

Bilaga 2 Exkluderade studier och studier med hög risk för snedvridning

Förlossningsbristningar

Diagnostik samt erfarenheter av bemötande och information

Rapport nr 323

Appendix 2 Excluded studies and studies with high risk of bias

Table of contents

Excluded studies	page 2-17
Studies with high risk of bias	page 18

This list consists of articles not included in SBU's report. It has two parts:

Excluded studies

This part consists of articles considered relevant in terms of abstract, but the full-text articles were considered to be irrelevant to the research question and other inclusion criteria, after assessment.

Studies with high risk of bias

This part consists of articles that were relevant in terms of abstract and full-text, but after quality assessment considered to be studies with high risk of bias.

Excluded studies

Reference	Main reason for exclusion
ACOG Practice Bulletin No. 198 Summary: Prevention and Management of Obstetric Lacerations at Vaginal Delivery. <i>Obstet Gynecol.</i> 2018;132(3):795-7.	Not a relevant publication type (protocols, letters etc)
ACOG Practice Bulletin No. 198: Prevention and Management of Obstetric Lacerations at Vaginal Delivery. <i>Obstet Gynecol.</i> 2018;132(3):e87-e102.	Not a relevant publication type (protocols, letters etc)
Aigmuller T, Umek W, Elenskaia K, Frudinger A, Pfeifer J, Helmer H, et al. Guidelines for the management of third and fourth degree perineal tears after vaginal birth from the Austrian Urogynecology Working Group. <i>Int Urogynecol J.</i> 2013;24(4):553-8.	Not a relevant publication type (protocols, letters etc)
Ali-Masri H, Hassan S, Fosse E, Zimmo KM, Zimmo M, Ismail KMK, et al. Impact of electronic and blended learning programs for manual perineal support on incidence of obstetric anal sphincter injuries: a prospective interventional study. <i>BMC Med Educ.</i> 2018;18(1):258.	Not relevant intervention
Andrews V, Sultan AH, Thakar R, Jones PW. Risk factors for obstetric anal sphincter injury: a prospective study. <i>Birth.</i> 2006;33(2):117-22.	Not relevant outcome
Albrich SB, Laterza RM, Skala C, Salvatore S, Koelbl H, Naumann G. Impact of	Not relevant outcome
Alexander AA, Liu JB, Merton DA, Nagle DA. Fecal incontinence: transvaginal	Not relevant population
Prevention and Management of Obstetric Lacerations at Vaginal Delivery. <i>Obstetrics & Gynecology.</i> 2016;128(1):e1-e15.	Not a relevant publication type (protocols, letters etc)
Prevention and Management of Obstetric Lacerations at Vaginal Delivery. <i>Obstetrics & Gynecology.</i> 2018;132(3):e87-e102.	Not a relevant publication type (protocols, letters etc)
Antonakos CL, Miller JM, Sampsel CM. Indices for studying urinary incontinence and levator ani function in primiparous women. <i>J Clin Nurs.</i> 2003;12(4):554-61.	Not relevant outcome
Aydin S, Aydin CA. Evaluation of labor-related pelvic floor changes 3 months after delivery: a 3D transperineal ultrasound study. <i>Int Urogynecol J.</i> 2015;26(12):1827-33.	Not relevant outcome
Basu M, Smith D, Edwards R. Can the incidence of obstetric anal sphincter injury be reduced? The STOMP experience. <i>Eur J Obstet Gynecol Reprod Biol.</i> 2016;202:55-9.	Not relevant intervention
Belmonte-Montes C, Hagerman G, Vega-Yeppez PA, Hernandez-de-Anda E, Fonseca-Morales V. Anal sphincter injury after vaginal delivery in primiparous females. <i>Dis Colon Rectum.</i> 2001;44(9):1244-8.	Not relevant intervention
Berg A, Yuval D, Ivancovsky M, Zalcborg S, Dubani A, Benbassat J. Patient perception of involvement in medical care during labor and delivery. <i>Isr Med Assoc J.</i> 2001;3(5):352-6.	Not relevant population
Berger MB, Morgan DM, DeLancey JO. Levator ani defect scores and pelvic organ prolapse: is there a threshold effect? <i>Int Urogynecol J.</i> 2014;25(10):1375-9.	Not relevant outcome
Berggren V, Gottvall K, Isman E, Bergstrom S, Ekeus C. Infibulated women have an increased risk of anal sphincter tears at delivery: a population-based Swedish register study of 250 000 births. <i>Acta Obstet Gynecol Scand.</i> 2013;92(1):101-8.	Background article

Bick DE, Kettle C, Macdonald S, Thomas PW, Hills RK, Ismail KM. PErineal Assessment and Repair Longitudinal Study (PEARLS): protocol for a matched pair cluster trial. <i>BMC Pregnancy Childbirth</i> . 2010;10:10.	Not a relevant publication type (protocols, letters etc)
Bick DE, Kettle C, Macdonald SE, Thomas PW, Tohill S, Ismail KMK. A cluster randomised trial to enhance assessment and repair of birth associated perineal trauma: the PEARLS study. <i>Archives of disease in childhood: fetal and neonatal edition</i> . 2013;98.	Not a relevant publication type (protocols, letters etc)
Bidwell P, Thakar R, Sevdalis N, Hellyer A. The OASI care bundle - A quality improvement project to change provider behaviour and reduce perineal trauma in childbirth. <i>International journal for quality in health care</i> . 2017;29:54-5.	Not a relevant publication type (protocols, letters etc)
Blasi I, Fuchs I, D'Amico R, Vinci V, La Sala GB, Mazza V, et al. Intrapartum translabial three-dimensional ultrasound visualization of levator trauma. <i>Ultrasound Obstet Gynecol</i> . 2011;37(1):88-92.	Not relevant outcome
Borrman MJ, Davis D, Porteous A, Lim B. The effects of a severe perineal trauma prevention program in an Australian tertiary hospital: An observational study. <i>Women Birth</i> . 2019.	Not relevant intervention
Borycka-Kiciak K, Mlynczak M, Kiciak A, Pietrzak P, Dziki A. Non-invasive obstetric anal sphincter injury diagnostics using impedance spectroscopy. <i>Sci Rep</i> . 2019;9(1):7097.	Not relevant population
Brandon C, Jacobson JA, Low LK, Park L, DeLancey J, Miller J. Pubic bone injuries in primiparous women: magnetic resonance imaging in detection and differential diagnosis of structural injury. <i>Ultrasound Obstet Gynecol</i> . 2012;39(4):444-51.	Not relevant outcome
Branham V, Thomas J, Jaffe T, Crockett M, South M, Jamison M, et al. Levator ani abnormality 6 weeks after delivery persists at 6 months. <i>Am J Obstet Gynecol</i> . 2007;197(1):65.e1-6.	Not relevant outcome
Briscoe L, Lavender T, O'Brien E, Campbell M, McGowan L. A mixed methods study to explore women and clinicians' response to pain associated with suturing second degree perineal tears and episiotomies [PRAISE]. <i>Midwifery</i> . 2015;31(4):464-72.	Not relevant outcome
Brooks AK. A feminist analysis of women's experiences of perineal trauma in the immediate post-delivery period. <i>J Midwifery Womens Health</i> . 2000;45(4):355-6.	Not a relevant publication type (protocols, letters etc)
Brubaker L, Bradley CS, Handa VL, Richter HE, Visco A, Brown MB, et al. Anal sphincter laceration at vaginal delivery: is this event coded accurately? <i>Obstet Gynecol</i> . 2007;109(5):1141-5.	Not relevant outcome
Calderwood CS, Thurmond A, Holland A, Osmundsen B, Gregory WT. Comparing 3-Dimensional Ultrasound to 3-Dimensional Magnetic Resonance Imaging in the Detection of Levator Ani Defects. <i>Female Pelvic Med Reconstr Surg</i> . 2018;24(4):295-300.	Not relevant outcome
Campbell DM, Behan M, Donnelly VS, O'Herlihy C, O'Connell PR. Endosonographic assessment of postpartum anal sphincter injury using a 120 degree sector scanner. <i>Clin Radiol</i> . 1996;51(8):559-61.	Not relevant population
Cassado Garriga J, Pessarrodona Isern A, Espuna Pons M, Duran Retamal M, Felgueroso Fabrega A, Rodriguez Carballeira M, et al. Four-dimensional sonographic evaluation of avulsion of the levator ani according to delivery mode. <i>Ultrasound Obstet Gynecol</i> . 2011;38(6):701-6.	Not relevant intervention

Cassado Garriga J, Quintas Marques L, Pessarrodona Isern A, Lopez Quesada E, Rodriguez Carballeira M, Badia Carrasco A. Can 3D power Doppler identify levator ani vascularization at its pubic insertion? <i>Int Urogynecol J.</i> 2015;26(9):1327-32.	Not relevant population
Cassado-Garriga J, Wong V, Shek K, Dietz HP. Can we identify changes in fascial paravaginal supports after childbirth? <i>Aust N Z J Obstet Gynaecol.</i> 2015;55(1):70-5.	Not relevant intervention
Caudwell-Hall J, Kamisan Atan I, Guzman Rojas R, Langer S, Shek KL, Dietz HP. Atraumatic normal vaginal delivery: how many women get what they want? <i>Am J Obstet Gynecol.</i> 2018;219(4):379.e1-.e8.	Not relevant outcome
Chan SS, Cheung RY, Yiu KW, Lee LL, Chung TK. Effect of levator ani muscle injury on primiparous women during the first year after childbirth. <i>Int Urogynecol J.</i> 2014;25(10):1381-8.	Not relevant outcome
Chan SS, Cheung RY, Yiu KW, Lee LL, Chung TK. Antenatal pelvic floor biometry is related to levator ani muscle injury. <i>Ultrasound Obstet Gynecol.</i> 2016;48(4):520-5.	Not relevant population
Chiarelli P, Cockburn J. Postpartum perineal management and best practice. <i>Aust Coll Midwives Inc J.</i> 1999;12(1):14-8.	Not relevant study design
Chisholm P, Sellner A, Kilpatrick CC, Swaim LS, Orejuela FJ. Improving Documentation of Obstetric Anal Sphincter Injuries (OASIS) Using a Standardized Electronic Template at Two University-Affiliated Institutions. <i>South Med J.</i> 2019;112(3):185-9.	Not relevant outcome
Cockell SJ, Oates-Johnson T, Gilmour DT, Vallis TM, Turnbull GK. Postpartum flatal and Fecal Incontinence Quality-of-Life Scale: a disease- and population-specific measure. <i>Qual Health Res.</i> 2003;13(8):1132-44.	Not relevant outcome
Corton MM, McIntire DD, Twickler DM, Atnip S, Schaffer JI, Leveno KJ. Endoanal ultrasound for detection of sphincter defects following childbirth. <i>Int Urogynecol J.</i> 2013;24(4):627-35.	Not relevant intervention
Crookall R, Fowler G, Wood C, Slade P. A systematic mixed studies review of women's experiences of perineal trauma sustained during childbirth. <i>J Adv Nurs.</i> 2018.	Not relevant study design
Damon H, Henry L, Barth X, Mion F. Fecal incontinence in females with a past history of vaginal delivery: significance of anal sphincter defects detected by ultrasound. <i>Dis Colon Rectum.</i> 2002;45(11):1445-50; discussion 50-1.	Not relevant population
de Leeuw JW, Vierhout ME, Struijk PC, Auwerda HJ, Bac DJ, Wallenburg HC. Anal sphincter damage after vaginal delivery: relationship of anal endosonography and manometry to anorectal complaints. <i>Dis Colon Rectum.</i> 2002;45(8):1004-10.	Not relevant outcome
De Meutter L, A DvH, van der Woerd-Elting I, de Leeuw JW. Implementation of a perineal support programme for reduction of the incidence of obstetric anal sphincter injuries and the effect of non-compliance. <i>Eur J Obstet Gynecol Reprod Biol.</i> 2018;230:119-23.	Not relevant intervention
DeLancey JO, Kearney R, Chou Q, Speights S, Binno S. The appearance of levator ani muscle abnormalities in magnetic resonance images after vaginal delivery. <i>Obstet Gynecol.</i> 2003;101(1):46-53.	Not relevant intervention
Diaz MP, Steen M. PERINEAL WOUND CARE: EDUCATION AND TRAINING IN AUSTRALIA. <i>Aust Nurs Midwifery J.</i> 2017;24(8):41.	Background article

Dietz HP, Abbu A, Shek KL. The levator-urethra gap measurement: a more objective means of determining levator avulsion? <i>Ultrasound Obstet Gynecol.</i> 2008;32(7):941-5.	Not relevant population
Dietz HP, Hyland G, Hay-Smith J. The assessment of levator trauma: a comparison between palpation and 4D pelvic floor ultrasound. <i>Neurourol Urodyn.</i> 2006;25(5):424-7.	Not relevant population
Dietz HP, Jarvis SK, Vancaillie TG. The assessment of levator muscle strength: a validation of three ultrasound techniques. <i>Int Urogynecol J Pelvic Floor Dysfunct.</i> 2002;13(3):156-9; discussion 9.	Not relevant population
Dietz HP, Kirby A. Modelling the likelihood of levator avulsion in a urogynaecological population. <i>Aust N Z J Obstet Gynaecol.</i> 2010;50(3):268-72.	Not relevant population
Dietz HP, Lanzarone V. Levator trauma after vaginal delivery. <i>Obstet Gynecol.</i> 2005;106(4):707-12.	Not relevant outcome
Dietz HP, Moegni F, Shek KL. Diagnosis of levator avulsion injury: a comparison of three methods. <i>Ultrasound Obstet Gynecol.</i> 2012;40(6):693-8.	Not relevant population
Dietz HP, Pattillo Garnham A, Guzman Rojas R. Is it necessary to diagnose levator avulsion on pelvic floor muscle contraction? <i>Ultrasound Obstet Gynecol.</i> 2017;49(2):252-6.	Not relevant population
Dietz HP, Shek C. Validity and reproducibility of the digital detection of levator trauma. <i>Int Urogynecol J Pelvic Floor Dysfunct.</i> 2008;19(8):1097-101.	Not relevant population
Dietz HP, Shek KL. Levator defects can be detected by 2D translabial ultrasound. <i>Int Urogynecol J Pelvic Floor Dysfunct.</i> 2009;20(7):807-11.	Not relevant population
Dietz HP, Shek KL. Tomographic ultrasound imaging of the pelvic floor: which levels matter most? <i>Ultrasound Obstet Gynecol.</i> 2009;33(6):698-703.	Not relevant outcome
Draper J, Newell R. A discussion of some of the literature relating to history, repair and consequences of perineal trauma. <i>Midwifery.</i> 1996;12(3):140-5.	Not relevant study design
Dudley L, Kettle C, Waterfield J, Ismail KM. Perineal resuturing versus expectant management following vaginal delivery complicated by a dehisced wound (PREVIEW): a nested qualitative study. <i>BMJ Open.</i> 2017;7(2):e013008.	Not relevant outcome
Dymond J. Routine post-natal perineal inspection by midwives. <i>J Clin Nurs.</i> 1999;8(2):225-6.	Not relevant study design
Edwards M, Kobernik EK, Suresh S, Swenson CW. Do women with prior obstetrical anal sphincter injury regret having a subsequent vaginal delivery? <i>BMC Pregnancy Childbirth.</i> 2019;19(1):225.	Not relevant outcome
Eisenberg V, Vernikovskiy G, Lantsberg D, Bitman G, Alcalay M. What is the best cut-off value for the levator-urethra gap measurement in the diagnosis of avulsion defects? <i>Neurourology and urodynamics Conference: 47th annual meeting of the international continence society, ICS 2017 Italy.</i> 2017;36:S289-S90.	Not a relevant publication type (protocols, letters etc)
Eisenberg VH, Valsky DV, Yagel S. Transperineal ultrasound assessment of the anal sphincter after obstetric anal sphincter injury (OASI). <i>Ultrasound Obstet Gynecol.</i> 2019;53(2):158-65.	Background article

Elliot V, Yaskina M, Schulz J. Obstetrical Anal Sphincter Injuries and the Need for Adequate Care. <i>Female Pelvic Med Reconstr Surg</i> . 2019;25(2):109-12.	Not relevant study design
Eogan M, O'Herlihy C. Diagnosis and management of obstetric anal sphincter injury. <i>Curr Opin Obstet Gynecol</i> . 2006;18(2):141-6.	Not relevant study design
Evans E, Falivene C, Henry A, Briffa K, Thompson J. What is the total impact of an obstetric anal sphincter injury at an Australian tertiary women's hospital? A retrospective cohort investigation of women affected between 2009 and 2014. <i>Australian & New Zealand Continence Journal</i> . 2017;23(4):100-.	Not relevant outcome
Fairchild PS, Low LK, Kowalk KM, Kolenic GE, DeLancey JO, Fenner DE. Defining "normal recovery" of pelvic floor function and appearance in a high-risk vaginal delivery cohort. <i>Int Urogynecol J</i> . 2020;31(3):495-504.	Not relevant outcome
Falkert A, Endress E, Weigl M, Seelbach-Gobel B. Three-dimensional ultrasound of the pelvic floor 2 days after first delivery: influence of constitutional and obstetric factors. <i>Ultrasound Obstet Gynecol</i> . 2010;35(5):583-8.	Not relevant outcome
Falkert A, Willmann A, Endress E, Meint P, Seelbach-Gobel B. Three-dimensional ultrasound of pelvic floor: is there a correlation with delivery mode and persisting pelvic floor disorders 18-24 months after first delivery? <i>Ultrasound Obstet Gynecol</i> . 2013;41(2):204-9.	Not relevant outcome
Faltin DL, Boulvain M, Stan C, Epiney M, Weil A, Irion O. Intraobserver and interobserver agreement in the diagnosis of anal sphincter tears by postpartum endosonography. <i>Ultrasound Obstet Gynecol</i> . 2003;21(4):375-7.	Not relevant outcome
Fernando RJ, Sultan AH, Radley S, Jones PW, Johanson RB. Management of obstetric anal sphincter injury: a systematic review & national practice survey. <i>BMC Health Serv Res</i> . 2002;2(1):9.	Not relevant study design
Fornell EU, Berg G, Matthiesen L. [Diagnosis of anal sphincter injuries caused by delivery. Intra-anal ultrasound is a well-functioning method]. <i>Lakartidningen</i> . 1996;93(22):2148-9.	Not a relevant publication type (protocols, letters etc)
Fowler GE, Adams EJ, Bolderson J, Hosker G, Lowe D, Richmond DH, et al. Liverpool Ultrasound Pictorial Chart: the development of a new method of documenting anal sphincter injury diagnosed by endoanal ultrasound. <i>Bjog</i> . 2008;115(6):767-72.	Not relevant outcome
Fretheim A, Odgaard-Jensen J, Rottingen JA, Reinart LM, Vangen S, Tanbo T. The impact of an intervention programme employing a hands-on technique to reduce the incidence of anal sphincter tears: interrupted time-series reanalysis. <i>BMJ Open</i> . 2013;3(10):e003355.	Not relevant intervention
Frost J, Gundry R, Young H, Naguib A. Multidisciplinary training in perineal care during labor and delivery for the reduction of anal sphincter injuries. <i>Int J Gynaecol Obstet</i> . 2016;134(2):177-80.	Not relevant intervention
Frudinger A, Ballon M, Taylor SA, Halligan S. The natural history of clinically unrecognized anal sphincter tears over 10 years after first vaginal delivery. <i>Obstet Gynecol</i> . 2008;111(5):1058-64.	Not relevant population
Frudinger A, Bartram CI, Kamm MA. Transvaginal versus anal endosonography for detecting damage to the anal sphincter. <i>AJR Am J Roentgenol</i> . 1997;168(6):1435-8.	Not relevant population

Frudinger A, Bartram CI, Spencer JA, Kamm MA. Perineal examination as a predictor of underlying external anal sphincter damage. <i>Br J Obstet Gynaecol.</i> 1997;104(9):1009-13.	Not relevant population
Frudinger A, Halligan S, Bartram CI, Spencer J, Kamm MA, Winter R. Assessment of the predictive value of a bowel symptom questionnaire in identifying perianal and anal sphincter trauma after vaginal delivery. <i>Dis Colon Rectum.</i> 2003;46(6):742-7.	Not relevant population
Fynes MM, Behan M, O'Herlihy C, O'Connell PR. Anal vector volume analysis complements endoanal ultrasonographic assessment of postpartum anal sphincter injury. <i>Br J Surg.</i> 2000;87(9):1209-14.	Not relevant population
Gachon B, Nordez A, Pierre F, Fradet L, Fritel X, Desseuve D. In vivo assessment of the levator ani muscles using shear wave elastography: a feasibility study in women. <i>Int Urogynecol J.</i> 2019;30(7):1179-86.	Not relevant intervention
Garcia-Mejido JA, de la Fuente-Vaquero P, Aquisé-Pino A, Castro-Portillo L, Fernandez-Palacin A, Sainz-Bueno JA. Can we predict levator ani muscle avulsion in instrumental deliveries through intrapartum transperineal ultrasound? <i>J Matern Fetal Neonatal Med.</i> 2019;32(19):3137-44.	Not relevant outcome
García-Mejido JA, Sainz JA. Type of levator ani muscle avulsion as predictor for the disappearance of avulsion. <i>Neurourol Urodyn.</i> 2020.	Not relevant outcome
Geller EJ, Robinson BL, Matthews CA, Celauro KP, Dunivan GC, Crane AK, et al. Perineal body length as a risk factor for ultrasound-diagnosed anal sphincter tear at first delivery. <i>Int Urogynecol J.</i> 2014;25(5):631-6.	Not relevant outcome
Gilboa Y, Frenkel TI, Schlesinger Y, Rousseau S, Hamiel D, Achiron R, et al. Visual biofeedback using transperineal ultrasound in second stage of labor. <i>Ultrasound Obstet Gynecol.</i> 2018;52(1):91-6.	Not relevant population
Gomez-Thompson A. A literature review to explore women's lived experiences of pregnancy after sustaining a third- or fourth-degree perineal tear in a previous birth. <i>MIDIRS Midwifery Digest.</i> 2016;26(3):303-9.	Not relevant study design
Gomme C. Assessing second degree tears: what size is small?...the bottom line: care of the perineum must be improved (<i>Br J Midwifery</i> 8(10): 609-14). <i>British Journal of Midwifery.</i> 2001;9(3):172-.	Not a relevant publication type (protocols, letters etc)
Gomme C, Yiannouzis K, Ullman R. Developing a tool to assess perineal trauma. <i>British Journal of Midwifery.</i> 2001;9(9):538-44.	Not relevant outcome
Grasso RF, Piciucchi S, Quattrocchi CC, Beomonte Zobel B. Re: Three-dimensional transperineal ultrasonography for evaluation of the anal sphincter complex: Another dimension in understanding peripartum sphincter trauma. <i>Ultrasound Obstet Gynecol.</i> 2006;28(3):353-4; author reply 4.	Not a relevant publication type (protocols, letters etc)
Gregory WT, Lou JS, Stuyvesant A, Clark AL. Quantitative electromyography of the anal sphincter after uncomplicated vaginal delivery. <i>Obstet Gynecol.</i> 2004;104(2):327-35.	Not relevant population
Guedea MA, Zambrano JL, Fons JB, Viana LJ, Linaje BO, Milio JA. Alteration of anal sphincter function in patients with levator avulsion: observational study. <i>Int Urogynecol J.</i> 2015;26(7):985-90.	Not relevant outcome
Guzman Rojas R, Wong V, Shek KL, Dietz HP. Impact of levator trauma on pelvic floor muscle function. <i>Int Urogynecol J.</i> 2014;25(3):375-80.	Not relevant outcome

Guzman Rojas RA, Shek KL, Langer SM, Dietz HP. Prevalence of anal sphincter injury in primiparous women. <i>Ultrasound Obstet Gynecol.</i> 2013;42(4):461-6.	Not relevant population
Halle TK, Staer-Jensen J, Hilde G, Bø K, Ellström Engh M, Siafarikas F. Change in prevalence of major levator ani muscle defects from six weeks to one year postpartum, and maternal and obstetric risk factors: a longitudinal ultrasound study. <i>Acta Obstet Gynecol Scand.</i> 2020.	Not relevant outcome
Halle TKT, Staer-Jensen J, Bo K, Engh ME, Siafarikas F. 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. <i>Neurourology and urodynamics.</i> 2017;36:S121-S2.	Not a relevant publication type (protocols, letters etc)
Harvey MA, Pierce M, Alter JE, Chou Q, Diamond P, Epp A, et al. Obstetrical Anal Sphincter Injuries (OASIS): Prevention, Recognition, and Repair. <i>J Obstet Gynaecol Can.</i> 2015;37(12):1131-48.	Not relevant study design
Hayward J, McKenzie HA, Alexander CM. A service evaluation of a physiotherapy led clinic for patients with obstetric anal sphincter injuries (OASIS). <i>Journal of Pelvic, Obstetric & Gynaecological Physiotherapy.</i> 2018(122):71-2.	Not a relevant publication type (protocols, letters etc)
He S, Jiang H, Qian X, Garner P. Women's experience of episiotomy: a qualitative study from China. <i>BMJ Open.</i> 2020;10(7):e033354.	Not relevant outcome
Hubka P, Svabik K, Masata J, Martan A. Pilot study comparing tolerance of transperineal and endoanal ultrasound examination of anal sphincter. <i>Ceska Gynekol.</i> 2019;84(2):111-4.	Not in the specified languages
Ismail KM, Kettle C, Macdonald SE, Tohill S, Thomas PW, Bick D. Perineal Assessment and Repair Longitudinal Study (PEARLS): a matched-pair cluster randomized trial. <i>BMC Med.</i> 2013;11:209.	Not relevant outcome
Isrctn, Bidwell P, Hellyer A. The OASI Care Bundle: a multi-centre quality improvement project to reduce the incidence of obstetric anal sphincter injuries sustained in women who give birth vaginally in sixteen UK maternity units. http://www.isrctn.com/isrctn12143325 . 2017.	Not a relevant publication type (protocols, letters etc)
Jango H, Westergaard HB, Kjaerbye-Thygesen A, Langhoff-Roos J, Lauenborg J. The incidence of obstetric anal sphincter injury depends on both correct diagnosis and preventive strategies. <i>Acta Obstet Gynecol Scand.</i> 2019;98(12):1633-4.	Not a relevant publication type (protocols, letters etc)
Jango H, Westergaard HB, Kjaerbye-Thygesen A, Langhoff-Roos J, Lauenborg J. Changing incidence of obstetric anal sphincter injuries-A result of formal prevention programs? <i>Acta Obstet Gynecol Scand.</i> 2019;98(11):1455-63.	Not relevant intervention
Jansson MH, Nilsson K, Franzen K. Development and validation of a protocol for documentation of obstetric perineal lacerations. <i>Int Urogynecol J.</i> 2019;30(12):2069-76.	Not relevant outcome
Jenkins E, Markham C, Ryder I, Kettle C. Labial trauma post birth: A delphi study of classification and suturing requirements. <i>Midwifery.</i> 2019;71:49-55.	Not relevant intervention
Johansson C, Finnbogadottir H. First-time mothers' satisfaction with their birth experience - a cross-sectional study. <i>Midwifery.</i> 2019;79:102540.	Not relevant study design

Kearney R, Miller JM, Delancey JO. Interrater reliability and physical examination of the pubovisceral portion of the levator ani muscle, validity comparisons using MR imaging. <i>Neurourol Urodyn.</i> 2006;25(1):50-4.	Not relevant population
Kimmich N. Improving birth attendance by prevention and correct diagnosis of birth trauma. <i>Acta Obstet Gynecol Scand.</i> 2019.	Not a relevant publication type (protocols, letters etc)
Kimmich N, Birri J, Zimmermann R, Kreft M. Prediction of levator ani muscle avulsion by genital tears after vaginal birth-a prospective observational cohort study. <i>Int Urogynecol J.</i> 2020.	Not relevant outcome
Kirss J, Jr., Huhtinen H, Niskanen E, Ruohonen J, Kallio-Packalen M, Victorzon S, et al. Comparison of 3D endoanal ultrasound and external phased array magnetic resonance imaging in the diagnosis of obstetric anal sphincter injuries. <i>Eur Radiol.</i> 2019;29(10):5717-22.	Not relevant outcome
Kirss J, Pinta T, Bockelman C, Victorzon M. Factors predicting a failed primary repair of obstetric anal sphincter injury. <i>Acta Obstet Gynecol Scand.</i> 2016;95(9):1063-9.	Not relevant population
Knight HE, van der Meulen JH, Gurol-Urganci I, Smith GC, Kiran A, Thornton S, et al. Birth "Out-of-Hours": An Evaluation of Obstetric Practice and Outcome According to the Presence of Senior Obstetricians on the Labour Ward. <i>PLoS Med.</i> 2016;13(4):e1002000.	Not relevant population
Koury H, Corral J, Bastow BD, Sheeder J, Muffly TM. A 3-Dimensional Anatomical Education Model in Postpartum Perineal Laceration Care: A Pre-Post Intervention Study. <i>Female Pelvic Med Reconstr Surg.</i> 2019;25(2):e23-e7.	Not relevant study design
Laine K, Skjeldestad FE, Sandvik L, Staff AC. Incidence of obstetric anal sphincter injuries after training to protect the perineum: cohort study. <i>BMJ Open.</i> 2012;2(5).	Not relevant intervention
Larkin V. An exploration of midwives' experiences and practice in relation to their assessment of maternal postnatal genital tract health. <i>Midwifery.</i> 2014;30(1):72-81.	Not relevant population
Leenskjoeld S, Hoj L, Pirhonen J. Manual protection of the perineum reduces the risk of obstetric anal sphincter ruptures. <i>Dan Med J.</i> 2015;62(5).	Not relevant intervention
Leombroni M, Buca D, Liberati M, Falo E, Rizzo G, Khalil A, et al. Post-partum pelvic floor dysfunction assessed on 3D rotational ultrasound: a prospective study on women with first- and second-degree perineal tears and episiotomy. <i>J Matern Fetal Neonatal Med.</i> 2019:1-11.	Not relevant population
Levin G, Meyer R, Rottenstreich A. Reducing birth trauma programs - Diagnosis of anal sphincter injuries should be improved. <i>Acta Obstet Gynecol Scand.</i> 2019.	Not a relevant publication type (protocols, letters etc)
Lockhart ME, Fielding JR, Richter HE, Brubaker L, Salomon CG, Ye W, et al. Reproducibility of dynamic MR imaging pelvic measurements: a multi-institutional study. <i>Radiology.</i> 2008;249(2):534-40.	Not relevant outcome
Luo Y, Zhou M, Ying T, Shui W, Dou C. Translabial Ultrasound Combined With Magnetic Resonance Imaging Assessing the Distensibility of Levator Ani Muscle With Unilateral High-Grade Tears. <i>Female Pelvic Med Reconstr Surg.</i> 2019.	Not relevant population
Mackenzie R. Improving continence service standards within midwifery. <i>Br J Nurs.</i> 2002;11(18):1205-6, 8, 10-1.	Not a relevant publication type (protocols, letters etc)

Mahmud A, Kettle C, Bick D, Rowley C, Rathod T, Belcher J, et al. The development and validation of an internet-based training package for the management of perineal trauma following childbirth: MaternityPEARLS. <i>Postgrad Med J.</i> 2013;89(1053):382-9.	Not relevant outcome
Mahmud A, Kettle C, Macdonald SE, Tohill S, Thomas PW, Bick D, et al. Perineal assessment and repair longitudinal study (PEARLS): a cluster randomised trial. <i>BJOG.</i> 2013;120(9):e4-.	Not a relevant publication type (protocols, letters etc)
Marko EK, Fausett MB, Deering S, Staat BC, Stormes S, Freund E, et al. Reducing Perineal Lacerations Through Team-Based Simulation. <i>Simul Healthc.</i> 2019;14(3):182-7.	Not relevant intervention
Martinez Hernandez Magro P, Villanueva Saenz E, Jaime Zavala M, Sandoval Munro RD, Rocha Ramirez JL. Endoanal sonography in assessment of fecal incontinence following obstetric trauma. <i>Ultrasound Obstet Gynecol.</i> 2003;22(6):616-21.	Not relevant population
Maslovitz S, Jaffa A, Levin I, Almog B, Lessing JB, Wolman I. The clinical significance of postpartum transperineal ultrasound of the anal sphincter. <i>Eur J Obstet Gynecol Reprod Biol.</i> 2007;134(1):115-9.	Not relevant population
Masslo K, Mollers M, de Murcia KO, Klockenbusch W, Schmitz R. New Method for Assessment of Levator Avulsion Injury: A Comparative Elastography Study. <i>J Ultrasound Med.</i> 2019;38(5):1301-7.	Not relevant outcome
McCandlish R. Perineal trauma: prevention and treatment. <i>J Midwifery Womens Health.</i> 2001;46(6):396-401.	Not relevant study design
Metcalfe A. Improving assessment of perineal tears: the Peri-Rule. <i>British Journal of Midwifery.</i> 2004;12(10):618-20.	Not a relevant publication type (protocols, letters etc)
Metcalfe A, Tohill S, Williams A, Haldon V, Brown L, Henry L. A pragmatic tool for the measurement of perineal tears. <i>British Journal of Midwifery.</i> 2002;10(7):412-7.	Not relevant outcome
Miller JM, Brandon C, Jacobson JA, Low LK, Zielinski R, Ashton-Miller J, et al. MRI findings in patients considered high risk for pelvic floor injury studied serially after vaginal childbirth. <i>AJR Am J Roentgenol.</i> 2010;195(3):786-91.	Not relevant population
Miller JM, Low LK, Zielinski R, Smith AR, DeLancey JO, Brandon C. Evaluating maternal recovery from labor and delivery: bone and levator ani injuries. <i>Am J Obstet Gynecol.</i> 2015;213(2):188.e1-.e11.	Not relevant outcome
Mizrachi Y, Leytes S, Levy M, Hiaev Z, Ginath S, Bar J, et al. Does midwife experience affect the rate of severe perineal tears? <i>Birth.</i> 2017;44(2):161-6.	Not relevant intervention
Mohiudin H, Ali S, Pisal PN, Villar R. Implementation of the RCOG guidelines for prevention of obstetric anal sphincter injuries (OASIS) at two London Hospitals: A time series analysis. <i>Eur J Obstet Gynecol Reprod Biol.</i> 2018;224:89-92.	Not relevant intervention
Moxey JM, Jones LL. A qualitative study exploring how Somali women exposed to female genital mutilation experience and perceive antenatal and intrapartum care in England. <i>BMJ Open.</i> 2016;6(1):e009846.	Not relevant outcome
Murad-Regadas SM, Fernandes GO, Regadas FS, Rodrigues LV, Pereira Jde J, Dealcanfreitas ID, et al. Assessment of pubovisceral muscle defects and levator hiatal dimensions in women with faecal incontinence after vaginal delivery: is there a correlation with severity of symptoms? <i>Colorectal Dis.</i> 2014;16(12):1010-8.	Not relevant population

Naidu M, Sultan AH, Thakar R. Reducing obstetric anal sphincter injuries using perineal support: our preliminary experience. <i>Int Urogynecol J</i> . 2017;28(3):381-9.	Not relevant intervention
Nct. Diagnosing Perineal Tears, Does Different Assessment Methods Affect the Midwife's Clinical Judgement of Perineal Tears? https://clinicaltrials.gov/show/NCT01278979 . 2011.	Not a relevant publication type (protocols, letters etc)
Nct. Prospective Evaluation of Perineal Ultrasound in Thr Delivery Room to Improve the Diagnosis of OASIS. https://clinicaltrials.gov/show/NCT02615236 . 2015.	Not a relevant publication type (protocols, letters etc)
Nct. One Plus One Equals Two, Will That do? https://clinicaltrials.gov/show/NCT03770962 . 2018.	Not a relevant publication type (protocols, letters etc)
Neilson JP. Evidence-based intrapartum care: evidence from the Cochrane library. <i>Int J Gynaecol Obstet</i> . 1998;63:S97-102.	Background article
O'Kelly SM, Moore ZE. Antenatal maternal education for improving postnatal perineal healing for women who have birthed in a hospital setting. <i>Cochrane Database Syst Rev</i> . 2017;12:Cd012258.	Not relevant population
Oberwalder M, Thaler K, Baig MK, Dinnewitzer A, Efron J, Weiss EG, et al. Anal ultrasound and endosonographic measurement of perineal body thickness: a new evaluation for fecal incontinence in females. <i>Surg Endosc</i> . 2004;18(4):650-4.	Not a relevant publication type (protocols, letters etc)
Odofin F. Patient satisfaction survey of an innovative physiotherapy-led obstetric anal sphincter injury group. <i>Journal of Pelvic, Obstetric & Gynaecological Physiotherapy</i> . 2017(120):68-9.	Not relevant study design
Oom DM, West RL, Schouten WR, Steensma AB. Detection of anal sphincter defects in female patients with fecal incontinence: a comparison of 3-dimensional transperineal ultrasound and 2-dimensional endoanal ultrasound. <i>Dis Colon Rectum</i> . 2012;55(6):646-52.	Not relevant population
Orno AK, Marsal K, Herbst A. Ultrasonographic anatomy of perineal structures during pregnancy and immediately following obstetric injury. <i>Ultrasound Obstet Gynecol</i> . 2008;32(4):527-34.	Not relevant outcome
Oyama IA, Aaronoff MC, Burlingame JM. Obstetric anal sphincter injury repair workshop for residents. <i>Hawaii Med J</i> . 2009;68(6):133-5.	Not relevant outcome
Ozyurt S, Aksoy H, Gedikbasi A, Yildirim G, Aksoy U, Acmaz G, et al. Screening occult anal sphincter injuries in primigravid women after vaginal delivery with transperineal use of vaginal probe: a prospective, randomized controlled trial. <i>Arch Gynecol Obstet</i> . 2015;292(4):853-9.	Not relevant population
Page L, McCourt C, Beake S, Vail A, Hewison J. Clinical interventions and outcomes of One-to-One midwifery practice. <i>J Public Health Med</i> . 1999;21(3):243-8.	Not relevant intervention
Pattillo Garnham A, Guzman Rojas R, Shek KL, Dietz HP. Predicting levator avulsion from ICS POP-Q findings. <i>Int Urogynecol J</i> . 2017;28(6):907-11.	Not relevant population
Perston Y. Help is at hand for women with anal sphincter injuries. <i>Gastrointestinal Nursing</i> . 2017;15(10):14-6.	Not a relevant publication type (protocols, letters etc)
Phipps H, Charlton S, Dietz HP. Can antenatal education influence how women push in labour? <i>Aust N Z J Obstet Gynaecol</i> . 2009;49(3):274-8.	Not relevant intervention

Pihl S, Blomberg M, Uustal E. Internal anal sphincter injury in the immediate postpartum period; Prevalence, risk factors and diagnostic methods in the Swedish perineal laceration registry. <i>Eur J Obstet Gynecol Reprod Biol.</i> 2020;245:1-6.	Not relevant outcome
Pihl S, Hjertberg L, Uustal E, Blomberg M. Short anovaginal distance is associated with obstetric anal sphincter injury. <i>European Journal of Obstetrics & Gynecology & Reproductive Biology.</i> 2019;234:e12-e3.	Not a relevant publication type (protocols, letters etc)
Pinta T, Kylanpaa-Back ML, Salmi T, Jarvinen HJ, Luukkonen P. Delayed sphincter repair for obstetric ruptures: analysis of failure. <i>Colorectal Dis.</i> 2003;5(1):73-8.	Not relevant population
Pirhonen J, Samuelsson E, Pirhonen T, Odeback A, Gissler M. Interventional program to reduce both the incidence of anal sphincter tears and rate of Caesarean sections. <i>Eur J Obstet Gynecol Reprod Biol.</i> 2018;223:56-9.	Not relevant intervention
Premkumar G. Perineal trauma: reducing associated postnatal maternal morbidity. <i>RCM Midwives.</i> 2005;8(1):30-2.	Background article
Pretlove SJ, Thompson PJ, Guest P, Tooze-Hobson P, Radley S. Detecting anal sphincter injury: acceptability and feasibility of endoanal ultrasound immediately postpartum. <i>Ultrasound Obstet Gynecol.</i> 2003;22(2):215-7.	Not a relevant publication type (protocols, letters etc)
Pronk P, van Leeuwen E, Albicher C, Dermout SM, Doornbos JP, Engel AF. Temporal endosonographic evaluation of anal sphincter integrity after primary repair for obstetric ruptures: a case for specific training of obstetricians. <i>Colorectal Dis.</i> 2010;12(7):e140-4.	Not relevant population
Puri R, Leppert P. Management of perineal and vaginal injuries during childbirth. <i>Wounds International.</i> 2011;2(2):13-5.	Background article
Rahman N, Vinayakarao L, Pathak S, Minden D, Melson L, Vitue E, et al. Evaluation of training programme uptake in an attempt to reduce obstetric anal sphincter injuries: the SUPPORT programme. <i>Int Urogynecol J.</i> 2017;28(3):403-7.	Not relevant outcome
Ramage L, Yen C, Qiu S, Simillis C, Kontovounisios C, Tan E, et al. Does a missed obstetric anal sphincter injury at time of delivery affect short-term functional outcome? <i>Ann R Coll Surg Engl.</i> 2018;100(1):26-32.	Not relevant outcome
Ridley N. Supporting women with perineal trauma. <i>Pract Midwife.</i> 2017;20(2):8-10.	Background article
Roche B, Deleaval J, Fransioli A, Marti MC. Comparison of transanal and external perineal ultrasonography. <i>Eur Radiol.</i> 2001;11(7):1165-70.	Not relevant intervention
Roos AM, Abdool Z, Sultan AH, Thakar R. The diagnostic accuracy of endovaginal and transperineal ultrasound for detecting anal sphincter defects: The PREDICT study. <i>Clin Radiol.</i> 2011;66(7):597-604.	Not relevant population
Roos AM, Thakar R, Sultan AH. Outcome of primary repair of obstetric anal sphincter injuries (OASIS): does the grade of tear matter? <i>Ultrasound Obstet Gynecol.</i> 2010;36(3):368-74.	Not relevant population
Ros C, Martinez-Franco E, Wozniak MM, Cassado J, Santoro GA, Elias N, et al. Postpartum two- and three-dimensional ultrasound evaluation of anal sphincter complex in women with obstetric anal sphincter injury. <i>Ultrasound Obstet Gynecol.</i> 2017;49(4):508-14.	Not relevant population

Rostaminia G, Peck JD, Van Delft K, Thakar R, Sultan A, Shobeiri SA. New Measures for Predicting Birth-Related Pelvic Floor Trauma. <i>Female Pelvic Med Reconstr Surg.</i> 2016;22(5):292-6.	Not relevant outcome
Sakse A, Secher NJ, Ottesen M, Starck M. Defects on endoanal ultrasound and anal incontinence after primary repair of fourth-degree anal sphincter rupture: a study of the anal sphincter complex and puborectal muscle. <i>Ultrasound Obstet Gynecol.</i> 2009;34(6):693-8.	Not relevant population
Samarasekera DN, Wright Y, Lowndes RH, Stanley KP, Preston P, Speakman CT. Comparison of vector symmetry index and endoanal ultrasonography in the diagnosis of anal sphincter disruption. <i>Tech Coloproctol.</i> 2008;12(3):211-5.	Not relevant population
Savoie-Collet C, Savoie G, Koning E, Sassi A, Leroi AM, Dacher JN. Endosonography in the evaluation of anal function after primary repair of a third-degree obstetric tear. <i>Scand J Gastroenterol.</i> 2003;38(11):1149-53.	Not relevant outcome
Sentovich SM, Blatchford GJ, Rivela LJ, Lin K, Thorson AG, Christensen MA. Diagnosing anal sphincter injury with transanal ultrasound and manometry. <i>Dis Colon Rectum.</i> 1997;40(12):1430-4.	Not relevant population
Sentovich SM, Wong WD, Blatchford GJ. Accuracy and reliability of transanal ultrasound for anterior anal sphincter injury. <i>Dis Colon Rectum.</i> 1998;41(8):1000-4.	Not relevant population
Shek KL, Atan IK, Dietz HP. Can Anal Sphincter Defects Be Identified by Palpation? <i>Female Pelvic Med Reconstr Surg.</i> 2016;22(6):472-5.	Not relevant population
Shek KL, Chantarasorn V, Langer S, Dietz HP. Does levator trauma 'heal'? <i>Ultrasound in Obstetrics & Gynecology.</i> 2012;40(5):570-5.	Not relevant outcome
Shek KL, Guzman-Rojas R, Dietz HP. Residual defects of the external anal sphincter following primary repair: an observational study using transperineal ultrasound. <i>Ultrasound Obstet Gynecol.</i> 2014;44(6):704-9.	Not relevant population
Shobeiri SA, Nolan TE, Yordan-Jovet R, Echols KT, Chesson RR. Digital examination compared to trans-perineal ultrasound for the evaluation of anal sphincter repair. <i>Int J Gynaecol Obstet.</i> 2002;78(1):31-6.	Not relevant population
Siafarikas F, Staer-Jensen J, Hilde G, Bo K, Ellstrom Engh M. The levator ani muscle during pregnancy and major levator ani muscle defects diagnosed postpartum: a three- and four-dimensional transperineal ultrasound study. <i>Bjog.</i> 2015;122(8):1083-91.	Not relevant outcome
Silva dos Santos RC, Gonzalez Riesco ML. Implementation of care practices to prevent and repair perineal trauma in childbirth. <i>Revista Gaucha de Enfermagem.</i> 2016;37:1-11.	Not relevant outcome
Sioutis D, Thakar R, Sultan AH. Overdiagnosis and rising rate of obstetric anal sphincter injuries (OASIS): time for reappraisal. <i>Ultrasound Obstet Gynecol.</i> 2017;50(5):642-7.	Not relevant population
Spiby H, Bratten C, Deane L, Wright G. Incorporating evidence into practice to improve perineal care. <i>Foundation of Nursing Studies: Developing Practice Improving Care Dissemination Series.</i> 2005;3(2):1-4.	Not a relevant publication type (protocols, letters etc)
Staer-Jensen J, Siafarikas F, Hilde G, Benth JS, Bo K, Engh ME. Postpartum recovery of levator hiatus and bladder neck mobility in relation to pregnancy. <i>Obstet Gynecol.</i> 2015;125(3):531-9.	Not relevant outcome

Starck M, Bohe M, Valentin L. Results of endosonographic imaging of the anal sphincter 2-7 days after primary repair of third- or fourth-degree obstetric sphincter tears. <i>Ultrasound Obstet Gynecol.</i> 2003;22(6):609-15.	Not relevant outcome
Stecher AM, Yeung J, Crisp CC, Pauls RN. Awareness Regarding Perineal Protection, Obstetric Anal Sphincter Injury, and Episiotomy Among Obstetrics and Gynecology Residents; Effects of an Educational Workshop. <i>Female Pelvic Med Reconstr Surg.</i> 2018;24(3):241-6.	Not relevant population
Stedenfeldt M, Oian P, Gissler M, Blix E, Pirhonen J. Risk factors for obstetric anal sphincter injury after a successful multicentre interventional programme. <i>Bjog.</i> 2014;121(1):83-91.	Not relevant population
Steen M. Care and consequences of perineal trauma. <i>British Journal of Midwifery.</i> 2010;18(11):710-5.	Not relevant outcome
Steen M. Risk, recognition and repair of perineal trauma. <i>British Journal of Midwifery.</i> 2012;20(11):768-72.	Background article
Steen M, Cooper K. A tool for assessing perineal trauma. <i>J Wound Care.</i> 1997;6(9):432-6.	Background article
Steen M, Diaz M. Perineal trauma: A women's health and wellbeing issue. <i>British Journal of Midwifery.</i> 2018;26(9):574-84.	Not relevant intervention
Steensma A, Speksnijder L, de Vos D. 3D/4D ultrasound findings compared to pelvic floor symptoms in women diagnosed with obstetric anal sphincter tear. <i>European Journal of Obstetrics & Gynecology & Reproductive Biology.</i> 2017:203-.	Background article
Stevenson L. Guideline for the systematic assessment of perineal trauma. <i>British Journal of Midwifery.</i> 2010;18(8):498-501.	Not a relevant publication type (protocols, letters etc)
Stolberg J. Enhancing postnatal perineal care: Part 2. <i>Pract Midwife.</i> 2012;15(7):34-6.	Background article
Stolberg J. Enhancing postnatal perineal care. <i>Pract Midwife.</i> 2012;15(6):26-8.	Background article
Stuart A, Ignell C, Orno AK. Comparison of transperineal and endoanal ultrasound in detecting residual obstetric anal sphincter injury. <i>Acta Obstet Gynecol Scand.</i> 2019;98(12):1624-31.	Background article
Stær-Jensen J, Siafarikas F, Hilde G, Benth JŠ, Bø K, Engh ME. Postpartum recovery of levator hiatus and bladder neck mobility in relation to pregnancy. <i>Obstetrics and gynecology.</i> 2015;125(3):531-9.	Not relevant population
Subramaniam N, Robledo KP, Dietz HP. Anal sphincter imaging: better done at rest or on pelvic floor muscle contraction? <i>Int Urogynecol J.</i> 2019.	Not relevant population
Sudol-Szopinnska I, Radkiewicz J, Szopinski T, Panorska AK, Jakubowski W, Kawka J. Postpartum endoanal ultrasound findings in primiparous women after vaginal delivery. <i>Acta Radiol.</i> 2010;51(7):819-24.	Not relevant outcome
Sudoł-Szopińska I, Szczepkowski M, Jakubowski W. Anal sphincters defects-verification of the anal ultrasound diagnosis in 'bimanual' examination. <i>Eur J Ultrasound.</i> 2001;13(1):25-9.	Not relevant population
Sultan AH, Thakar R. Diagnosis of anal sphincter tears to prevent fecal incontinence: a randomized controlled trial. <i>Obstet Gynecol.</i> 2005;106(5):1108-9; author reply 9.	Not a relevant publication type (protocols, letters etc)

Sveinsdottir E, Gottfredsdottir H, Vernhardsdottir AS, Tryggvadottir GB, Geirsson RT. Effects of an intervention program for reducing severe perineal trauma during the second stage of labor. *Birth*. 2019;46(2):371-8. Not relevant intervention

Swift A, Webster J, Kimble R, Lee J. The Perineal Tears Project: a quality assurance and practice improvement project to reduce obstetric anal sphincter injuries. *MIDIRS Midwifery Digest*. 2014;24(1):119-25. Not relevant intervention

Taithongchai A, van Gruting IMA, Volloyhaug I, Arendsen LP, Sultan AH, Thakar R. Comparing the diagnostic accuracy of 3 ultrasound modalities for diagnosing obstetric anal sphincter injuries. *Am J Obstet Gynecol*. 2019;221(2):134.e1-.e9. Not relevant population

Tejedor P, Bodega-Quiroga I, Plaza J, Ortega Lopez M, Gutierrez C, Garcia Olmo D, et al. Quality of life and 3D-EUS assessment for anal incontinence after childbirth. *Rev Esp Enferm Dig*. 2019;111(6):453-9. Not relevant outcome

Tejedor P, Plaza J, Bodega-Quiroga I, Ortega-Lopez M, Garcia-Olmo D, Pastor C. The Role of Three-Dimensional Endoanal Ultrasound on Diagnosis and Classification of Sphincter Defects After Childbirth. *J Surg Res*. 2019;244:382-8. Not relevant outcome

Thorley K, Rouse T, Campbell I. Aspects of antenatal care. Results of seeing mothers as partners in antenatal care. *British Journal of Midwifery*. 1997;5(9):546-50. Not relevant population

Tsakiridis I, Mamopoulos A, Athanasiadis A, Dagklis T. Obstetric Anal Sphincter Injuries at Vaginal Delivery: A Review of Recently Published National Guidelines. *Obstet Gynecol Surv*. 2018;73(12):695-702. Not relevant study design

Tunn R, DeLancey JO, Howard D, Thorp JM, Ashton-Miller JA, Quint LE. MR imaging of levator ani muscle recovery following vaginal delivery. *Int Urogynecol J Pelvic Floor Dysfunct*. 1999;10(5):300-7. Not relevant outcome

Turel FD, Langer S, Shek KL, Dietz HP. Medium- to Long-term Follow-up of Obstetric Anal Sphincter Injury. *Dis Colon Rectum*. 2019;62(3):348-56. Not relevant outcome

Turnbull D, Holmes A, Shields N, Cheyne H, Twaddle S, Gilmour WH, et al. Randomised, controlled trial of efficacy of midwife-managed care. *Lancet*. 1996;348(9022):213-8. Not relevant outcome

Ullman RM, Yiannouzis K, Gomme CC. Testing a tool to assess perineal trauma. *British Journal of Midwifery*. 2004;12(2):93-100. Not relevant outcome

Urganci IG, Bidwell P, Sevdalis N, Silverton L, Novis V, Hellyer A, et al. Impact of a multi-centre quality improvement project to reduce the incidence of obstetric anal sphincter injury (OASI) in the UK: a stepped-wedge cluster randomised trial. *BJOG*. 2019;126:230-. Not a relevant publication type (protocols, letters etc)

Valsky DV, Cohen SM, Lipschuetz M, Hochner-Celnikier D, Daum H, Yagel I, et al. Third- or Fourth-Degree Intrapartum Anal Sphincter Tears Are Associated With Levator Ani Avulsion in Primiparas. *J Ultrasound Med*. 2016;35(4):709-15. Not relevant outcome

Valsky DV, Lipschuetz M, Cohen SM, Daum H, Messing B, Yagel I, et al. Persistence of levator ani sonographic defect detected by three-dimensional transperineal sonography in primiparous women. *Ultrasound Obstet Gynecol*. 2015;46(6):724-9. Not relevant outcome

Valsky DV, Messing B, Petkova R, Savchev S, Rosenak D, Hochner-Celnikier D, et al. Postpartum evaluation of the anal sphincter by transperineal three-dimensional ultrasound in primiparous women after vaginal delivery and following surgical repair of third-degree tears by the overlapping technique. <i>Ultrasound Obstet Gynecol.</i> 2007;29(2):195-204.	Not relevant population
van Delft K, Shobeiri SA, Thakar R, Schwertner-Tiepelmann N, Sultan AH. Intra- and interobserver reliability of levator ani muscle biometry and avulsion using three-dimensional endovaginal ultrasonography. <i>Ultrasound in Obstetrics & Gynecology.</i> 2014;43(2):202-9.	Not relevant outcome
van Delft K, Thakar R, Sultan A, IntHout J, Kluivers K. The natural history of levator avulsion one year following childbirth: a prospective study. <i>BJOG: An International Journal of Obstetrics & Gynaecology.</i> 2015;122(9):1266-73.	Not relevant outcome
van Delft K, Thakar R, Sultan AH, Schwertner-Tiepelmann N, Kluivers K. Levator ani muscle avulsion during childbirth: a risk prediction model. <i>Bjog.</i> 2014;121(9):1155-63; discussion 63.	Not relevant outcome
van Gruting MA, van Delft KWM, Sultan AH, Thakar R. The natural history of Levator ANI Muscle Avulsion 4 years following childbirth. <i>Ultrasound in Obstetrics & Gynecology.</i> n/a(n/a).	Not relevant outcome
van Veelen GA, Schweitzer KJ, van Delft K, Kluivers KB, Weemhoff M, van der Vaart CH. Diagnosing levator avulsions after first delivery by tomographic ultrasound: reliability between observers from different centers. <i>Int Urogynecol J.</i> 2014;25(11):1501-6.	Not relevant outcome
Waldman R. ACOG Practice Bulletin No. 198: Prevention and Management of Obstetric Lacerations at Vaginal Delivery. <i>Obstet Gynecol.</i> 2019;133(1):185.	Not a relevant publication type (protocols, letters etc)
Walsh KA, Grivell RM. Use of endoanal ultrasound for reducing the risk of complications related to anal sphincter injury after vaginal birth. <i>Cochrane Database Syst Rev.</i> 2015(10):Cd010826.	Not a relevant publication type (protocols, letters etc)
Wang XM, Chang X, Ding Y, Wang SZ, Zhen Y, Ding JX, et al. Translabial three-dimensional ultrasound investigation of the levator hiatus in postpartum women. <i>J Med Ultrason.</i> 2015;42(3):373-8.	Not relevant outcome
Widmark C, Tishelman C, Ahlberg BM. A study of Swedish midwives' encounters with infibulated African women in Sweden. <i>Midwifery.</i> 2002;18(2):113-25.	Not relevant population
Williams AB, Bartram CI, Halligan S, Spencer JA, Nicholls RJ, Kmiot WA. Anal sphincter damage after vaginal delivery using three-dimensional endosonography. <i>Obstet Gynecol.</i> 2001;97(5):770-5.	Not relevant population
Williams AB, Spencer JA, Bartram CI. Assessment of third degree tears using three-dimensional anal endosonography with combined anal manometry: a novel technique. <i>Bjog.</i> 2002;109(7):833-5.	Not relevant population
Willis S, Faridi A, Schelzig S, Hoelzl F, Kasperk R, Rath W, et al. Childbirth and incontinence: a prospective study on anal sphincter morphology and function before and early after vaginal delivery. <i>Langenbecks Arch Surg.</i> 2002;387(2):101-7.	Not relevant intervention
Wilson AE. Effectiveness of an educational programme in perineal repair for midwives. <i>Midwifery.</i> 2012;28(2):236-46.	Not relevant outcome

- Winkel AF, Lerner V, Zabar SR, Szyld D. A simple framework for assessing technical skills in a resident observed structured clinical examination (OSCE): vaginal laceration repair. *J Surg Educ.* 2013;70(1):10-4. Not relevant outcome
- Wisser J, Schar G, Kurmanavicius J, Huch R, Huch A. Use of 3D ultrasound as a new approach to assess obstetrical trauma to the pelvic floor. *Ultraschall Med.* 1999;20(1):15-8. Not relevant population
- Yagel S, Valsky DV. Three-dimensional transperineal ultrasonography for evaluation of the anal sphincter complex: another dimension in understanding peripartum sphincter trauma. *Ultrasound Obstet Gynecol.* 2006;27(2):119-23. Background article
- Yan Y, Dou C, Wang X, Xi Y, Hu B, Ma L, et al. Combination of tomographic ultrasound imaging and three-dimensional magnetic resonance imaging-based model to diagnose postpartum levator avulsion. *Sci Rep.* 2017;7(1):11235. Not relevant outcome
- Yeo S, Fetters M, Maeda Y. Japanese couples' childbirth experiences in Michigan: implications for care. *Birth.* 2000;27(3):191-8. Not relevant population
- Yeung J, Stecher A, Crisp CC, Mazloomdoost D, Smith B, Kleeman SD, et al. Incidence of Obstetric Anal Sphincter Injuries After Training to Protect the Perineum. *Female Pelvic Med Reconstr Surg.* 2018;24(2):126-9. Not relevant outcome
- Youssef A, Cavalera M, Pacella G, Salsi G, Morganelli G, Montaguti E, et al. Is curved three-dimensional ultrasound reconstruction needed to assess the warped pelvic floor plane? *Ultrasound Obstet Gynecol.* 2017;50(3):388-94. Not relevant outcome
- Youssef A, Montaguti E, Sanlorenzo O, Cariello L, Awad EE, Pacella G, et al. A new simple technique for 3-dimensional sonographic assessment of the pelvic floor muscles. *Journal of Ultrasound in Medicine.* 2015;34(1):65-72. Not relevant population
- Zetterstrom J, Lopez A, Holmstrom B, Nilsson BY, Tisell A, Anzen B, et al. Obstetric sphincter tears and anal incontinence: an observational follow-up study. *Acta Obstet Gynecol Scand.* 2003;82(10):921-8. Not relevant population
- Zetterstrom JP, Mellgren A, Madoff RD, Kim DG, Wong WD. Perineal body measurement improves evaluation of anterior sphincter lesions during endoanal ultrasonography. *Dis Colon Rectum.* 1998;41(6):705-13. Not relevant population

Studies with high risk of bias

Reference

- Andrews V, Thakar R, Sultan AH, Kettle C. Clinical issues. Can hands-on perineal repair courses affect clinical practice? *British Journal of Midwifery*. 2005;13(9):562-6.
- Andrews V, Thakar R, Sultan AH. Structured hands-on training in repair of obstetric anal sphincter injuries (OASIS): an audit of clinical practice. *Int Urogynecol J Pelvic Floor Dysfunct*. 2009;20(2):193-9.
- Glossop C. Perineal care after childbirth. *Health Visitor*. 1996;69(3):96-9.
- Goldbort JG. Women's lived experience of their unexpected birthing process. *MCN Am J Matern Child Nurs*. 2009;34(1):57-62.
- Keighley MR, Perston Y, Bradshaw E, Hayes J, Keighley DM, Webb S. The social, psychological, emotional morbidity and adjustment techniques for women with anal incontinence following Obstetric Anal Sphincter Injury: use of a word picture to identify a hidden syndrome. *BMC Pregnancy Childbirth*. 2016;16(1):275.
- Priddis H, Dahlen H, Schmied V. Women's experiences following severe perineal trauma: a meta-ethnographic synthesis. *Journal of Advanced Nursing (John Wiley & Sons, Inc)*. 2013;69(4):748-59.
- Priddis HS. Autoethnography and severe perineal trauma--an unexpected journey from disembodiment to embodiment. *BMC Womens Health*. 2015;15:88.
- Schneider Z. Pregnant women's experiences of models of care in some hospitals in Victoria. *Aust J Adv Nurs*. 2002;19(3):32-8.
- Shek KL, Green K, Hall J, Guzman-Rojas R, Dietz HP. Perineal and vaginal tears are clinical markers for occult levator ani trauma: a retrospective observational study. *Ultrasound Obstet Gynecol*. 2016;47(2):224-7.
- Way S. A qualitative study exploring women's personal experiences of their perineum after childbirth: expectations, reality and returning to normality. *Midwifery*. 2012;28(5):e712-9.
- Williams A, Lavender T, Richmond DH, Tincello DG. Women's experiences after a third-degree obstetric anal sphincter tear: a qualitative study. *Birth*. 2005;32(2):129-36.
- Zimmo K, Laine K, Vikanes A, Fosse E, Zimmo M, Ali H, et al. Diagnosis and repair of perineal injuries: knowledge before and after expert training-a multicentre observational study among Palestinian physicians and midwives. *BMJ Open*. 2017;7(4):e014183.