**Appendix S1: PRISMA 2020 Checklist**

| **Section and Topic**  | **Item #** | **Checklist item**  | **Location where item is reported**  |
| --- | --- | --- | --- |
| **TITLE**  |  |
| Title  | 1 | Identify the report as a systematic review. | Page 1, line 1-2 |
| **ABSTRACT**  |  |
| Abstract  | 2 | See the PRISMA 2020 for Abstracts checklist. | Page 3-4, line 50-81 |
| **INTRODUCTION**  |  |
| Rationale  | 3 | Describe the rationale for the review in the context of existing knowledge. | Page 5-6, line 94-125 |
| Objectives  | 4 | Provide an explicit statement of the objective(s) or question(s) the review addresses. | Page 6, line 127-129 |
| **METHODS**  |  |
| Eligibility criteria  | 5 | Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses. | Page 7, line 143-167 |
| Information sources  | 6 | Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted. | Page 7, line 153-165 |
| Search strategy | 7 | Present the full search strategies for all databases, registers and websites, including any filters and limits used. | Page 7, line 153-159, Appendix S3 |
| Selection process | 8 | Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process. | Page 7, line 168-179 |
| Data collection process  | 9 | Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process. | Page 8-9, line181-179 |
| Data items  | 10a | List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect. | Table 1 |
| 10b | List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information. | Table 1 |
| Study risk of bias assessment | 11 | Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process. | Page 9, line 200-208 |
| Effect measures  | 12 | Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results. | Table 1 |
| Synthesis methods | 13a | Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)). | Page 8, line 169-179 |
| 13b | Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions. | Page 8, line 182-187 |
| 13c | Describe any methods used to tabulate or visually display results of individual studies and syntheses. | Page 8-9, line189-197 |
| 13d | Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used. | Page 8-9, line189-197 |
| 13e | Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression). | Page 9, line 193-197 |
| 13f | Describe any sensitivity analyses conducted to assess robustness of the synthesized results. | N/A |
| Reporting bias assessment | 14 | Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases). | Page 9, line 200-208 |
| Certainty assessment | 15 | Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome. | Page 9, line 196-197 |
| **RESULTS**  |  |
| Study selection  | 16a | Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram. | Page 10, line 214-220. Figure 1 |
| 16b | Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded. | line 214-220 |
| Study characteristics  | 17 | Cite each included study and present its characteristics. | Table 1 |
| Risk of bias in studies  | 18 | Present assessments of risk of bias for each included study. | Figure 4 |
| Results of individual studies  | 19 | For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots. | Table 1Figure 2,3 |
| Results of syntheses | 20a | For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies. | Page 10-11, line 231-241 |
| 20b | Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect. | Table 1 |
| 20c | Present results of all investigations of possible causes of heterogeneity among study results. | Page 9, line 193-197 |
| 20d | Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results. | N/A |
| Reporting biases | 21 | Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed. | Page 11, line 244-246. Figure 4 |
| Certainty of evidence  | 22 | Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed. | Page 9, line 196-197 |
| **DISCUSSION**  |  |
| Discussion  | 23a | Provide a general interpretation of the results in the context of other evidence. | Page 12-15, line 264-343 |
| 23b | Discuss any limitations of the evidence included in the review. | Page 15, line 352-362 |
| 23c | Discuss any limitations of the review processes used. | Page 15-16 line 363-370 |
| 23d | Discuss implications of the results for practice, policy, and future research. | Page 16, line 373-386 |
| **OTHER INFORMATION** |  |
| Registration and protocol | 24a | Provide registration information for the review, including register name and registration number, or state that the review was not registered. | Page 7, line 148-149 |
| 24b | Indicate where the review protocol can be accessed, or state that a protocol was not prepared. | Page 7, line 148-149 |
| 24c | Describe and explain any amendments to information provided at registration or in the protocol. | N/A |
| Support | 25 | Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review. | Page 8, line 167 |
| Competing interests | 26 | Declare any competing interests of review authors. | Page 2, line 27-30 |
| Availability of data, code and other materials | 27 | Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review. | N/A |

**Appendix S2: MOOSE (Meta-analyses Of Observational Studies in Epidemiology) Checklist**

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**Appendix S3: Search Strategy**

Database: Ovid MEDLINE(R) and In-Process & Other Non-Indexed Citations <1946 to January 25, 2021>
Search Strategy:
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1 (Levator ani muscle avulsion or "Levator ani muscle avulsion" or LAM avulsion or (levator ani muscle adj3 avulsion) or (levator ani adj3 muscle avulsion) or Levator ani- muscle avulsion or "Levator ani -muscle avulsion" or (levator ani- muscle adj3 avulsion)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (70)

1. levator ani.mp. (1752)
2. 1 or 2 (1752)
3. (pubococcygeus or iliococcygeus or puborectalis or pelvic diaphragm or

coccygeus muscle or pelvic muscle weakness or (pelvic floor adj4 muscle)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (3174)

1. exp Pelvic Floor/ (5437)
2. 4 or 5 (6923)
3. (Avulsion\* or injur\* or defect\* or lesion\* or trauma\*or damage or tear\*).mp.

[mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (2543228)

1. 6 and 7 (1213)
2. ((risk adj factor) or (health adj correlates) or (risk adj score\*) or (risk factor adj

score\*) or population\* at risk).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (242426)

1. exp risk/ (1241663)
2. 9 or 10 (1362845)
3. 3 and 8 and 11 (67)

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Database: Embase <1974 to 2021 January 25>
Search Strategy:
--------------------------------------------------------------------------------
1 (Levator ani muscle avulsion or "Levator ani muscle avulsion" or LAM avulsion or (levator ani muscle adj3 avulsion) or (levator ani adj3 muscle avulsion) or Levator ani- muscle avulsion or "Levator ani -muscle avulsion" or (levator ani- muscle adj3 avulsion)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (144)

1. exp levator ani muscle/ (2813)
2. 1 or 2 (2845)
3. (pubococcygeus or iliococcygeus or puborectalis or Pelvic Diaphragm or

coccygeus muscle or pelvic muscle weakness or pelvic floor muscle or (pelvic floor adj4 muscle)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (7561)

1. exp pelvis floor/ (11377)
2. 4 or 5 (16495)
3. (Avulsion\* or injur\* or defect\* or lesion\* or trauma\*or damage or tear\*).mp.

[mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (3548960)

8 exp avulsion injury/ (8153)
9 7 or 8 (3548960)
10 6 and 9 (4194)
11 ((risk adj factor) or (health adj correlates) or (risk adj score\*) or (risk factor adj
score\*) or population\* at risk).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (1260903)

1. exp risk factor/ (1090167)
2. 11 or 12 (1260903)
3. 3 and 10 and 13 (124)

Search Name: levator ani muscle cochrane2

Last Saved: 03/02/2021

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ID Search

#1 Levator ani muscle avulsion or LAM avulsion or Levator ani-muscle avulsion

#2 "Levator ani muscle avulsion"

#3 levator ani muscle adj3 avulsion

#4 levator ani adj3 muscle avulsion

#5 "Levator ani -muscle avulsion"

#6 #1 or #2 or #3 or #4 or #5

#7 pubococcygeus or iliococcygeus or puborectalis or Pelvic Diaphragm or coccygeus muscle or “pelvic muscle weakness”or pelvic floor muscle or (pelvic floor adj4 muscle)

#8 pubococcygeus

#9 iliococcygeus

#10 puborectalis

#11 Pelvic Diaphragm

#12 coccygeus muscle

#13 “pelvic muscle weakness”

#14 pelvic floor muscle

#15 pelvic floor adj4 muscle

#16 #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15

#17 MeSH descriptor: [Pelvic Floor] explode all trees

#18 #16 or #17

#19 Avulsion\* or injur\* or defect\* or lesion\* or trauma\*or damage or tear\*

#20 #18 and #19

#21 (risk ADJ factor) or (health ADJ correlates) or (risk ADJ score\*) or (risk factor ADJ score\*) or (population\* at risk)

#22 #6 and #20 and #21

#23 transperineal ultrasound or magnetic resonance imaging or MRI or MRI Scans or MR Tomography or nuclear magnetic resonance imaging or NMR Imaging or nuclear magnetic resonance tomography or NMR tomography or translabial ultrasound or translabial ultrasonography

#24 MeSH descriptor: [Magnetic Resonance Imaging] explode all trees

#25 #23 or #24

#26 #22 and #25

**Appendix S4: Excluded studies**

|  |  |  |
| --- | --- | --- |
| Author | Title | Reason for exclusion |
| Anumba et al (2020) | Postnatal pelvic floor muscle stiffness measured by vaginal elastometry in women with obstetric anal sphincter injury: a pilot study. | No relevant data to the review |
| Aukee et al(2004) | An evaluation of pelvic floor anatomy and function by MRI. | No relevant data to the review |
| Beckley et al (2013) | Pelvic organ prolapse: A urology perspective | No relevant data to the review |
| Berger et al (2014) | Levator ani defect scores and pelvic organ prolapse: is there a threshold effect? | No relevant data to the review |
| Billecocq et al (2013) | Levator ani trauma after childbirth, from stretch injury to avulsion: review of the literature | No relevant data to the review  |
| Brandon et al(2012) | Pubic bone injuries in primiparous women: magnetic resonance imaging in detection and differential diagnosis of structural injury |  |
| Branham et al (2007) | Levator ani abnormality 6 weeks after delivery persists at 6 months | No relevant data to the review |
|  |  |  |
|  Brincat et al (2011)  | Pelvic floor symptoms and recovery after primiparous vaginal deliveries with known risk factors for levator ani injury | No relevant data (risk factors) to the review |
| Brincat et al (2011)  | Urethral closure pressures among primiparous women with and without levator ani muscle defects | No relevant data (risk factors) to the review |
| Casati et al (2016) | 2/3D ultrasound abnormalities one year after delivery: A risk factor for symptoms persistence? | No relevant data (risk factors) to the review |
| Caudwell-Hall et al (2015) | Levator avulsion is associated with prolapse 3-6 months after a first vaginal delivery | No relevant data (risk factors) to the review |
| Cheung et al (2017) | Levator ani muscle avulsion is a risk factor for expulsion within 1 year of vaginal pessary placed for pelvic organ prolapse. | No relevant data (risk factors) to the review |
| Caudwell-Hall et al (2018) | Atraumatic normal vaginal delivery: how many women get what they want? | No relevant data (risk factors) to the review Results not in line with PICO |
| Cheung et al (2017) | Levator ani muscle avulsion is a risk factor for expulsion within 1 year of vaginal pessary placed for pelvic organ prolapse. | No relevant data (risk factors) to the review |
| Dietz et al (2012) | Avulsion injury and levator hiatal ballooning: Two independent risk factors for prolapse? An observational study | No relevant data (risk factors) to the review |
| Dietz et al  | Levator trauma is associated with pelvic organ prolapse | No relevant data (risk factors) to the review |
| Dietz et al (2013) | Pelvic floor trauma in childbirth | No relevant data (risk factors) to the review |
| DeLancey(2007) | Comparison of levator ani muscle defects and function in women with and without pelvic organ prolapse. | No relevant data (risk factors) to the review |
| DeLancey(2017) | Does cross-sectional area of the pubovisceral muscle get smaller with aging and prolapse? | No relevant data (risk factors) to the reviewResults not in line with PICO |
| Dumoulin et al (2018) | Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women | Results not in line with PICO |
| Chen et al (2006) | Measurement of the pubic portion of the levator ani muscle in women with unilateral defects in 3-D models from MR images | No relevant data to the review |
| DeLancey et al (2017) | Mommy, how will the baby get out of your tummy? Will it hurt you? | No relevant data to the reviewResults not in line with PICO |
| Dietz et al(2007) | Does delayed child-bearing increase the risk of levator injury in labour? | Data not extractable (Included both primips and multips) |
| Dietz et al (2010) | Pelvic floor muscle trauma | No relevant data (risk factors) to the review |
| Dietz et al(2010) | The Role of Two- and Three-Dimensional Dynamic Ultrasonography in Pelvic Organ Prolapse | No relevant data (risk factors) to the review |
| Dietz et al (2016) | Is the levator-urethra gap helpful for diagnosing avulsion? | No relevant data (risk factors) to the review |
| Dietz et al (2018) | Long term outcomes of obstetrical levator ani avulsion | No relevant data (risk factors) to the review |
| Dietz et al (2020) | Levator avulsion and vaginal parity: do subsequent vaginal births matter? |  |
| Elnaggar et al (2018) | Prevalence of levator ani muscle injury (LAMI) among primiparous women with Obstetric Anal Sphincter Injury: A systematic review | Excluded as this is a systematic review |
| Friedman et al (2018) | Levator trauma and subsequent deliveries | No relevant data to the review |
| Garcia-Mejido et al (2019) | Can we predict levator ani muscle avulsion in instrumental deliveries through intrapartum transperineal ultrasound?. | Results not in line with PICO |
| Melendez Munoz et al (2018) | Anal incontinence: The role of the levator ani muscle in the absence of anal sphincter injury | No relevant data to the review  |
| Garcia Mejido et al (2018) | Influence of difficulty of instrumentation with vacuum on the rate of levator ani muscle avulsion identified by 3-4 d transperineal ultrasound. | No relevant data (risk factors) to the review |
| Garcia-Mejido et al (2019) | A comparable rate of levator ani muscle injury in operative vaginal delivery (forceps and vacuum) according to the characteristics of the instrumentation | No relevant data (risk factors) to the review  |
| El Haddad et al (2014) | Obstetric anal sphincter injuries (OASIS): Outcome of primary repair and risk factors for anal incontinence | No relevant data to the review |
| Handa et al (2018) | Joint effects of levator ani muscle injury, levator hiatus size, and pelvic muscle strength on pelvic organ prolapse among parous women | No relevant data to the review |
| Handa et al (2019) | Pelvic Floor Disorders After Obstetric Avulsion of the Levator Ani Muscle | No relevant data to the review |
| Handa et al (2019) | Pelvic organ prolapse as a function of levator ani avulsion, hiatus size, and strength | No relevant data to the review |
| Handa et al (2020) | Levator Morphology and Strength After Obstetric Avulsion of the Levator Ani Muscle | No relevant data (risk factors) to the review |
| Halle et al (2017) | Prevalences of major levator ani muscle defects 6 weeks and 1 year postpartum and factors associated with persisting major levator ani muscle defects 1 year postpartum | No relevant data (risk factors) to the review |
| Hegde et al (2013) | Does levator ANI damage lead to prolapse recurrence following pelvic floor surgery? | No relevant data (risk factors) to the review |
| Heilbrun et al(2010) | Correlation between levator ani muscle injuries on magnetic resonance imaging and fecal incontinence, pelvic organ prolapse, and urinary incontinence in primiparous women | No relevant data (risk factors) to the review |
| Hilde et al (2014) | Does pelvic floor muscle training enhance pelvic floor muscle recovery? An assessor blinded randomized controlled trial | No relevant data (risk factors) to the review |
| Green et al (2014) | Perineal and vaginal tears are markers for occult levator ani trauma | No relevant data to the review |
| Kamisan Atan et al (2016) | A tale of two hospitals | No relevant data to the review |
| Krofta et al (2018) | Finite element model focused on stress distribution in the levator ani muscle during forceps delivery | No relevant data to the review |
| Krofta et al (2019) | Stress distribution in the levator ani muscle during forceps delivery | No relevant data to reviewResults not in line with PICO  |
| Krcmar et al (2014) | Appearance of levator ani abnormalities and connective tissue disruption in magnetic resonance imaging in symptomatic primiparas after their first delivery | No relevant data to the review |
| Tan et al (2009) | Scientific and technical advances in continence recovery following radical prostatectomy | No relevant data to the review |
| Hall et al(2019) | Pelvic Floor Disorders After Obstetric Avulsion of the Levator Ani Muscle. | Data not extractable (Included both primips and multips) |
| Hall et al(2020) | Levator Morphology and Strength After Obstetric Avulsion of the Levator Ani Muscle. | Data not extractable (Included both primips and multips) |
| Lammers et al(2013) | Identifying risk factors for postoperative recurrence after pelvic floor reconstructive surgery | No relevant data to the review |
| Low et al (2016) | Assessing pelvic floor injury and recovery in low risk and high risk women experiencing avaginal birth or aesarean without labor | No relevant data (risk factors) to the review |
| Maran et al (2018) | Comparative anatomy on 3-D MRI of the urogenital sinus and the periurethral area before and during the second stage of labor during childbirth. | No relevant data (risk factors) to the review |
| Martinho et al(2019) | Birthweight and pelvic floor trauma after vaginal childbirth. | Results not in line with PICO (only included multips) |
| Martinho et al(2019) | Anatomic and functional evaluation of the levator ani muscle after an obstetric anal sphincter injury. | No relevant data (risk factors) to the review |
| Memon et al (2015) | Comparison of levator ani muscle avulsion injury after forceps-assisted and vacuum-assisted vaginal childbirth | Included both primips and multips |
| Morgan et al (2010) | Levator ani defect status and lower urinary tract symptoms in women with pelvic organ prolapse | No relevant data (risk factors) to the review |
| Miller et al (2010) | MRI findings in patients considered high risk for pelvic floor injury studied serially after vaginal childbirth | No relevant data (risk factors) to the review |
| Miller et al (2014) | Do signs and symptoms of pelvic floor disorders indicate levator ani tear severity at first childbirth? Findings from the evaluating maternal recovery from labor and delivery (EMRLD) study | No relevant data (risk factors) to the review |
| Miller et al (2015) | Evaluating maternal recovery from labor and delivery: bone and levator ani injuries. | No relevant data (risk factors) to the review |
| Notten et al (2017) | Diagnostic Accuracy and Clinical Implications of Translabial Ultrasound for the Assessment of Levator Ani Defects and Levator Ani Biometry in Women With Pelvic Organ Prolapse: A Systematic Review. | Excluded because this paper is a systematic review |
| Oliveira et al (2016) | Evaluation of pelvic floor damage during vaginal delivery | No relevant data (risk factors) to the review |
| Overs et al (2018) | Levator ani muscle avulsions and outcomes of anchester procedure |  |
| Pattillo et al (2014) | Is the levator-urethra gap helpful for the diagnosis of avulsion? | No relevant data (risk factors) to the review |
| Pattillo et al (2014) | Diagnosis of levator avulsion: Is it necessary to perform tomographic imaging on pelvic floor muscle contraction? | No relevant data (risk factors) to the review |
| Pattillo et al (2017) | Predicting levator avulsion from ICS POP-Q findings. | No relevant data (risk factors) to the review |
| Piloni et al (2013) | MR-defecography in obstructed defecation syndrome (ODS): technique, diagnostic criteria and grading | No relevant data to the review |
| Pipitone et al (2020) | Pelvic muscle edema following vaginal birth: Are all three levator ani muscles and anal sphincter equally involved? | No relevant data to the review |
| Rahmanou et al(2016) | The association between maternal age at first delivery and risk of obstetric trauma. | No relevant data to the review  |
| Reimers et al (2019) | Risk factors for anatomic pelvic organ prolapse at 6 weeks postpartum: a prospective observational study. | No relevant data (levator avulsion) to the review |
| Ross et al (2011) | Do levator ani tears affect the outcome of anterior vaginal repairs with mesh? | No relevant data to the review |
| Salman et al (2017) | Evaluating pelvic floor disruption following vaginal delivery using three-dimensional transperineal ultrasound | No relevant data (risk factors) to the review |
| Sheng et al (2019) | Association of index finger palpatory assessment of pubovisceral muscle body integrity with MRI-documented tear. | No relevant data to the review |
| Sheng et al (2020) | Association of pubovisceral muscle tear with functional capacity of urethral closure: evaluating maternal recovery from labor and delivery. | No relevant data to the review |
| Skinner et al (2015) | Psychological consequences of traumatic vaginal birth  | No relevant data (risk factors) to the review |
| Schwertner-Tiepelmann et al (2012) | Obstetric levator ani muscle injuries: current status. | No relevant data (risk factors) to the review |
| Shek et al (2010) | Does the Epi-NoÆ prevent levator trauma? A randomised controlled trial | No relevant data (risk factors) to the review |
| Shek et al (2012) | Residual defects of the external anal sphincter are common after oasis repair | No relevant data to the review |
| Shek et al (2013) | Anterior compartment mesh: a descriptive study of mesh anchoring failure | No relevant data to the review |
| Svabik et al (2016) | Randomized trial comparing vaginal mesh repair (prolift total) versus sacrospinous vaginal colpopexy (SSF) in the management of vaginal vault prolapse after hysterectomy for patients with levator ani avulsion injury-6 years-follow-up | No relevant data (risk factors) to the review |
| Tecson-Lim et al (2019) | Is age at menarche a predictor of pelvic floor trauma? | No relevant data to the review |
| Torrisi et al (2014) | Can the 3D transvaginal ultrasound examination for levator ani trauma become a standard part of the diagnosticwork-up of patients with pelvic organ prolapse? | Imaging modality was transvaginal ultrasound scan  |
| Trutnovsky et al (2013) | Pelvic floor dysfunction—does menopause duration matter? | No relevant data to the review |
| Trutnovsky et al (2016) | Levator ani trauma and pelvic organ prolapse - a comparison of three translabial ultrasound scoring systems. | No relevant data (risk factors)to the review |
| Van gruting et al (2015) | Accuracy of MRI, ultrasound and vaginal assessment for the diagnosis of levator ani muscle avulsion in women | No relevant data (risk factors) to the review |
| Vergeldt et al (2013) | Comparison of two scoring systems for diagnosing levator ani muscle damage | No relevant data (risk factors) to the review |
| Volloyhaug(2015) | Forceps delivery is associated with increased risk of pelvic organ prolapse and muscle trauma: a cross-sectional study 16-24 years after first delivery | Data not extractable (Included both primips and multips) |
| Volloyhaug et al (2016) | Is avulsion of the levator ani muscle associated with urinary and fecal incontinence in women from a normal population? | No relevant data (risk factors) to the review |
| Volloyhaug et al (2017) | Pelvic floor muscle trauma-does vaginal parity matter? | No relevant data (risk factors) to the review |
| Weemhoff et al2010  | Effects of age on levator function and morphometry of the levator hiatus in women with pelvic floor disorders | No relevant data (risk factors) to the review |
| Wong et al (2009) | A simplified method for determining hiatal biometry | No relevant data (risk factors) to the review |
| Woodley et al (2020) | Pelvic floor muscle training for preventing and treating urinary and faecal incontinence in antenatal and postnatal women | No relevant data to the review |
| Yousouf et al(2009) | Pelvic floor recovery in primiparous women at 1 month compared to 7 months after vaginal delivery | No relevant data (risk factors) to the review |