (12)<br><br><u>Prolapse symptoms</u><br>n (%): hypermobility syndrome 0 (0); controls 21 (4)<br><br><u>Prolapse on examination</u><br>n (%): hypermobility syndrome 5 (11); controls 60 (11) | and reliable way? Yes – physical exam<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – women with hypermobility were younger and were less likely to have an anal sphincter laceration across all deliveries<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (n/N's) extracted<br><br>Overall rating: Low risk |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| | hypermobility syndrome 288 (53); controls 33 (72)<br>≥1 operative vaginal birth, n (%): hypermobility syndrome 121 (22); controls 5 (11)<br>Prolonged second stage >120mins, n (%): hypermobility syndrome 237 (44); controls 15 (33)<br>Anal sphincter laceration - ever present across all deliveries, n (%): hypermobility syndrome 93 (17); controls 2 (4)<br><br>**Inclusion criteria**<br>Women were if they had given birth to their first child 5– 10 years before enrolment.<br>Participants were recruited based on the mode of delivery of their first child (caesarean vs. vaginal), and groups were matched for age at the time of first delivery and years since that delivery.<br><br>**Exclusion criteria**<br>Based on the first delivery: maternal age <15 or >50 years, delivery at <37 weeks of gestation, placenta previa, multiple gestation, known foetal congenital anomaly, | | | | |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| | stillbirth, prior myomectomy, and abruption. | | | | |
| **Full citation**<br><br>Lawrence,J.M., Lukacz,E.S., Liu,I.L., Nager,C.W., Luber,K.M., Pelvic floor disorders, diabetes, and obesity in women: Findings from the Kaiser Permanente continence associated risk epidemiology study, Diabetes Care, 30, 2536-2541, 2007<br><br>**Ref Id**<br><br>143961<br><br>**Country/ies where the study was carried out**<br><br>USA<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To examine the associations between female pelvic floor disorders (PFDs) (stress urinary incontinence [SUI], overactive bladder [OAB], and anal incontinence [AI]) and diabetes and obesity | **Sample size**<br>N=3962<br><br>Non diabetic: n=3569<br>Diabetic: n=393<br><br>**Characteristics**<br>**Age** (mean, SD): 56.6 (15.8)<br><br>**Race** n/N (%)**:**<br>Non-Hispanic white: 2444/3962 (61.7)<br>Hispanic: 760/3962 (19.2)<br>Black: 382/3962 (8.2)<br>Asian/Pacific Islander: 323/3962 (8.2)<br>Other/Unknown: 53/3962 (1.3)<br><br>**BMI** (mean, SD): 27.8 (6.2)<br><br>**Mode of delivery** n/N (%):<br>Nulliparous: 755/3962 (19.1)<br>Any vaginal birth: 2837/3962 (71.6)<br>Caesarean births only: 370/3962 (9.3)<br><br>**Parity** (mean, SD): 2.1 (1.6) | **Comorbidities**<br>To assess for diabetes: Survey respondents were linked to the KPSC Diabetes Case Identification Database, which uses an algorithm to identify members who have a high probability of having diabetes based on at least one of the following criteria: 250.XX ICD-9 hospital diagnosis, a prescription for insulin or other oral hypoglycaemic agents, A1C >=6.7%, or a fructosamine test result >=280 umol/l. | **Details**<br>Samples of 3050 women in each of four age strata (25–39, 40–54, 55– 69, and 70 – 84 years) were selected from the Kaiser Permanente Southern California (KPSC) membership who had an address on file with the health plan.<br>Surveys in English and Spanish were mailed with a cover letter, small incentive, and postcard to opt-out or request additional information, followed by a second survey mailing, a reminder telephone call, and a third survey mailing to women in the youngest age strata.<br>To assess for PFD: Women were screened for PFDs based on their responses to stem questions plus their degrees of bother, as indicated on a visual analogue scale. The Epidemiology of Prolapse and Incontinence Questionnaire (EPIQ) was developed to assess the prevalence of PFDs in a sample of women from | **Results**<br>Stress urinary incontinence<br>n (%): diabetic 92 (23.8); nondiabetic 497 (14.1)<br><br>Overactive bladder<br>n (%): diabetic 80 (21.4); nondiabetic 438 (12.5)<br><br>Anal incontinence<br>n (%): diabetic 120 (32.5); nondiabetic 839 (24.3)<br><br>Any PFD<br>n (%): diabetic 167 (46.1); nondiabetic 1157 (33.8) | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? No<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – diabetes database<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – women with diabetes were older, had a higher BMI, a higher % were Hispanic or Black, had higher parity. A higher % of women were: postmenopausal, had a hysterectomy, were past smokers, had a history of depression, had |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| **Study dates**<br>April 2004 to January 2005<br><br>**Source of funding**<br>Funded by R01 HD41113. Analyses were funded by Kaiser Permanente Direct Community Benefit funds. | **Postmenopausal** n/N (%): 2611/3962 (66.0)<br><br>**Inclusion criteria**<br>None reported<br><br>**Exclusion criteria**<br>None reported | | this racially and ethnically diverse population. | | neurological disease and had lung disease or asthma<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (mean, SD) extracted<br><br>Overall rating: Some concerns |
| **Full citation**<br><br>Neron, M., Bastide, S., Tayrac, R., Masia, F., Ferrer, C., Labaki, M., Boileau, L., Letouzey, V., Huberlant, S., Impact of gynecologic cancer on pelvic floor disorder symptoms and quality of life: an observational study, Scientific ReportsSci, 9, 2250, 2019<br><br>**Ref Id**<br><br>1193962<br><br>**Country/ies where the study was carried out**<br><br>France | **Sample size**<br>N=1177<br>n=89 women with a history of gynaecologic cancer<br>n=1269 control women<br><br>**Characteristics**<br>Age (years), mean (SD): gynaecologic cancer survivors 63.72 (6.46); controls 61.69 (6.84)<br><br>BMI (kg/m2), mean (SD): gynaecologic cancer survivors 27.36 (7.40); controls 25.07 (4.89)<br><br>Parity (n), median (Inter-quartile | **Comorbidities**<br>The cancer survivors group gathered gynaecologic (ovarian, endometrial, cervical) cancer patients treated at the gynaecologic cancer Department of the University Hospital. | **Details**<br>The PFDI-20 questionnaire was used for assessment of PFD and urinary symptoms and pelvic pain<br>The PFIQ-7 was used to assess PFD effects on quality of life | **Results**<br>**PFDI-20:**<br>Gynealogical cancer survivors: 33.3 (95% CI 14.6 to 74.1)<br>Controls: 20 (95% CI 4.2 to 50.0)<br><br>**PFIQ-7:**<br>Gynealogical cancer survivors: 4.8 (95% CI 0 to 47.6)<br>Controls: 0 (95% CI 0 to 14.3)<br><br>NB data converted from 95% CI into SD by NGA team for GRADE analysis. | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – gynaecological cancer department<br>4. Were objective, standard criteria used |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| **Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To assess the prevalence of pelvic floor, urinary and fecal disorders in gynaecologic cancer surviving patients compared to the general population through a self-questionnaire.<br><br>**Study dates**<br>October 2013 to April 2014<br><br>**Source of funding**<br>Institutional funding from Nimes University Hospital. | range): gynaecologic cancer survivors 2 (1-3); controls 2 (1-3)<br><br>**Inclusion criteria**<br>Gynaecologic cancer survivors: Patients were considered survivors if they were in remission and treatment-free for at least one year before enrolment from ovarian, endometrial or cervical cancer.<br>Control women: Women representative of the regional general population and were enrolled through an anonymous questionnaire sent along with the systematic biannual invitation for breast cancer screening by the Gard-Lozere Cancer Screening Program<br>Women for both groups were aged between 50 to 75 years old<br><br>**Exclusion criteria**<br>None reported | | | | for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – women who were cancer survivors were older, weighed more, had a higher BMI, and a higher % had a history of breast cancer<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (mean, 95% CI) extracted<br><br>Overall rating: Low risk |
| **Full citation**<br><br>Rortveit,G., Subak,L.L., Thom,D.H., Creasman,J.M., | **Sample size**<br>N=2109<br><br>**Characteristics** | **Comorbidities**<br>Conditions were assessed by self-reported questionnaires | **Details**<br>Pelvic floor conditions were assessed by self-report. Women were defined as having UI if | **Results**<br>**Diabetes: n (% of all women with this symptom)** | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| Vittinghoff,E., Van Den Eeden,S.K., Brown,J.S., Urinary incontinence, fecal incontinence and pelvic organ prolapse in a population-based, racially diverse cohort: prevalence and risk factors, Female Pelvic Medicine and Reconstructive Surgery, 16, 278-283, 2010<br><br>**Ref Id**<br><br>203705<br><br>**Country/ies where the study was carried out**<br><br>USA<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To investigate the prevalence and associated risk factors for UI, POP and FI, as well as combinations of these conditions, in a racially diverse population-based cohort of women<br><br>**Study dates**<br>October 1999 to February 2003<br><br>**Source of funding** | Age (years); mean (SD): 55.6 (8.6)<br><br>**Inclusion criteria**<br>Women between 40 and 69 years of age who, since age 18, had been members of the Kaiser Permanente Medical Care Program of Northern California, a large integrated health care delivery system with over 3 million members that serves about 25% of the population in the area<br><br>**Exclusion criteria**<br>None reported | | they reported weekly or greater UI and as having FI if they reported monthly or greater FI, since these frequencies have been observed as having substantial impact on daily activities. Pelvic organ prolapse was defined by self-reported symptoms of either a “feeling of bulging, pressure or protrusion” or a “visible bulging or protrusion from your vagina” in the past 12 months 8. | No condition, n (% of all women with this symptom): 99 (7)<br>UI only, n (%): 49 (10): *Of the 174 women with diabetes 49 (28.2%) had UI*<br>POP only, n (%): 4 (7) *Of the 174 women with diabetes 4 (2.3%) had POP*<br>FI only, n (%): 9 (20) *Of the 174 women with diabetes 9 (5.2%) had FI*<br><br>≥ 2 PFD conditions, n (%): 13 (11) *Of the 174 women with diabetes 13 (7.5%) had ≥2 PFD conditions*<br><br>*Of the 174 women with diabetes 49 (28.2%) had UI*<br><br>**COPD: n (% of all women with this symptom)**<br>No condition, n (%): 64 (5)<br>UI only, n (%): 39 (8) *Of the 123 women with COPD 39 (31.7%) had UI*<br>POP only, n (%): 3 (5) *Of the 123 women with COPD 3 (2.4%) had POP*<br>FI only, n (%): 4 (9) *Of the 123 women with COPD 4 (3.3%) had FI*<br>≥ 2 conditions, n (%): 13 (11) *Of the 123 women with COPD 13 (10.6%) had ≥2 PFD conditions* | 1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes - self-reported<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Not applicable – not comparative<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (n/N’s) extracted<br><br>Overall rating: Low risk |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
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| Funded by R01-HD-41134 NICHD Reproductive Risk Factors for Pelvic Organ Prolapse and the National Institutes Diabetes, Digestive and Kidney Diseases (NIDDK) Grant # DK53335 and the NIDDK/Office of Research on Women's Health Specialized Center of Research Grant # P50 DK064538. | | | | **Constipation ≥weekly: n (% of all women with this symptom)**<br>No condition, n (%): 1250 (90)<br>UI only, n (%): 422 (85) *Of the 1845 women with constipation 422 (22.9%) had UI*<br>POP only, n (%): 48 (80) *Of the 1845 women with constipation 48 (2.6%) had POP*<br>FI only, n (%): 38 (83) *Of the 1845 women with constipation 38 (2.1%) had FI*<br>≥ 2 conditions, n (%): 87 (76) *Of the 1845 women with constipation 87 (4.7%) had ≥2 PFD conditions* | |
| **Full citation**<br><br>Rutledge, T. L., Heckman, S. R., Qualls, C., Muller, C. Y., Rogers, R. G., Pelvic floor disorders and sexual function in gynecologic cancer survivors: a cohort study, American Journal of Obstetrics & GynecologyAm J Obstet Gynecol, 203, 514.e1-7, 2010<br><br>**Ref Id**<br><br>1194272 | **Sample size**<br>N= 368<br>n=260 survivors of gynaecologic cancer<br>n=108 gynaecologic patients<br><br>**Characteristics**<br>Age (years), mean (SD): cancer survivors 57 (12); gynaecologic patients 47 (10)<br><br>Parity, mean (range): cancer survivors | **Comorbidities**<br>Cancer survivors: women who attended the gynaecologic oncology clinics for routine surveillance visits who were >=30 years old and had a history of uterine, cervical, ovarian, or vulvar cancer. Survivors were disease and treatment free for at least 1 year. | **Details**<br>Gynaecologic patients were recruited from women at a general gynaecology clinic<br><br>PFD was measured using the following questionnaires:<br>Urinary incontinence: Sandvik Incontinence Severity Index (a 2-question symptom severity scale that measures the presence and amount of urinary leakage.) | **Results**<br>Any urinary incontinence (Incontinence severity index score >0), n (%): Cancer survivors 176 (70); gynaecologic patients 56 (56)<br>Moderate/severe urinary incontinence, n (%): Cancer survivors 105 (42); gynaecologic patients 26 (26)<br>Prolapse, n (%): Cancer survivors 20 (8); gynaecologic patients 14 (13)<br>Faecal incontinence, n (%): Cancer survivors 106 | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – gynaecological oncology clinics |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| **Country/ies where the study was carried out**<br><br>USA<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To assess the prevalence of pelvic floor disorders and sexual dysfunction in survivors of gynaecologic cancer compared with women at a general gynaecology clinic who had no history of a gynaecologic cancer<br><br>**Study dates**<br>Not reported<br><br>**Source of funding**<br>No funding reported | 2.2 (0-12); gynaecologic patients 2.2 (0-9)<br><br>Nulliparous, %: cancer survivors 25; gynaecologic patients 22<br><br>Menopause, %: cancer survivors 83; gynaecologic patients 36<br><br>Hysterectomy, %: cancer survivors 87; gynaecologic patients 26<br><br>**Inclusion criteria**<br>Gynaecologic patients: women at a general gynaecology clinic who were >=30 years old without a diagnosis of cancer<br>Cancer survivors: women who attended the gynaecologic oncology clinics for routine surveillance visits who were >=30 years old and had a history of uterine, cervical, ovarian, or vulvar cancer. Survivors were disease and treatment free for at least 1 year.<br><br>**Exclusion criteria**<br>None reported | | Anal incontinence: Wexner Faecal Incontinence scale (measures the presence and severity of anal incontinence symptoms, the scale records both the type (gas, mucus, liquid, solid stool) and frequency of anal incontinence symptoms. Presence of anal incontinence is defined as a score of >0.)<br>Pelvic organ prolapse: Question #35 from the Epidemiology of Prolapse and Incontinence Questionnaire (positive response to the question)<br>Sexual function with the Pelvic Organ Prolapse/Urinary Incontinence Sexual questionnaire (PISQ-12) (the questionnaire consists of 12 questions, 9 of which are not specific to women with pelvic floor disorders.) | (43); gynaecologic patients 34 (32)<br>Mean faecal incontinence severity score: Cancer survivors 2.8; gynaecologic patients 1.0<br>Pelvic organ prolapse/urinary incontinence sexual questionnaire total score, mean (SD): Cancer survivors 32 (7); gynaecologic patients 37 (6) | 4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – survivors of gynaecological cancer were older, a higher % had partners, were native American, had menopause, a hysterectomy and had a bilateral oophorectomy<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (n/N's) extracted<br><br>Overall rating: Low risk |
| **Full citation** | **Sample size** | **Comorbidities** | **Details** | **Results** | **Limitations** |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| Schofield, C., Newton, R. U., Cohen, P. A., Galvao, D. A., McVeigh, J. A., Mohan, G. R., Tan, J., Salfinger, S. G., Straker, L. M., Peddle-McIntyre, C. J., Health-related quality of life and pelvic floor dysfunction in advanced-stage ovarian cancer survivors: associations with objective activity behaviors and physiological characteristics, Supportive Care in Cancer, 26, 2239-2246, 2018<br><br>**Ref Id**<br><br>1148264<br><br>**Country/ies where the study was carried out**<br><br>Australia<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>(1) to compare HRQoL and PFD in Ovarian Cancer Survivors who had completed first-line treatment to age-matched controls;<br>(2) to investigate associations between HRQoL and PFD in Ovarian Cancer Survivors; | N=40<br>n=20 ovarian cancer survivors<br>n=20 controls<br><br>**Characteristics**<br>Age (years), mean (SD): Ovarian cancer survivors 63.2 (8.9); Controls 63.0 (9.1)<br>BMI (kg/m2), mean (SD): Ovarian cancer survivors 27.4 (4.5); Controls 27.2 (4.5)<br>One or more comorbidity: Ovarian cancer survivors 75%; Controls 80%<br><br>Ovarian cancer survivors: 5.3 (range 3 to 18) months post cancer treatment.<br>All had had surgery and 9 (45%) received neoadjuvant chemotherapy and 11 (55%) having adjuvant chemotherapy.<br><br>**Inclusion criteria**<br>Ovarian cancer survivors were eligible for participation if they:<br><br>• had histologically confirmed stage III–IV epithelial Ovarian Cancer, | Women who were ovarian cancer survivors were recruited through the consultation rooms of three gynaecologic oncologists.<br>Controls were recruited from snowball sampling from staff at a local university | Self-reported PFD was measured with the Australian Pelvic Floor Questionnaire (APFQ)<br>The APFQ has four subscales to assess bladder, bowel, POP symptoms, and sexual function. Bladder, bowel, and POP symptom scores out of 10 were calculated and combined for a score out of 30 for the pelvic floor score. Higher scores in all domains indicate that women are experiencing more symptoms and thus more dysfunction.<br>Sexual function scores were not calculated as a large percentage of women (55% of all participants) indicating sexual inactivity and thus not completing the section. | **Bladder score, mean (SD); median [range]**<br>Ovarian cancer survivor: 1.11 (1.89); 1.11 [0 to 4]<br>Control group: 1.33 (1.61); 1.33 [0.22 to 5.11]<br><br>**Bowel score, mean (SD); median [range]**<br>Ovarian cancer survivor: 2.23 (1.87); 2.06 [0 to 6.18]<br>Control group: 1.97 (1.38); 2.06 [0 to 4.41]<br><br>**POP score, mean (SD); median [range]**<br>Ovarian cancer survivor: 0 (0); 0 [0 to 2]<br>Control group: 0 (0); 0 [0 to 4.67]<br><br>**Pelvic floor score, mean (SD); median [range]**<br>Ovarian cancer survivor: 4.05 (4.85); 4.06 [0 to 8.71]<br>Control group: 3.03 (2.66); 3.03 [0.52 to 13.9] | Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – gynaecological oncologists<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – more ovarian cancer survivors were not currently working and had higher levels of education<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (mean, SD) extracted |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| (3) to explore associations of HRQoL and PFD with objective activity behaviours, physical function, and body composition in Ovarian Cancer Survivors.<br><br>**Study dates**<br>July 2015 to May 2016<br><br>**Source of funding**<br>Three of the ten authors are supported by funding from the Jakovich Family and the St John of God Foundation; a Cancer Council of Western Australia Research Fellowship and a Cancer Council of Western Australia Postdoctoral Research Fellowship. | • were 3–24 months post completion of first-line treatment,<br>• were ≥ 18 years of age,<br>• received approval from the treating oncologist or general practitioner,<br>• were able to walk 400 m,<br>• were proficient in English,<br>• had no existing or suspected bone metastases,<br>• had no acute illness or any musculoskeletal, cardiovascular, or neurological disorder that could put them at risk during exercise testing.<br><br>The same non-cancer eligibility criteria applied for controls.<br><br>**Exclusion criteria**<br>None reported | | | | Overall rating: Low risk |
| **Full citation** | **Sample size** | **Comorbidities** | **Details** | **Results** | **Limitations** |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| Segal, S., John, G., Sammel, M., Andy, U. U., Chu, C., Arya, L. A., Brown, J., Schmitz, K., Urinary incontinence and other pelvic floor disorders after radiation therapy in endometrial cancer survivors, Maturitas, 18, 18, 2017<br><br>**Ref Id**<br><br>651422<br><br>**Country/ies where the study was carried out**<br><br>USA<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To investigate radiation therapy as a risk factor for urinary incontinence and other pelvic floor disorders in endometrial cancer survivors.<br><br>**Study dates**<br>2006 to 2010<br><br>**Source of funding**<br>The primary author was funded by a NIH T32 grant during the course of | N=149<br>n=87 no radiation<br>n=62 radiation therapy<br><br>**Characteristics**<br>Age (years), median (range): No radiation 63 (58-67); Radiation therapy 64 (58-71)<br><br>BMI (kg/m2), median (range): No radiation 30.8 (25.4-37.5); Radiation therapy 30.3 (25.4-35.6)<br><br>Parity, median (interquartile range): No radiation 2 (1-3); Radiation therapy 2 (0-3)<br><br>Menopausal at diagnosis, n (%): No radiation 65 (74.7); Radiation therapy 48 (77.4)<br><br>**Inclusion criteria**<br>Subjects were identified using fellow surgical case logs from 2008 to 2010 and ICD-9 diagnosis codes 179.0 (malignant neoplasm of uterus, part unspecified) and 182.0 (malignant neoplasm of corpus uteri, except isthmus) to 182.8 (malignant neoplasm of other specified sites of body of uterus). | Participants were identified using fellow surgical case logs from 2008 to 2010 and ICD-9 diagnosis codes 179.0 (malignant neoplasm of uterus, part unspecified) and 182.0 (malignant neoplasm of corpus uteri, except isthmus) to 182.8 (malignant neoplasm of other specified sites of body of uterus).<br>The primary exposure was radiation treatment with external beam radiation therapy and/or vaginal brachytherapy radiation for endometrial cancer. Radiation treatment was self-reported in the survey | Women were sent a letter inviting them to take part, if they agreed they were sent a 30-page survey.<br>UI was defined using the Incontinence Severity Index questionnaire (ISI). The presence of any urinary incontinence is noted as a score >0. Moderate to severe UI was defined as a score of at least 3 or greater, which corresponds to at least weekly or monthly leakage of more than drops of urine.<br>Stress or urgency urinary incontinence predominant symptoms were measured by the Questionnaire for Urinary Incontinence Diagnosis (QUID). Stress urinary incontinence was defined as stress score of >/ = 4 and urgency urinary incontinence was defined as an urge score of >/ = 6. Faecal incontinence was defined as at least monthly leakage of solid, liquid or mucous stool based on responses on the Faecal Incontinence Severity Index (FISI) [12]. The Pelvic Floor Distress Inventory (PFDI-20) question number 3, “Do you usually have a bulge or something falling out that you can see or feel in the vaginal area?” was used to define | Any urinary leakage, n (%): No radiation 50 (57.5); radiation therapy 30 (48.4)<br>Moderate to severe urinary incontinence, n (%): No radiation 24 (27.5); radiation therapy 14 (22.6)<br>Stress urinary incontinence, n (%): No radiation 21 (24.1); radiation therapy 13 (21.0)<br>Urgency urinary incontinence, n (%): No radiation 23 (26.4); radiation therapy 8 (13)<br>Pelvic organ prolapse (bulge), n (%): No radiation 3 (3.4); radiation therapy 4 (6.5)<br>Any faecal incontinence, n (%): No radiation 42 (48.3); radiation therapy 28 (45.2)<br>Mucous leakage, n (%): No radiation 8 (9.2); radiation therapy 4 (6.5)<br>Liquid stool leakage, n (%): No radiation 29 (33.3); radiation therapy 14 (22.6)<br>Solid stool leakage, n (%): No radiation 32 (36.8); radiation therapy 20 (32.3)<br>Sexual function score, median (Interquartile range): No radiation 32 (16 to 38); radiation therapy 21 (0 to 34) | Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – diagnostic codes<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? No<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (mean, SD) extracted<br><br>Overall rating: Low risk |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| study design and data collection/analysis, and manuscript preparation. | Women were 20 years of age and older<br><br>**Exclusion criteria**<br>Women who were unable to complete a written survey because of illiteracy, non-English speaking or had cognitive impairments | | symptomatic pelvic organ prolapse.<br>Sexual function was measured by the Pelvic Organ Prolapse/Urinary Incontinence Sexual questionnaire (PISQ-12). Responses are measured on a Likert scale with higher scores indicating better function. The maximum possible score of the PISQ is 48. | | |
| **Full citation**<br><br>Singh, P., Seo, Y., Ballou, S., Ludwig, A., Hirsch, W., Rangan, V., Iturrino, J., Lembo, A., Nee, J. W., Pelvic Floor Symptom Related Distress in Chronic Constipation Correlates With a Diagnosis of Irritable Bowel Syndrome With Constipation and Constipation Severity but Not Pelvic Floor Dyssynergia, Journal of neurogastroenterology and motilityJ Neurogastroenterol Motil, 25, 129-136, 2019<br><br>**Ref Id**<br><br>1194276<br><br>**Country/ies where the study was carried out**<br><br>USA | **Sample size**<br>N=107<br>n=64 functional constipation<br>n=43 Irritable bowel syndrome with constipation<br><br>**Characteristics**<br>Functional constipation = FC; Irritable bowel syndrome with constipation = IBS-C<br>Age (years), mean (95% CI); FC 50 (46 to 53); IBS-C 41 (37 to 46)<br><br>**Inclusion criteria**<br>All female patients aged over 18 years undergoing anorectal manometry were consecutively enrolled. | **Comorbidities**<br>Individuals who met the Rome III criteria for IBS-C and FC were included in the study. | **Details**<br>Women were asked to complete the PFDI-20 questionnaire as part of their clinical care. | **Results**<br>Functional constipation = FC; Irritable bowel syndrome with constipation = IBS-C<br>Pelvic organ prolapse distress inventory score (POPDI-6), mean (95%CI): FC 25.0 (19.4 to 30.6); IBS-C 38.2 (31.0 to 45.4)<br>Colorectal anal distress inventory score (CRADI-8), mean (95%CI): FC 37.6 (32.0 to 43.3); IBS-C 46.5 (39.6 to 53.3)<br>Urinary distress inventory score (UDI-6), mean (95%CI): FC 19.5 (12.7 to 26.2); IBS-C 33.7 (24.9 to 42.5)<br>Pelvic floor distress inventory score (PFDI-20), mean (95%CI): FC 79.2 (64.9 to 93.6); IBS-C 118.0 (99.6 to 136.3) | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies<br><br>1. Were the criteria for inclusion in the sample clearly defined? Yes<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes – Rome II criteria used<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – women with functional constipation were older |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| **Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>to investigate if (1) patient reported pelvic floor symptom dysfunction measured by Pelvic Floor Distress Inventory (PFDI-20) is significantly different among constipation subtypes (Irritable Bowel Syndrome-Constipation vs Functional Constipation), and (2) pelvic floor symptom dysfunction correlates with findings on Anorectal Manometry (ARM) and balloon expulsion test (BET).<br><br>**Study dates**<br>December 2012 to June 2016<br><br>**Source of funding**<br>funded in part by National Institutes of Health grants RO1AT008573-03 and 5T32DK007760-19. | Individuals who met the Rome III criteria for IBS-C and FC were included in the study.<br><br>**Exclusion criteria**<br>Major anorectal or colonic surgery | | | NB data converted from 95% CI into SD by NGA team for GRADE analysis. | 6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (mean, 95% CI extracted)<br><br>Overall rating: Low risk |
| **Full citation**<br><br>Wang,J., Varma,M.G., Creasman,J.M., | **Sample size**<br>N=2107<br>n=204 with IBS<br>n=1903 Controls | **Comorbidities**<br>IBS status was determined by a single self-report question: “Has | **Details**<br>Women were recruited from the Reproductive Risks for Incontinence | **Results**<br>**Urinary urgency, >= weekly, n (%):**<br>IBS 74 (40) | **Limitations**<br>Joanna Briggs Institute Appraisal Checklist for Cross Sectional Studies |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| Subak,L.L., Brown,J.S., Thom,D.H., van den Eeden,S.K., Pelvic floor disorders and quality of life in women with self-reported irritable bowel syndrome, Alimentary Pharmacology and Therapeutics, 31, 424-431, 2010<br><br>**Ref Id**<br><br>109876<br><br>**Country/ies where the study was carried out**<br><br>USA<br><br>**Study type**<br>Cross-sectional<br><br>**Aim of the study**<br>To examine the association of pelvic floor disorders with Irritable Bowel Syndrome and the effects of such symptoms on quality of life, using a population-based cohort of middle-aged women.<br><br>**Study dates**<br>October 1999 to February 2003<br><br>**Source of funding** | **Characteristics**<br>IBS = irritable bowel syndrome<br><br>Age (years), mean (SD): IBS 56 (9); Control 56 (9)<br><br>Hysterectomy, n (%): IBS 74 (36); Control 401 (21)<br>Urinary incontinence surgery, n (%): IBS 8 (4); Control 42 (2)<br>POP surgery, n (%): IBS 18 (9); Control 57 (3)<br>Colon surgery, n (%): IBS 18 (9); Control 60 (3)<br><br>**Inclusion criteria**<br>Having at least one-half of all births at Kaiser,<br><br>**Exclusion criteria**<br>None reported | a medical doctor or other medical person ever told you that you had irritable bowel syndrome or IBS?" | Study at Kaiser. This was a population-based, racially diverse cohort (20% African–American, 20% Latina, 20% Asian–American, and 40% white) study.<br>Urinary incontinence was defined a priori as leakage at least once a month for at least 3 months in a row. Frequency of urine leakage and urgency without leakage over the past 12 months was assessed using standardized questions. Urinary incontinence-specific quality of life was measured with the Incontinence Impact Questionnaire<br>Pelvic organ prolapse was defined as a "feeling of bulging, pressure, or protrusion" or a "visible bulging or protrusion."<br>Sexual activity was defined as "any activity that is sexually arousing to you, including masturbation." Sexual function was assessed by the use of six questions (see results) | Control 446 (30)<br><br>**Any urinary incontinence, n (%):**<br>Never<br>IBS 34 (17)<br>Control 557 (29)<br><br>Less than monthly<br>IBS 57 (28)<br>Control 552 (29)<br><br>Monthly<br>IBS 39 (19)<br>Control 265 (14)<br><br>Weekly<br>IBS 33 (16)<br>Control 308 (16)<br><br>Daily<br>IBS 41 (20)<br>Control 221 (12)<br><br>**Symptomatic POP in last 12 months, n (%):**<br>IBS 25 (12)<br>Control 93 (5) | 1. Were the criteria for inclusion in the sample clearly defined? Unclear<br>2. Were the study subjects and the setting described in detail? Yes<br>3. Was the exposure measured in a valid and reliable way? Yes - self-reported<br>4. Were objective, standard criteria used for measurement of the condition? Yes<br>5. Were confounding factors identified? Yes – a higher % of women with IBS were Caucasian, had diabetes, had had a hysterectomy, had had POP surgery, had had colon surgery<br>6. Were strategies to deal with confounding factors stated? Not applicable<br>7. Were the outcomes measured in a valid and reliable way? Yes<br>8. Was appropriate statistical analysis used? Not applicable – raw data (n/N's) extracted |

| Study details | Participants | Comorbidity | Methods | Outcomes | Comments |
|---|---|---|---|---|---|
| The Reproductive Risk of Incontinence Study in Kaiser was funded in full by the National Institutes of Diabetes and Digestive and Kidney Diseases Grant #R01-DK53335 | | | | | Overall rating: Some concerns |

*AI: anal incontinence; APFQ: Australian Pelvic Floor Questionnaire; BMI: body mass index; COPD: chronic obstructive pulmonary disorder; CRADI-8: Colorectal anal distress inventory score; CRAIQ-7: Colorectal-anal impact questionnaire; FC: functional constipation; FI: Faecal Incontinence; FISI: Faecal Incontinence Severity Index; IBS: Irritable bowel syndrome; IBS-C: Irritable bowel syndrome with constipation; KPSC: Kaiser Permanente Southern California; MS: metabolic syndrome; OAB: overactive bladder; PFD: Pelvic floor dysfunction; PFDI-20: Pelvic floor distress inventory score; PISQ-12: Pelvic Organ Prolapse/Urinary Incontinence Sexual questionnaire; POP: pelvic organ prolapse; POPDI-6 Pelvic organ prolapse distress inventory score; POPIQ-7: Pelvic organ prolapse impact questionnaire; SUI: stress urinary incontinence; UDI-6: Urinary Distress Inventory, short form; UI: urinary incontinence; UIQ-7 Urinary impact questionnaire; UUI: urge urinary incontinence*

# Appendix E – Forest plots

## Forest plots for review question Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction?

No meta-analysis was conducted for this review question and so there are no forest plots.

# Appendix F – GRADE tables

## GRADE tables for review question: Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction?

### Table 5 Clinical evidence profile for prevalence of PFD in women who have survived ovarian cancer compared to control women

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Ovarian Cancer Survivors | Controls | Relative (95% CI) | Absolute | | |
| **PFD - Pelvic floor score (Better indicated by lower values)** | | | | | | | | | | | | |
| Schofield 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[1] | none | 20 | 20 | - | MD 1.02 higher (1.4 lower to 3.44 higher) | LOW | CRITICAL |
| **Urinary - Bladder score (Better indicated by lower values)** | | | | | | | | | | | | |
| Schofield 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[1] | none | 20 | 20 | - | MD 0.22 lower (1.31 lower to 0.87 higher) | LOW | CRITICAL |
| **Anal - Bowel score (Better indicated by lower values)** | | | | | | | | | | | | |
| Schofield 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[1] | none | 19 | 20 | - | MD 0.26 higher (0.78 lower to 1.3 higher) | LOW | CRITICAL |
| **Prolapse - POP score (Better indicated by lower values)** | | | | | | | | | | | | |
| Schofield 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 20 | 19 | - | not applicable[2] | HIGH | CRITICAL |

*CI: confidence interval; MD: mean difference; PFD: pelvic floor dysfunction; POP: pelvic organ prolapse*
*1 95% CI crosses 2 MIDs*
*2 Symptom score for POP was zero for both ovarian cancer survivors and controls*

**Table 6 Clinical evidence profile for prevalence of PFD in women who have survived gynaecological cancer compared to control women**

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Gynealogical cancer survivors | Controls | Relative (95% CI) | Absolute | | |
| **PFD - PFDI-20 (Better indicated by lower values)** | | | | | | | | | | | | |
| Neron 2019 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 89 | 1269 | - | MD 13.3 higher (18.19 lower to 44.79 higher) | HIGH | CRITICAL |
| **PFD - PFIQ-7 (Better indicated by lower values)** | | | | | | | | | | | | |
| Neron 2019 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 89 | 1269 | - | MD 4.8 higher (18.94 lower to 28.54 higher) | HIGH | CRITICAL |
| **PFD - POP/UI sexual questionnaire total score (Better indicated by lower values)** | | | | | | | | | | | | |
| Rutledge 2010 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 260 | 108 | - | MD 5 lower (6.42 to 3.58 lower) | HIGH | CRITICAL |
| **Urinary - Any UI** | | | | | | | | | | | | |
| Rutledge 2010 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 176/260 (67.7%) | 56/108 (51.9%) | RR 1.31 (1.07 to 1.59) | 159 more per 1000 (from 51 more to 250 more) | HIGH | CRITICAL |
| **Urinary - Moderate or Severe UI** | | | | | | | | | | | | |
| Rutledge 2010 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 105/260 (40.4%) | 26/108 (24.1%) | RR 1.68 (1.16 to 2.42) | 164 more per 1000 (from 50 more to 288 more) | HIGH | CRITICAL |
| **Anal - Faecal incontinence** | | | | | | | | | | | | |
| Rutledge 2010 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | serious[1] | none | 106/260 (40.8%) | 34/108 (31.5%) | RR 1.3 (0.95 to 1.77) | 93 more per 1000 (from 15 fewer to 211 more) | MODERATE | CRITICAL |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Gynealogical cancer survivors | Controls | Relative (95% CI) | Absolute | | |
| **Prolapse - Any Prolapse** | | | | | | | | | | | | |
| Rutledge 2010 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | serious[1] | none | 20/260 (7.7%) | 14/108 (13%) | RR 0.59 (0.31 to 1.13) | 53 fewer per 1000 (from 91 fewer to 17 more) | MODERATE | CRITICAL |

*CI: confidence interval; MD: mean difference; PFD: pelvic floor dysfunction; RR: relative risk; UI: urinary incontinence*
*1 95% CI crosses 1 MID*

**Table 7 Clinical evidence profile for prevalence of PFD in women who have survived endometrial cancer treated either with or without radiation therapy**

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | No Radiation Therapy in Endometrial Cancer Survivors | Radiation Therapy in Endometrial Cancer Survivors | Relative (95% CI) | Absolute | | |
| **Urinary - Any Urinary Leakage** | | | | | | | | | | | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | serious[1] | none | 50/87 (57.5%) | 30/62 (48.4%) | RR 1.19 (0.87 to 1.63) | 92 more per 1000 (from 63 fewer to 305 more) | MODERATE | CRITICAL |
| **Urinary - Moderate to Severe UI** | | | | | | | | | | | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[2] | none | 24/87 (27.6%) | 14/62 (22.6%) | RR 1.22 (0.69 to 2.17) | 50 more per 1000 (from 70 fewer to 264 more) | LOW | CRITICAL |
| **Urinary – SUI** | | | | | | | | | | | | |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | No Radiation Therapy in Endometrial Cancer Survivors | Radiation Therapy in Endometrial Cancer Survivors | Relative (95% CI) | Absolute | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[2] | none | 21/87 (24.1%) | 13/62 (21%) | RR 1.15 (0.63 to 2.12) | 31 more per 1000 (from 78 fewer to 235 more) | LOW | CRITICAL |
| **Urinary - Urgency UI** | | | | | | | | | | | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | serious[1] | none | 23/87 (26.4%) | 8/62 (12.9%) | RR 2.05 (0.98 to 4.28) | 135 more per 1000 (from 3 fewer to 423 more) | MODERATE | CRITICAL |
| **Anal - Any Faecal Incontinence** | | | | | | | | | | | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[2] | none | 42/87 (48.3%) | 28/62 (45.2%) | RR 1.07 (0.75 to 1.52) | 32 more per 1000 (from 113 fewer to 235 more) | LOW | CRITICAL |
| **Anal - Mucous leakage** | | | | | | | | | | | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[2] | none | 8/87 (9.2%) | 4/62 (6.5%) | RR 1.43 (0.45 to 4.52) | 28 more per 1000 (from 35 fewer to 227 more) | LOW | CRITICAL |
| **Anal - Liquid stool leakage** | | | | | | | | | | | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | serious[1] | none | 29/87 (33.3%) | 14/62 (22.6%) | RR 1.48 (0.85 to 2.55) | 108 more per 1000 (from 34 fewer to 350 more) | MODERATE | CRITICAL |
| **Anal - Solid stool leakage** | | | | | | | | | | | | |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | No Radiation Therapy in Endometrial Cancer Survivors | Radiation Therapy in Endometrial Cancer Survivors | Relative (95% CI) | Absolute | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[2] | none | 32/87 (36.8%) | 20/62 (32.3%) | RR 1.14 (0.72 to 1.8) | 45 more per 1000 (from 90 fewer to 258 more) | LOW | CRITICAL |
| **Prolapse - Pelvic organ prolapse (bulge)** | | | | | | | | | | | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[2] | none | 3/87 (3.4%) | 4/62 (6.5%) | RR 0.53 (0.12 to 2.3) | 30 fewer per 1000 (from 57 fewer to 84 more) | LOW | CRITICAL |
| **Sexual - Sexual function score (PISQ-12) (Better indicated by higher values)** | | | | | | | | | | | | |
| Segal 2017 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 87 | 62 | - | MD 10.5 higher (7.98 to 13.02 higher) | HIGH | CRITICAL |

*CI: confidence interval; MD: mean difference; PFD: pelvic floor dysfunction; RR: relative risk; SUI: stress urinary incontinence; UI: urinary incontinence*
*1 95% CI crosses 1 MID*
*2 95% CI crosses 2 MIDs*

**Table 8 Clinical evidence profile for prevalence of PFD in women who have metabolic syndrome compared to control women**

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Metabolic Syndrome | Controls | Relative (95% CI) | Absolute | | |
| **PFD - PFDI-20 (Better indicated by lower values)** | | | | | | | | | | | | |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Metabolic Syndrome | Controls | Relative (95% CI) | Absolute | | |
| Kim 2011 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 138 | 846 | - | MD 7.1 higher (6.69 to 7.51 higher) | HIGH | CRITICAL |
| **Urinary - UDI-6 (Better indicated by lower values)** | | | | | | | | | | | | |
| Kim 2011 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 138 | 846 | - | MD 3.5 higher (3.31 to 3.69 higher) | HIGH | CRITICAL |
| **Anal - CRADI-8 (Better indicated by lower values)** | | | | | | | | | | | | |
| Kim 2011 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 138 | 846 | - | MD 3.1 higher (2.9 to 3.3 higher) | HIGH | CRITICAL |
| **Prolapse - POPDI-6 (Better indicated by lower values)** | | | | | | | | | | | | |
| Kim 2011 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 138 | 846 | - | MD 0.5 higher (0.35 to 0.65 higher) | HIGH | CRITICAL |

*CI: confidence interval; MD: mean difference; PFD: pelvic floor dysfunction; RR: relative risk*

**Table 9 Clinical evidence profile for prevalence of PFD in women who have diabetes compared to control women**

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Diabetic | Controls | Relative (95% CI) | Absolute | | |
| **PFD - Any PFD** | | | | | | | | | | | | |
| Lawrence 2007 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | serious[2] | none | 167/393 (42.5%) | 1157/3569 (32.4%) | RR 1.31 (1.16 to 1.48) | 100 more per 1000 (from 52 more to 156 more) | LOW | CRITICAL |
| **Urinary – SUI** | | | | | | | | | | | | |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Diabetic | Controls | Relative (95% CI) | Absolute | | |
| Lawrence 2007 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | no serious imprecision | none | 92/393 (23.4%) | 497/3569 (13.9%) | RR 1.68 (1.38 to 2.05) | 95 more per 1000 (from 53 more to 146 more) | MODERATE | CRITICAL |
| **Urinary - Overactive bladder** | | | | | | | | | | | | |
| Lawrence 2007 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | no serious imprecision | none | 80/393 (20.4%) | 438/3569 (12.3%) | RR 1.66 (1.34 to 2.06) | 81 more per 1000 (from 42 more to 130 more) | MODERATE | CRITICAL |
| **Anal - Anal incontinence** | | | | | | | | | | | | |
| Lawrence 2007 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | serious[2] | none | 120/393 (30.5%) | 839/3569 (23.5%) | RR 1.3 (1.11 to 1.52) | 71 more per 1000 (from 26 more to 122 more) | LOW | CRITICAL |

*CI: confidence interval; MD: mean difference; PFD: pelvic floor dysfunction; RR: relative risk; SUI: stress urinary incontinence*
*1 Serious risk of bias in the evidence contributing to the outcomes as per RoB assessment*
*2 95% CI crosses 1 MID*

**Table 10 Clinical evidence profile for prevalence of PFD in women who have hypermobility compared to control women**

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Hypermobile | Controls | Relative (95% CI) | Absolute | | |
| **Urinary - Overactive bladder** | | | | | | | | | | | | |
| Knoepp 2013 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[1] | none | 3/46 (6.5%) | 51/541 (9.4%) | RR 0.69 (0.22 to 2.13) | 29 fewer per 1000 (from 74 fewer to 107 more) | LOW | CRITICAL |
| **Urinary – SUI** | | | | | | | | | | | | |
| Knoepp 2013 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[1] | none | 9/46 (19.6%) | 73/541 (13.5%) | RR 1.45 (0.78 to 2.71) | 61 more per 1000 (from 30 fewer to 231 more) | LOW | CRITICAL |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Hypermobile | Controls | Relative (95% CI) | Absolute | | |
| **Anal - Anal Incontinence** | | | | | | | | | | | | |
| Knoepp 2013 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[1] | none | 6/46 (13%) | 66/541 (12.2%) | RR 1.07 (0.49 to 2.33) | 9 more per 1000 (from 62 fewer to 162 more) | LOW | CRITICAL |
| **Prolapse - Prolapse symptoms** | | | | | | | | | | | | |
| Knoepp 2013 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[1] | none | 0/46 (0%) | 21/541 (3.9%) | RR 0.27 (0.02 to 4.36) | 28 fewer per 1000 (from 38 fewer to 130 more) | LOW | CRITICAL |
| **Prolapse - Prolapse on examination** | | | | | | | | | | | | |
| Knoepp 2013 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | very serious[1] | none | 5/46 (10.9%) | 60/541 (11.1%) | RR 0.98 (0.41 to 2.32) | 2 fewer per 1000 (from 65 fewer to 146 more) | LOW | CRITICAL |

*CI: confidence interval; MD: mean difference; PFD: pelvic floor dysfunction; RR: relative risk; SUI: stress urinary incontinence*
*1 95% CI crosses 2 MIDs*

**Table 11 Clinical evidence profile for prevalence of PFD in women who have fibromyalgia compared to control women**

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Fibromyalgia | Controls | Relative (95% CI) | Absolute | | |
| **PFD - PFDI-20 (Better indicated by lower values)** | | | | | | | | | | | | |
| Carrillo-Izquierdo 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 220 | 140 | - | MD 47 higher (45.9 to 48.1 higher) | HIGH | CRITICAL |
| **PFD - PFIQ-7 (Better indicated by lower values)** | | | | | | | | | | | | |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Fibromyalgia | Controls | Relative (95% CI) | Absolute | | |
| Carrillo-Izquierdo 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 220 | 140 | - | MD 21.80 higher (20.51 to 23.09 higher) | HIGH | CRITICAL |
| **Urinary - UDI-6 (Better indicated by lower values)** | | | | | | | | | | | | |
| Carrillo-Izquierdo 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 220 | 140 | - | MD 19.1 higher (18.69 to 19.51 higher) | HIGH | CRITICAL |
| **Urinary - UIQ-7 (Better indicated by lower values)** | | | | | | | | | | | | |
| Carrillo-Izquierdo 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 220 | 140 | - | MD 9.46 higher (8.99 to 9.93 higher) | HIGH | CRITICAL |
| **Anal - CRADI-8 (Better indicated by lower values)** | | | | | | | | | | | | |
| Carrillo-Izquierdo 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 220 | 140 | - | MD 9.2 higher (8.88 to 9.52 higher) | HIGH | CRITICAL |
| **Anal - CRAIQ-7 (Better indicated by lower values)** | | | | | | | | | | | | |
| Carrillo-Izquierdo 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 220 | 140 | - | MD 8.4 higher (8 to 8.8 higher) | HIGH | CRITICAL |
| **Prolapse - POPDI-6 (Better indicated by lower values)** | | | | | | | | | | | | |
| Carrillo-Izquierdo 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 220 | 140 | - | MD 16.5 higher (16.18 to 16.82 higher) | HIGH | CRITICAL |
| **Prolapse - POPIQ-7 (Better indicated by lower values)** | | | | | | | | | | | | |
| Carrillo-Izquierdo 2018 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 220 | 140 | - | MD 9.7 higher (9.28 to 10.12 higher) | HIGH | CRITICAL |

*CI: confidence interval; MD: mean difference; PFD: pelvic floor dysfunction; RR: relative risk*

**Table 12 Clinical evidence profile for prevalence of PFD in women who have IBS compared to control women**

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | IBS | Controls | Relative (95% CI) | Absolute | | |
| **Urinary Incontinence - Any UI** | | | | | | | | | | | | |
| Wang 2010 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | serious[2] | none | 170/204 (83.3%) | 1346/1903 (70.7%) | RR 1.18 (1.1 to 1.26) | 127 more per 1000 (from 71 more to 184 more) | LOW | CRITICAL |
| **Urinary Incontinence – Never** | | | | | | | | | | | | |
| Wang 2010 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | no serious imprecision | none | 34/204 (16.7%) | 557/1903 (29.3%) | RR 0.57 (0.42 to 0.78) | 126 fewer per 1000 (from 64 fewer to 170 fewer) | MODERATE | CRITICAL |
| **Urinary Incontinence - Less than monthly** | | | | | | | | | | | | |
| Wang 2010 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | serious[2] | none | 57/204 (27.9%) | 552/1903 (29%) | RR 0.96 (0.76 to 1.21) | 12 fewer per 1000 (from 70 fewer to 61 more) | LOW | CRITICAL |
| **Urinary Incontinence - Monthly** | | | | | | | | | | | | |
| Wang 2010 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | serious[2] | none | 39/204 (19.1%) | 264/1903 (13.9%) | RR 1.38 (1.02 to 1.87) | 53 more per 1000 (from 3 more to 121 more) | LOW | CRITICAL |
| **Urinary Incontinence - Weekly** | | | | | | | | | | | | |
| Wang 2010 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | very serious[3] | none | 33/204 (16.2%) | 308/1903 (16.2%) | RR 1 (0.72 to 1.39) | 0 fewer per 1000 (from 45 fewer to 63 more) | VERY LOW | CRITICAL |
| **Urinary Incontinence – Daily** | | | | | | | | | | | | |
| Wang 2010 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | no serious imprecision | none | 41/204 (20.1%) | 221/1903 (11.6%) | RR 1.73 (1.28 to 2.34) | 85 more per 1000 (from 33 more to 156 more) | MODERATE | CRITICAL |
| **Urinary urgency - >= weekly** | | | | | | | | | | | | |
| Wang 2010 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | no serious imprecision | serious[2] | 72/204 (35.3%) | 446/1903 (23.4%) | RR 1.51 (1.23 to 1.84) | 120 more per 1000 (from 54 more to 197 more) | LOW | CRITICAL |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | IBS | Controls | Relative (95% CI) | Absolute | | |
| **Symptomatic POP - Last 12 months** | | | | | | | | | | | | |
| Wang 2010 | observational studies | serious[1] | no serious inconsistency | no serious indirectness | no serious imprecision | none | 25/204 (12.3%) | 93/1903 (4.9%) | RR 2.51 (1.65 to 3.81) | 74 more per 1000 (from 32 more to 137 more) | MODERATE | CRITICAL |

*CI: confidence interval; IBS: irritable bowel syndrome; MD: mean difference; PFD: pelvic floor dysfunction; POP: pelvic organ prolapse; RR: relative risk;*
*1 Serious risk of bias in the evidence contributing to the outcomes as per RoB assessment*
*2 95% CI crosses 1 MID 3 95% CI cross 2 MIDs*

**Table 13 Clinical evidence profile for prevalence of PFD in women who have functional constipation compared to women who have IBS with constipation**

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Functional constipation | IBS with constipation | Relative (95% CI) | Absolute | | |
| **PFD - PFDI-20 (Better indicated by lower values)** | | | | | | | | | | | | |
| Singh 2019 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 64 | 43 | - | MD 38.8 lower (58.01 to 19.59 lower) | HIGH | CRITICAL |
| **Urinary - UDI-6 (Better indicated by lower values)** | | | | | | | | | | | | |
| Singh 2019 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 64 | 43 | - | MD 14.2 lower (23.39 to 5.01 lower) | HIGH | CRITICAL |
| **Anal - CRADI-8 (Better indicated by lower values)** | | | | | | | | | | | | |

| Quality assessment | | | | | | | No of patients | | Effect | | Quality | Importance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No of studies | Design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Functional constipation | IBS with constipation | Relative (95% CI) | Absolute | | |
| Singh 2019 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 64 | 43 | - | MD 8.9 lower (16.14 to 1.66 lower) | HIGH | CRITICAL |
| **Prolapse - POPDI-6 (Better indicated by lower values)** | | | | | | | | | | | | |
| Singh 2019 | observational studies | no serious risk of bias | no serious inconsistency | no serious indirectness | no serious imprecision | none | 64 | 43 | - | MD 13.2 lower (20.73 to 5.67 lower) | HIGH | CRITICAL |

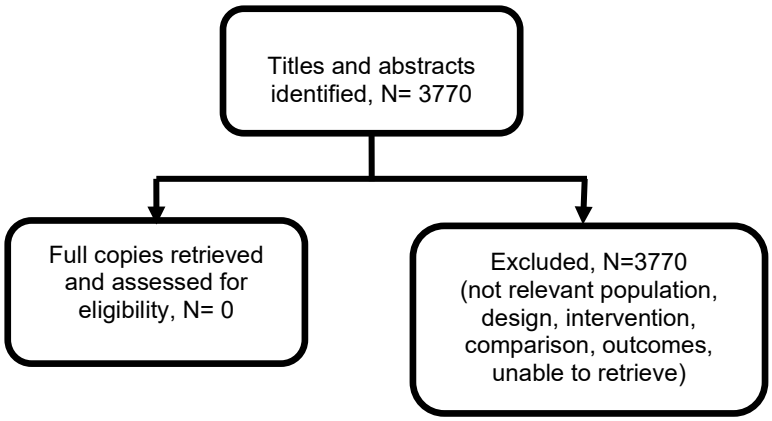
*CI: confidence interval; IBS: irritable bowel syndrome; MD: mean difference; PFD: pelvic floor dysfunction*

# Appendix G – Economic evidence study selection

## Economic evidence study selection for review question: What co-existing long-term conditions (for example chronic respiratory disorders) are associated with a higher risk of pelvic floor dysfunction?

No economic evidence was identified which was applicable to this review question.

**Figure 2**: **Study selection flow chart**



# Appendix H – Economic evidence tables

## Economic evidence tables for review question: What co-existing long-term conditions (for example chronic respiratory disorders) are associated with a higher risk of pelvic floor dysfunction?

No evidence was identified which was applicable to this review question.

# Appendix I – Economic evidence profiles

## Economic evidence profiles for review question: What co-existing long-term conditions (for example chronic respiratory disorders) are associated with a higher risk of pelvic floor dysfunction?

No economic evidence was identified which was applicable to this review question.

# Appendix J – Economic analysis

## Economic evidence analysis for review question: What co-existing long-term conditions (for example chronic respiratory disorders) are associated with a higher risk of pelvic floor dysfunction?

No economic analysis was conducted for this review question.

# Appendix K – Excluded studies

## Excluded studies for review question: Are co-existing long-term conditions (for example chronic respiratory disorders) associated with a higher risk of pelvic floor dysfunction?

### Clinical studies

**Table 14: Excluded studies and reasons for their exclusion**

| Study | Reason for exclusion |
|---|---|
| Andy, U. U., Harvie, H. S., Pahwa, A. P., Markland, A., Arya, L. A., The relationship between fecal incontinence, constipation and defecatory symptoms in women with pelvic floor disorders, Neurourology & UrodynamicsNeurourol Urodyn, 36, 495-498, 2017 | Whole population has PFD |
| Bellini M, Rappelli L, Alduini P, Nisita C, Barbanera A, Costa F, Mammini C, Mumolo MG, Stasi C, Cortopassi S, Mauri M, Maltinti G, Marchi S. Pelvic floor dyssynergia and psychiatric disorders. Does the snake bite its tail? Minerva Gastroenterol Dietol. 49(2) 135-139. 2003. Whole population has PFD | Whole population has PFD |
| Mazi, B., Kaddour, O., Al-Badr, A., Depression symptoms in women with pelvic floor dysfunction: a case-control study, International Journal of Women's HealthInt J Women Health, 11, 143-148, 2019 | Whole population has PFD |
| Nee, J., Kilaru, S., Kelley, J., Oza, S. S., Hirsch, W., Ballou, S., Lembo, A., Wolf, J., Prevalence of Functional GI Diseases and Pelvic Floor Symptoms in Marfan Syndrome and Ehlers-Danlos Syndrome: A National Cohort Study, Journal of Clinical GastroenterologyJ Clin Gastroenterol, 53, 653-659, 2019 | Population has men and women combined with no separate data for women only |
| Pizarro-Berdichevsky, J., Hitschfeld, M. J., Pattillo, A., Blumel, B., Gonzalez, S., Arellano, M., Cuevas, R., Alvo, J., Gorodischer, A., Flores-Espinoza, C., Goldman, H. B., Association between pelvic floor disorder symptoms and QoL scores with depressive symptoms among pelvic organ prolapse patients, Australian and New Zealand Journal of Obstetrics and Gynaecology, 56, 391-397, 2016 | Whole population has PFD |
| Prott, G., Shim, L., Hansen, R., Kellow, J., Malcolm, A., Relationships between pelvic floor symptoms and function in irritable bowel syndrome, Neurogastroenterology and Motility, 22, 764-769, 2010 | No relevant outcome data |
| Raza-Khan, F., Cunkelman, J., Lowenstein, L., Shott, S., Kenton, K., Prevalence of bowel symptoms in women with pelvic floor disorders, International Urogynecology Journal, 21, 933-938, 2010 | Whole population has PFD |
| Vrijens, D., Berghmans, B., Nieman, F., van Os, J., van Koeveringe, G., Leue, C., Prevalence of anxiety and depressive symptoms and their association with pelvic floor dysfunctions-A cross sectional cohort study at a Pelvic Care Centre, Neurourology & UrodynamicsNeurourol Urodyn, 21, 21, 2017 | Population includes men and women with data not reported separately |
| Zeleke, B. M., Ayele, T. A., Woldetsadik, M. A., Bisetegn, T. A., Adane, A. A., Depression among women with obstetric fistula, and pelvic organ prolapse in northwest Ethiopia, BMC PsychiatryBMC Psychiatry, 13, 236, 2013 | Whole population has PFD |

*PFD: pelvic floor dysfunction*

### Economic studies

No economic evidence was identified for this review.

# Appendix L – Research recommendations

## Research recommendations for review question: What co-existing long-term conditions (for example chronic respiratory disorders) are associated with a higher risk of pelvic floor dysfunction?

### Research question

Is there an increased risk of pelvic floor dysfunction in women with long-term conditions including: spinal and pelvic injuries, chronic fatigue syndrome, neurological diseases, mental health problems, history of Covid-19, learning disability, colorectal or bladder cancer, prior pelvic surgery and hypermobility.

### Why this is important

Preventative strategies for pelvic floor dysfunction are cost effective if targeted at those women with increased risk of developing PFD. The intensity of the preventative strategy may also differ between moderate and high risk groups. There is a need for a tool to stratify an individual's risk of PFD based on their characteristics and pre-existing conditions to guide decision making.

**Table 15: Research recommendation rationale**

| Research question | What pre-existing conditions increase the risk of pelvic floor dysfunction |
|---|---|
| **Why is this needed** | |
| Importance to 'patients' or the population | If an individual's risk can be determined as being high, measures can be introduced aiming to mitigate that risk, reducing morbidity overall |
| Relevance to NICE guidance | The relative absence of evidence regarding this topic currently restricts NICE guidance from making recommendations regarding stratification of an individual's risk of pelvic floor dysfunction. The outcome of this research would allow such recommendations to be developed and become part of NICE guidance. |
| Relevance to the NHS | Pelvic floor dysfunction is widespread and treatment uses NHS resources. There would be a benefit from reducing the incidence |
| National priorities | The NHS long term plan (2019 ) states "We will ensure that women have access to multidisciplinary pelvic health clinics and pathways across England via referral". |
| Current evidence base | There is very little good quality evidence as to how much many pre-existing conditions that are suspected to increase the risk of PFD actually do so. |
| Equality | The routine application of a tool to stratify risk across all women will allow measures to be targeted towards vulnerable groups who might otherwise not seek assistance |
| Feasibility | Although a tool might be developed, in order to be effective in reducing PFD it needs to be assessed in conjunction with research to assess the effectiveness of prevention strategies. |
| Other comments | None |

*PFD: pelvic floor dysfunction*

**Table 16: Research recommendation modified PICO table**

| Criterion | Explanation |
|---|---|
| Population | • Women who present with spinal and pelvic injuries |

| Criterion | Explanation |
|---|---|
| | • Women chronic fatigue syndrome<br>• Women with neurological diseases (for example Parkinson's disease, motor neurone disease, MS, stroke)<br>• Women with psychiatric problems (for example anxiety, depression, personality disorders)<br>• Women who have had Covid-19<br>• Women with learning difficulties<br>• Women who have had colorectal or bladder cancer<br>• Women with any pelvic surgery<br>• Women with hypermobility |
| Intervention | Record prevalence of PFD using validated questionnaires |
| Comparator | Women without these conditions and who have not had gynaecological cancer or any other chronic medical condition such as diabetes, cystic fibrosis or COPD, matched for age and BMI |
| Outcomes | Prevalence of PFD in each group |
| Study design | Cross sectional study (in women with and without PFD symptoms)<br>Or prospective cohort study (in women without PFD symptoms) |
| Timeframe | Point in time prevalence study or several years for prospective cohort study |
| Additional information | To produce a tool to stratify risk we would also need to calculate a weighting for the various conditions according to how great and impact each had on PFD as many women will have a combination of more than one. |

*BMI: body mass index; COPD: chronic obstructive pulmonary disease; MS: multiple sclerosis; PFD: pelvic floor dysfunction*