

**Surgical approaches to hysterectomy for benign
conditions:
update searches and screening
for
Universitätsklinikum Schleswig-Holstein/Campus Kiel**



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1. PROJECT OBJECTIVES

A key aim of the research project “Making SDM a reality” is to inform patients as part of shared decision making (SDM).

Kleijnen Systematic Reviews (KSR) Ltd has prepared an evidence report with a synthesis of the evidence of surgical approaches to hysterectomy for benign conditions.

2. METHODS

LITERATURE SEARCHES

Literature searches were conducted to identify systematic reviews and evidence-based guidelines about hysterectomy to update the 2019 evidence report.

The search strategies were developed specifically for each database and the keywords adapted according to the configuration of each database. Searches were limited by date range to update earlier searches: 2019-2021. Searches were not limited by language or publication status.

SEARCH SOURCES

Systematic reviews and guidelines

The following systematic review and health technology assessment specific databases were searched:

- Cochrane Database of Systematic Reviews (CDSR) (Wiley): issue 9 of 12, September 2021
- KSR Evidence (Internet) (<https://ksrevidence.com/>): 2019-2021
- Epistemonikos (Internet) (<https://www.epistemonikos.org/>): 2019-2021
- International HTA Database (INAHTA) (<https://database.inahta.org/>): 2019-2021

The following guidelines resources were searched:

- Guidelines International Network (GIN) (Internet) (<https://www.g-i-n.net/home>): 2019-2021
- NICE Evidence (Internet) (www.evidence.nhs.uk/): 2019-2021
- NICE Guidance (Internet) (<https://www.nice.org.uk/guidance>): 2019-2021
- ECRI Guidelines Trust (Internet) (<https://guidelines.ecri.org/>): 2019-2021
- Trip Database (<https://www.tripdatabase.com/>): 2019-2021
- Canadian Agency for Drugs and Technologies in Health (CADTH) (www.cadth.ca): 2019-2021

Full details of all search strategies are presented in Appendix 1.

Handling of citations

References identified from the searches were downloaded into EndNote bibliographic management software for further assessment and handling.

Supplementary searches

The bibliographies of included studies and review articles were also checked for additional relevant articles.

Prioritisation

During formal screening of titles and abstracts, studies were subject to a prioritisation process whereby the recency e.g., to most up-to-date clinical practice guidelines (CPG), methodological quality e.g., Cochrane systematic review (CSR), quality of the analyses per outcome (e.g., ratio of RCTs to observational studies), the number of included RCTs, the breadth of the timepoints reported etc. were considered to further prioritise which studies would be used to inform analyses. Studies were categorised into the following three categories: '1' = German, American, European or similar CPG; '2' = CSR or similar quality SR; '3' = potentially lower/other quality SR.

3. RESULTS

The original EBSCO searches were conducted on August 20, 2019; and of the 172 references screened, 10 studies were deemed eligible. In the current update, a total of 697 records were retrieved from the electronic literature searches (see Appendix 1). After the removal of duplicate records, 433 titles and abstracts were screened by two reviewers. Thirty-six records were found to be potentially eligible and were longlisted after a consensus. Of those, four were short-listed and included in the analyses (Table 1).¹⁻⁴ See also Table 2 for an overview of primary studies included in the identified SRs/CPGs.

UPDATE – Concluding Assessment by SHARE-TO-CARE Evidence Team (19/04/22)

Based on the update searches conducted by KSR Ltd in September 2021, we want to highlight the following aspects: shared decision making remains a crucial process when deciding on the approach to hysterectomy (NICE, 2018; Thurston, 2019). A rather new procedure in the field, Vaginal Natural Orifice Transluminal Endoscopic Surgery (vNOTES), was investigated by Housmans et al. (2020) whose results suggest it to be an effective and safe approach.

Conclusion regarding the evidence report: No evidence update required. The present evidence report (August, 2019) remains valid until further notice.

Table 1 Evidence sources

Study/year	Evidence type	Primary studies	Number of studies	Intervention	Comparator	Outcome	Date searched	Conclusions
NICE 2018 ¹	CPG	SR, RCT	7	Hysterectomy	Uterine artery embolisation, thermal balloon ablation, levonorgestrel intrauterine system, first generation endometrial ablation, second generation endometrial ablation	Multiple	November 23, 2016	"In current practice, hysterectomy is a second-line treatment strategy for heavy menstrual bleeding, for which women need to have tried first-line treatment strategies, and for these to be unsuccessful, before being offered a hysterectomy. Offering hysterectomy as a first-line treatment option may result in an increase in hysterectomies. However, only a small group of women are expected to choose the procedure as first-line treatment"
Housmans 2020 ²	SR	RCT, non-RCTs, OS	6	Vaginal Natural Orifice Transluminal Endoscopic Surgery	Conventional laparoscopy	Operation time, length of hospital stay and estimated blood loss	October 8, 2020	"The available randomised and observational data show that Vaginal Natural Orifice Transluminal Endoscopic Surgery hysterectomy is an effective and safe novel technique for women eligible for endoscopic surgery."
Thurston 2019 ³	CPG	SR, RCTs	3	Vaginal hysterectomy	Laparoscopic hysterectomy, robotic hysterectomy	Multiple	2017	See summary statements and recommendation sections

Study/year	Evidence type	Primary studies	Number of studies	Intervention	Comparator	Outcome	Date searched	Conclusions
Marchand 2021 ⁴	SR	RCTs	4	Laparoscopic supracervical hysterectomy	Endometrial ablation	Quality of life, operation time, time from operation to discharge, pain, fever, and haemoglobin level	N/M	“Laparoscopic supracervical hysterectomy has better outcomes for quality of life. This includes patient indicated responses to social health, general health, and superior haemoglobin levels at all measured points postoperatively. Endometrial ablation, however, was consistently associated with less operative time, a shorter hospital stay and is also considered by the authors to be a more minimally invasive technique which can also result in satisfying outcomes”

CGP = clinical practice guideline; NICE = National Institute for Health and Care Excellence; N/M = not mentioned; OS = observational study; RCT = randomised controlled trial; SR = systematic review.

Table 2 Overview of primary studies included in the identified SRs/CPGs

Study/year	Primary study(ies)	Reference (first author & journal)
NICE 2018 ¹	SRs, RCTs	1. Sesti, F., Piancatelli, R., Pietropolli, A., Ruggeri, V., Piccione, E., Levonorgestrelreleasing intrauterine system versus laparoscopic supracervical hysterectomy for the treatment of heavy menstrual bleeding: a randomized study, Journal of Women's Health, 21, 851-7, 2012 2. Sesti, F., Ruggeri, V., Pietropolli, A., Piancatelli, R., Piccione, E., Thermal balloon ablation versus laparoscopic supracervical hysterectomy for the surgical treatment of heavy menstrual bleeding: a randomized study, Journal of Obstetrics & Gynaecology Research, 37, 1650-7, 2011

Study/year	Primary study(ies)	Reference (first author & journal)
		- Jun, F., Yamin, L., Xinli, X., Zhe, L., Min, Z., Bo, Z., Wenli, G., Uterine artery embolization versus surgery for symptomatic uterine fibroids: a randomized controlled trial and a meta-analysis of the literature, <i>Archives of Gynecology and Obstetrics</i>, 285, 1407-13, 2012 - Moss, J. G., Cooper, K. G., Khaund, A., Murray, L. S., Murray, G. D., Wu, O., Craig, L. E., Lumsden, M. A., Randomised comparison of uterine artery embolisation (UAE) with surgical treatment in patients with symptomatic uterine fibroids (REST trial): 5- year results, <i>BJOG: An International Journal of Obstetrics & Gynaecology</i>, 118, 936- 44, 2011 - Jain, P., Rajaram, S., Gupta, B., Goel, N., Srivastava, H., Randomized controlled trial of thermal balloon ablation versus vaginal hysterectomy for leiomyoma-induced heavy menstrual bleeding, <i>International Journal of Gynaecology & Obstetrics</i>, 135, 140-4, 2016 - Ozdegirmenci, O., Kayikcioglu, F., Akgul, M. A., Kaplan, M., Karcaaltincaba, M., Haberal, A., Akyol, M., Comparison of levonorgestrel intrauterine system versus hysterectomy on efficacy and quality of life in patients with adenomyosis, <i>Fertility & Sterility</i>, 95, 497-502, 2011 - Gupta, J. K., Sinha, A., Lumsden, M. A., Hickey, M., Uterine artery embolization for symptomatic uterine fibroids, <i>Cochrane Database of Systematic Reviews</i>, 2014
Housmans 2020 ²	RCT, non-RCTs	- Wang, C.-J.; Huang, H.-Y.; Huang, C.-Y.; Su, H. Hysterectomy via transvaginal natural orifice transluminal endoscopic surgery for nonprolapsed uteri. <i>Surg. Endosc. Other Interv. Tech.</i> 2015, 29, 100–107. - Yang, Y.S.; Kim, S.Y.; Hur, M.H.; Oh, K.Y. Natural orifice transluminal endoscopic surgery-assisted versus single-port laparoscopic-assisted vaginal hysterectomy: A case-matched study. <i>J. Minim. Invasive Gynecol.</i> 2014, 21, 624–631. - Yang, C.-Y.; Shen, T.-C.; Lin, C.-L.; Chang, C.Y.-Y.; Huang, C.-C.; Lin, W.-C. Surgical outcomes of hysterectomy by transvaginal natural orifice transluminal endoscopic surgery (vNOTES) compared with laparoscopic total hysterectomy (LTH) in women with non-prolapsed and benign uterine diseases. <i>Taiwan. J. Obstet. Gynecol.</i> 2020, 59, 565–569. - Baekelandt, J. Notes hysterectomy: A new approach to hysterectomy via natural orifice transluminal endoscopic surgery. <i>Gynecol. Surg.</i> 2015, 12, S387 - Kaya, C.; Alay, I.; Cengiz, H.; Yildiz, G.O.; Baghaki, H.S.; Yasar, L. Comparison of hysterectomy cases performed via conventional laparoscopy or vaginally assisted natural orifice transluminal endoscopic surgery: A paired sample cross-sectional study. <i>J. Obstet. Gynaecol.</i> 2020, 1–5. - Kim, S.H.; Jin, C.H.; Hwang, I.T.; Park, J.S.; Shin, J.H.; Kim, D.W.; Seo, Y.S.; Sohn, J.N.; Yang, Y.S. Postoperative outcomes of natural orifice transluminal endoscopic surgery-assisted vaginal hysterectomy and conventional laparoscopic-assisted vaginal hysterectomy: A comparative study. <i>Obstet. Gynecol. Sci.</i> 2018, 61, 261–266

Study/year	Primary study(ies)	Reference (first author & journal)
Thurston 2019 ³	SR, RCTs*	1. Gendy R, Walsh CA, Walsh SR, Karantanis E. Vaginal hysterectomy versus total laparoscopic hysterectomy for benign disease: a metaanalysis of randomized controlled trials. <i>Am J Obstet Gynecol.</i> 2011 May;204(5):388.e1-8. 2. Einarsson JI, Cohen SL, Gobern JM, Sandberg EM, Hill-Lydecker CI, Wang K, Brown DN. Barbed versus standard suture: a randomized trial for laparoscopic vaginal cuff closure. <i>J Minim Invasive Gynecol.</i> 2013 Jul-Aug;20(4):492-8. 3. Uccella S, Malzoni M, Cromi A, Seracchioli R, Ciravolo G, Fanfani F, Shakir F, Gueli Alletti S, Legge F, Berretta R, Corrado G, Casarella L, Donarini P, Zanello M, Perrone E, Gisone B, Vizza E, Scambia G, Ghezzi F. Laparoscopic vs transvaginal cuff closure after total laparoscopic hysterectomy: a randomized trial by the Italian Society of Gynecologic Endoscopy. <i>Am J Obstet Gynecol.</i> 2018 May;218(5):500.e1-500.e13.
Marchand 2021 ⁴	RCTs*	1. Cooper K, Breeman S, Scott NW, Scotland G, Clark J, Hawe J, et al; HEALTH Study Group. Laparoscopic supracervical hysterectomy versus endometrial ablation for women with heavy menstrual bleeding (HEALTH): a parallel-group, open-label, randomised controlled trial. <i>Lancet.</i> 2019; 394: 1425-36. 2. Sesti F, Ruggeri V, Pietropolli A, Piancatelli R, Piccione E. Thermal balloon ablation versus laparoscopic supracervical hysterectomy for the surgical treatment of heavy menstrual bleeding: a randomized study. <i>J Obstet Gynaecol Res</i> 2011; 37: 1650-7. 3. Zupi E, Centini G, Lazzeri L, Finco A, Zullo F, Exacoustos C. Hysteroscopic Endometrial Resection Versus Laparoscopic Supracervical Hysterectomy for Abnormal Uterine Bleeding: Long Term Follow-Up of a Prospective Randomized Trial. <i>J Minim Invasive Gynecol</i> 2015; 22: S39.
* = only studies published after 2010 were extracted CGP = clinical practice guideline; RCT = randomised controlled trial; SR = systematic review.		

REFERENCES

- [1] National Institute for Health and Care Excellence (NICE). *Heavy menstrual bleeding: assessment and management. NICE guideline 88 [Internet]*. London: National Institute for Health and Care Excellence, 2018 [accessed 22.9.21] Available from: <https://www.nice.org.uk/guidance/ng88>
- [2] Housmans S, Noori N, Kapurubandara S, Bosteels JJA, Cattani L, Alkatout I, et al. Systematic review and meta-analysis on hysterectomy by vaginal natural orifice transluminal endoscopic surgery (vNOTES) compared to laparoscopic hysterectomy for benign indications. *J Clin Med* 2020;9(12):3959.
- [3] Thurston J, Murji A, Scattolon S, Wolfman W, Kives S, Sanders A, et al. No. 377-Hysterectomy for benign gynaecologic indications. *J Obstet Gynaecol Can* 2019;41(4):543-57.
- [4] Marchand GJ, Azadi A, Sainz K, Masoud A, Anderson S, Ruther S, et al. Systematic review, meta-analysis and statistical analysis of laparoscopic supracervical hysterectomy vs endometrial ablation. *J Turk Ger Gynecol Assoc* 2021;22(2):97-106.

APPENDIX 1: SEARCH STRATEGIES

Shared Decision Making: surgical approaches to hysterectomy for benign conditions update (EBSCO)

Table 3. Systematic reviews and guideline search results

Database	Dates	Results
CDSR	2019 - Issue 9, September 2021	14
KSR Evidence	2019-2021	217
Epistemonikos	2019-2021	244
INAHTA	2019-2021	3
NICE Evidence	01/01/2019 - 21/09/2021	24
NICE Guidance	2019-2021	11
GIN	2019-2021	0
ECRI	2019-2021	2
Trip	2019-2021	182
CADTH	2019-2021	0
Total		697
Total after de-duplication		434

Search strategies

Cochrane Database of Systematic Reviews (CDSR) (Wiley): Issue 9 of 12, September 2021
Searched: 21.9.21

#1 MeSH descriptor: [Hysterectomy] explode all trees 1842
#2 (hysterectomy or hysterectomies):ti,ab,kw 7330
#3 (colpohysterectomy or colpohysterectomies or trachelectomy or trachelectomies or cervicectomy or cervicectomies or hysterocolpectom* or panhysterectom*):ti,ab,kw 32
#4 ((uterus or uterine or uteri or supracervical or supervaginal) near/3 (excis* or amputat* or extirpat*)):ti,ab,kw 33
#5 #1 or #2 or #3 or #4 with Cochrane Library publication date Between Jan 2019 and Dec 2021, in Cochrane Reviews, Cochrane Protocols 14

KSR Evidence (Internet): Database last updated 21 September 2021

www.ksrevidence.com

Searched: 21.9.21

1 hysterectomy or hysterectomies in All text 440 results
2 colpohysterectomy or colpohysterectomies or trachelectomy or trachelectomies or cervicectomy or cervicectomies or hysterocolpectom* or panhysterectom* in All text 20 results
3 (uterus or uterine or uteri or supracervical or supervaginal) near/3 (excis* or amputat* or extirpat*) in All text 2 results
4 #1 or #2 or #3 in All text Date published: 2019 - 2021 217 results
Search run Tue Sep 21 2021

Epistemonikos (Internet): up to 21 September 2021

<https://www.epistemonikos.org/en/>

Searched: 21.9.21

(title:(hysterectomy* OR colpohysterectomy* OR trachelectomy* OR cervicectomy* OR hysterocolpomy* OR panhysterectomy*) OR abstract:(hysterectomy* OR colpohysterectomy* OR trachelectomy* OR cervicectomy* OR hysterocolpomy* OR panhysterectomy*)) Publication year: Custom year range: From 2019 To 2021; Publication Type: Systematic Review

Records retrieved 244

International HTA Database (INAHTA): up to 21 September 2021

<https://database.inahta.org/>

Searched: 21.9.21

1 "Hysterectomy"[mh] 29
2 hysterectomy* OR colpohysterectomy* OR trachelectomy* OR cervicectomy* OR hysterocolpomy* OR panhysterectomy* 78
3 #1 OR #2 YEAR 2019 TO 2021 3

NICE Evidence Search (Internet): up to 21 September 2021

<https://www.evidence.nhs.uk/>

Searched: 21.9.21

Search terms	Results (Guidance): 01/01/2019-20/09/2021
hysterectomy*	46
Total retrieved	46
Sifted for relevance	24

National Institute for Health and Care Excellence (NICE): Guidelines

<https://www.nice.org.uk/>

Searched: 20.9.21

hysterectomy

2019-2021

Guidance 6

Advice 0

Quality standards 0

Pathways 5

Total 11

Guidelines International Network (GIN). International Guidelines Library (Internet): up to 22 September 2021

<https://g-i-n.net/international-guidelines-library/>

Searched: 22.9.21

hysterectomy

2019-2021

0 records retrieved

ECRI Institute Guidelines Trust (Internet): up to 22 September 2021

<https://guidelines.ecri.org/>

Searched: 22.9.21

hysterectomy

2019-2021

2 records retrieved

Trip Database: up to 20 September 2021

<https://www.tripdatabase.com/>

Searched: 20.9.21

hysterectomy OR hysterectomies OR colpohysterectomy* OR trachelectomy* OR
cervicectomy* OR hysterocolpsectomy* OR panhysterectomy*; in the Document; 2019, 2021

Guidelines: 123 records retrieved

hysterectomy OR hysterectomies OR colpohysterectomy* OR trachelectomy* OR
cervicectomy* OR hysterocolpsectomy* OR panhysterectomy*; in the Title; 2019, 2021

Systematic Reviews: 59 records retrieved

182 records retrieved

Canadian Agency for Drugs and Technologies in Health (CADTH): up to 22 September 2021

<https://www.cadth.ca/>

Searched: 22.9.21

hysterectomy

Advanced Search; Project Line; Health Technology Assessment; 2019-2021

0 records retrieved