Newcastle University

NHS
The Newcastle upon Tyne Hospitals
NHS Foundation Trust

External Assessment Group's Protocol

HTE10072 Endoscopic submucosal dissection knives for the resection of complex colorectal polyps with suspected submucosal invasion – Existing Use Assessment

External Assessment Group: Newcastle External Assessment Group (EAG)

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Contents

Abbreviations

Term	Definition
DARS	Data Access Request Service
DataSAT	Data Suitability Assessment Tool
EAG	External Assessment Group
EMR	Endoscopic mucosal resection
ESD	Endoscopic submucosal dissection
HES	Hospital Episode Statistics
NHS EED	National Health Service Economic Evaluation Database
NICE	National Institute for Health and Care Excellence
PRISMA	Preferred reporting items for systematic reviews and meta-analyses
PROMs	Patient reported outcome measures
PSS	Personal Social Services

1 Decision problem

Table 1 summarises the decision problem to be addressed in this assessment. Further detail on each element can be found in the published scope for the assessment.

Table 1. Summary table of the decision problem

Item	Description	EAG comments
Population(s)	• People with one or more complex colonic polyp with suspected submucosal invasion • People with one or more complex rectal polyp with suspected submucosal invasion	The EAG will use the definition of complex polyp outlined in the Final Scope. The EAG acknowledge that this definition may not be clearly defined within the available literature. The EAG will consult with clinical experts about suitable terminology to support search terms and generalisability of evidence identified for other types of polyp in the colon or rectum.
Intervention(s)	ESD knives stratified by tip type: Insulated tip type knives • AqaNife (Ovesco) • ITknife nano (Olympus Medical Systems) • ITknife2 (Olympus Medical Systems)	The EAG acknowledge that the specific knife used (such as defining the specific tip type) may not be well reported within the available literature. The EAG have outlined the approach to considering evidence where multiple knives with similar

Item	Description	EAG comments
	• GOLDKNIFE Type IT (Micro-Tech) • GOLDKNIFE Type O (Micro-Tech) • HybridKnife O-type (Erbe Elektromedizin GmbH) • VedKnife T-Type (Vedkang) • VedKnife D-Type (Vedkang) <u>Non-insulated tip type knives</u> • DualKnife (Olympus Medical Systems) • DualKnife J (Olympus Medical Systems) • TriangleTipKnife (Olympus Medical Systems) • TriangleTipKnife K (Olympus Medical Systems) • FlushKnife BTS (FujiFilm Healthcare Europe) • FlushKnife NS (FujiFilm Healthcare Europe) • GOLDKNIFE Type I (Mirco-Tech) • GOLDKNIFE Type T (Micro-Tech) • HybridKnife I-type (Erbe Elektromedizin GmbH) • HybridKnife T-type (Erbe Elektromedizin GmbH) • HYBRIDknife flex I-type (Erbe Elektromedizin GmbH) • HYBRIDknife flex T-type (Erbe Elektromedizin GmbH) • ORISE ProKnife (Boston Scientific Corporation) • Speedboat Inject (Creo Medical Ltd.) • Speedboat Notch (Creo Medical Ltd.) • Speedboat UltraSlim (Creo Medical Ltd.) • Splash-M-Knife (PENTAX Medical)	names with the same or different tip types in Section 2.6.

Item	Description	EAG comments
	<u>Non-insulated tip type subgroup – hook shaped knives</u> • HookKnife (Olympus Medical Systems) • HookKnife J (Olympus Medical Systems) • VedKnife L-Type (Vedkang) <u>Scissor type knives</u> • ClutchCutter (FujiFilm Healthcare Europe) • SpydrBlade Flex (Creo Medical Ltd.)	
Comparators	ESD knives with a similar type of tip	Depending on the availability of evidence, the EAG may consider comparative evidence where ESD knives are compared between tip type strata as indirect comparisons. The EAG may also consider evidence where the comparator includes the use of multiple knives with different tip types within the same procedure, see Table 2.
Setting	Tertiary referral centres (complex polyp services)	No comments.
Outcomes eligible for inclusion **(organised by outcome type)**	Intermediate outcomes: • Length of hospital stay • Mortality • Adverse events (bleeding, perforation) • Procedure duration • R0 resection rate • Number of cancer diagnoses Clinical outcomes: • Polyp recurrence • Cancer progression • Need for additional surgery	No comments.

Item	Description	EAG comments
	Patient-reported outcomes: • Health related quality of life Costs and resource use: • Cost of knife and associated equipment (for example, including dyes, endoclips, generators) • Number of knives needed due to durability issues or device failure • Cost of staff • Cost of follow-up testing for recurrent polyps • Costs of treating cancer • Length of hospital stay A user preference assessment will be conducted to determine the preferences of people that use ESD knives when choosing a knife.	
Economic analysis	A health economic model will be developed comprising a cost utility or cost-comparison analysis. Costs will be considered from an NHS and Personal Social Services perspective. Sensitivity and scenario analysis should be undertaken to address the relative effect of parameter or structural uncertainty on results. The time horizon should be long enough to reflect all important differences in costs or outcomes between the technologies being compared.	No comments.

1.1 Objectives

This assessment will try to address the following research questions:

- Do differences in clinical and cost-effectiveness between ESD knives with the same tip type, for the resection of complex

colorectal polyps with suspected submucosal invasion justify price variation?

- Are there other factors that can inform decisions about which technology to purchase?

The assessment will include a systematic search and review of published evidence that enables evaluation of the efficacy or effectiveness of the technologies when used in the context set out in the decision problem, Table 1. Where available, this may be supplemented by real-world evidence sources and evidence provided by the companies. Evidence that is relevant to the decision problem for this assessment (that is, represents the relevant population, interventions, outcomes, settings and is considered of suitable quality) will be extracted and appraised by the EAG. The evidence will be tabulated to identify where there are meaningful gaps for the decision problem. The EAG will also develop an economic model to provide an assessment of the potential cost-effectiveness of the technologies in scope. The EAG will undertake a User Preference Assessment to determine what other factors inform decision-making about which technology or technologies to use.

2 Evidence review methods

The EAG will review the standard request for information forms and instructions for use (IFU) submitted to NICE for each technology within scope to develop a technology summary. Any missing or incomplete information may be supplemented with information found in the public domain, for example from company websites, as appropriate. Indications and contraindications listed in each technology's IFU will be considered and any evidence identified which has been undertaken in a contraindicated population (either exclusively or where results are reported for a mixed population) will be excluded by the EAG. Technology summary tables may be sent to each company for review to ensure accuracy of content.

The EAG will review the request for evidence forms submitted to NICE for each technology within scope. This will be supplemented by an independent literature search undertaken by the EAG.

2.1 Inclusion criteria

The inclusion and exclusion criteria are outlined in Table 2. In instances where no evidence directly relevant to the scope is identified for a technology from the literature searching, the EAG may expand the elements of the scope and shall consult with clinical experts to determine the generalisability of the included evidence and findings to the UK NHS.

Table 2: Inclusion and exclusion criteria

	Inclusion Criteria	Exclusion Criteria
Population	People with complex colorectal polyps, as defined in the Final Scope. If there is a lack of data exclusively available in this specific population, the EAG may consider data from mixed polyp types located within the colon or rectum.	Studies conducted exclusively in people with other non-complex colorectal lesions. People with polyps affecting other sections of the gastrointestinal tract, such as gastric or oesophageal lesions.
Intervention	Any of the technologies listed within the Final Scope, as listed in Table 1. As per NICE HealthTech programme manual (PMG48, updated October 2025): *Evidence on predecessor versions of a technology may be considered, particularly if there is limited evidence on the currently available model or version. But the extent to which it is appropriate to use such evidence should be considered and commented on in the assessment report, for the committee to consider in its decision making.* The EAG shall liaise with clinical experts and may seek clarification from the companies in order to consider generalisability of evidence in predecessor technologies.	Evidence related to contraindications (device specific as evidenced in the instructions for use and completed request for information shared by the companies).
Comparators	Comparators as listed in Table 1.	Comparisons with surgery or EMR.

	Inclusion Criteria	Exclusion Criteria
	The EAG may also consider mixed comparators (such as interventions using multiple ESD knives).	
Setting	Tertiary referral centres (complex polyp services)	Setting may lack detailed reporting, but due to the complexity of the ESD procedure and the skills required, the EAG anticipate that the majority of evidence will be from a tertiary or specialised secondary setting. The EAG do not propose excluding any evidence based on setting alone, however, will extract information on country, setting, and experience of the endoscopist (where reported) to enable consideration of the generalisability of evidence.
Outcomes	Any outcome as listed in Table 1	Outcomes outside of the scope, which are not listed in Table 1
Study design	Human studies with any study design	Animal studies, lab-based studies
Other	Studies must be available in English	Studies reported in languages other than English.

2.2 Search strategy

A search strategy will be developed by one of the EAG's information specialists in EMBASE, peer reviewed by a second information specialist, and then translated, adapted and run independently for each individual database. A set of terms relating to ESD for colorectal lesions will be combined with relevant search filters designed to identify the most relevant literature to the decision problem.

The following databases will be searched:

- MEDLINE ALL (on Ovid, including In-Process and In-Data-Review and Other Non-Indexed Citations, Epub Ahead of Print, and Daily);
- Embase (on Ovid);

- Cochrane Library (Cochrane Central Register of Controlled Trials, via Wiley);
- International HTA Database (INAHTA).

Ongoing trials will be searched for (ClinicalTrials.gov, WHO ICTRP); studies conducted in a UK setting will be prioritised if there are more than 20 ongoing studies identified relevant to the decision problem.

Where technology-specific data is lacking, the EAG will not consider targeted searches to identify systematic reviews or primary evidence pertaining to the general knife tip types, as this approach assumes clinical equivalence between the technologies listed in the Final Scope. Additionally, the Final Scope highlights use cases where each particular knife tip type may be used, therefore the EAG consider broad comparisons between knife tip types are out of scope of this evaluation. The EAG note that the effect size of other knife features (such as waterjet, ability to conduct the ESD procedure underwater, monopolar or bipolar energy) or training and clinician expertise is out of scope of this review. If additional features (other than knife tip type) are important to users when selecting a technology for conducting ESD for complex colorectal polyps, this will be identified within the User Preference work (see section 4). Therefore, the EAG will not consider targeted searches pertaining to other ESD knife features.

2.3 Study selection

Published evidence

Two levels of study selection will be conducted:

- Step 1: Initial pilot review of a 10% sample of titles and abstracts of records identified in literature searches will be screened against a subset of the inclusion criteria (population, intervention) by two reviewers to ensure consistency in eligibility criteria. Full review of all the title and abstracts will be undertaken by at least two reviewers. Any disagreements will be considered by a third reviewer for arbitration.

- Step 2: Full publications will be retrieved for records included at Step 1 and all will be screened by two reviewers to confirm the technology used and to determine the outcomes with results reported. Any disagreements will be considered by a third reviewer for arbitration.

The flow of studies through both levels of screening will be recorded and displayed in a PRISMA diagram. Studies excluded following full paper review will have the reason for exclusion documented and tabulated within the EAG report.

Routinely collected data

The EAG note that the use of endoscopic submucosal dissection (ESD) was recommended within IPG335 under special arrangements for clinical governance, consent and audit or research with specific guidance for relevant audit criteria. Where available, the EAG may consider routinely collected evidence sources and their value to address the decision problem.

Confidential data

Where available, the EAG can consider sources of evidence provided in confidence by the companies. The EAG note that NICE have requested that a publishable abstract with data reported should be available for any full texts submitted in confidence for transparency. The EAG will consider eligibility of the full text and abstract summaries in line with the inclusion criteria outlined in **Error! Reference source not found.**.

Hierarchy of evidence

The EAG may adopt a hierarchical approach to evidence depending on the quantity and quality of the available evidence. Priority may be given based on setting (such as UK studies or real-world data), study design (such as a randomised-controlled trial, systematic review, or comparative cohort), sample size (Carroll et al. 2025) or other features relevant to the scope of the decision problem. Where a hierarchy is applied, the EAG will liaise with clinical experts to ensure the validity and appropriateness of the approach.

2.4 Data extraction strategy

Due to the number of components involved in the ESD procedure, the EAG may use the TIDiER framework (Hoffmann et al. 2014) for extracting data on how the intervention was conducted. Where used this will contribute to assessment of alignment to the scope and generalisability between studies.

Published and confidential evidence

Data from included studies reporting clinical outcomes will be extracted into a bespoke table to enable descriptive statistics, including study design, setting, eligibility criteria, population characteristics, intervention characteristics, and list of outcomes where results are reported. Data will be extracted from included studies reporting on economic outcomes into a bespoke table to enable descriptive statistics, including model design, setting, time horizon, intervention and comparator characteristics, and key findings.

Routinely collected data

If audit or registry data is provided to the EAG as a data processor (with NICE acting as the data controller), it should be in a suitable format that can be easily processed by the EAG. Data will be cleaned and formatted in line with a data field specification, if one is available. Otherwise, clinical expert opinion will be sought to understand how to best assess the data.

Data from Hospital Episode Statistics (HES) are currently available to the EAG as pseudonymised data extracts supplied under the DARS agreement (DARS-NIC-170211-Z1B4J). If the EAG considers that this data can be of value in addressing the decision problem, it will be extracted and formatted using the NHS Data Dictionary available on the NHS Digital website. Results of HES analysis will be reported following small number suppression as per the HES analysis guide.

All analysis of routinely collected data will be completed using the statistical programming language R.

2.5 Quality assessment strategy

The EAG will use appropriate critical appraisal checklists relative to the study design for each of the included full publications (publicly available and confidential data). The Data Suitability Assessment Tool (DataSAT) will be used to assess the suitability and quality of any routinely collected data used to inform the economic evaluation (NICE ECD9, 2023).

Where evidence is considered by the EAG outside of its intended study design, for example when considering a single arm of a randomised-controlled trial, the EAG will not apply a formal critical appraisal checklist as this would not offer a true reflection of the study bias in the context of this evaluation. In these instances, and to provide an overall assessment of the evidence base quality, the EAG will provide a high-level narrative summary of the key strengths, limitations, potential sources of bias, and comment on the generalisability of the results to clinical practice in the NHS.

2.6 Methods of analysis and synthesis

The EAG will assess the feasibility of conducting appropriate meta-analysis to compare the different ESD knives in line with the decision problem, Table 1. If data does not allow for quantitative assessment methods, such as meta-analysis, the EAG will perform a narrative synthesis guided by the Synthesis without meta-analysis reporting guidelines (Campbell et al. 2020).

The EAG may consider indirect evidence between ESD knife tip types only, such as the appropriateness of expanding the scope comparator to enable indirect comparisons between ESD knives with the same tip type through comparison of ESD knives with a different tip type. Where considered, the EAG will liaise with clinical experts to ensure the validity and appropriateness of this approach. The scope of this assessment is focused on the decision after the ESD procedure and the ESD tip type have been chosen as the most clinically appropriate procedure. This assessment aims to determine which ESD knife represents the most clinical- and cost-effective technology for this procedure. Therefore, the EAG will not consider undertaking indirect comparisons between ESD knives in scope and surgery or endoscopic

mucosal resection (EMR) as the clinical experts suggest these procedures are used in different populations. Therefore, if the EAG were to undertake these analyses, the effective sample size would be compromised and would not offer valid or reliable results.

The EAG acknowledge that the specific knife and tip type may not be well reported in the evidence base, such as use of the term ‘FlushKnife’ rather than ‘FlushKnife BTS’ or ‘FlushKnife NS’, where the tip type is explicitly captured. The EAG note that most manufacturers have single technologies included in scope or multiple technologies with the same tip type, as listed in Table 1. Therefore, the EAG may consider the appropriateness of capturing evidence for a group of knives by the same manufacturer with the same tip type, such as including evidence for both FlushKnives collectively. The EAG will consult with the clinical experts and NICE for the appropriateness of this approach. However, the EAG note that 3 manufacturers have knives with similar names with different tip types, Table 3. Where evidence does not clearly report the knife tip type used or includes a mixed population the EAG may consider contacting the lead author or companies to determine which knife was used, with responses accepted as per the dates outlined in Section 5. The EAG may also consider the appropriateness of using the publication date and the individual knife commercialisation date to infer which knife was used, for example where a publication is available prior to the commercialisation date listed in the company request for information documents. The EAG may also consider the appropriateness of conducting sensitivity analysis when attributing the results to each knife tip type strata. The EAG will liaise with the clinical experts to ensure the validity and appropriateness of these approaches.

Table 3 Technologies with similar knife names and different tip types

Technology	Insulated tip type	Non-insulated tip type	Non-insulated hook shaped tip type
GOLDKNIFE Type IT	✓	-	-
GOLDKNIFE Type O	✓	-	-
GOLDKNIFE Type I	-	✓	-
GOLDKNIFE Type T	-	✓	-
HybridKnife O-type	✓		-
HybridKnife I-type	-	✓	-
HybridKnife T-type	-	✓	-
HYBRIDknife flex I-type	-	✓	-
HYBRIDknife flex T-type	-	✓	-
VedKnife T-Type	✓	-	-
VedKnife D-Type	✓	-	-
VedKnife L-Type	-	-	✓

3 Economic analysis methods

3.1 Identifying and reviewing published cost-effectiveness studies

The EAG will conduct searches for relevant economic evaluations and systematic reviews of economic evaluations in NHS Economic Evaluation Database (NHS EED), focusing on ESD. Economic evaluations identified within the proposed literature searching will be considered for relevance to the decision problem and the EAG will adopt the same approach to evidence searching and selection as described in Section 2.3. Targeted searches may be undertaken as needed for specific economic parameters if these are not available from the clinical- or cost-effectiveness evidence identified. The search would combine the set of intervention terms with a filter relevant for the missing parameter. This may include searches of IDEAS/RePEc, CEA Registry (via Tufts Medical Center), and the International HTA Database (INAHTA). Where available, evidence from an UK setting will be prioritised.

Methods and findings from included published economic evidence will be summarised in a tabular format and synthesised in a narrative review by technology. Economic evidence from the perspective of the UK NHS and Personal Social Services (PSS) will be presented in greater detail.

3.2 Evaluation of costs, quality of life and cost-effectiveness

To evaluate cost-effectiveness of the technologies listed in the scope, the EAG will develop an economic model from the perspective of the UK NHS and PSS, with cost-effectiveness evaluated against a willingness to pay threshold consistent with the NICE reference case framework (NICE Health Technology evaluations manual, 2022). The type of analysis undertaken, and structure of the model will be guided by existing economic evaluations, either published in the literature, or otherwise publicly available. The EAG will build the model in R Programming Language using the 'rdecision' package, and will carry out, and document the results of validation.

The EAG will source the costs of using the technologies from the companies NHS Supply Chain, published guidance or evidence. This may include costs for the ESD knives and related consumables, but also the costs of the generator needed to run them. Costs of other procedures, interventions, complications, imaging and so on, will be sourced from the latest available NHS Reference Costs. The EAG will use the costs collated to establish a comparable per patient cost for each technology. This may require input from clinical experts or UK data to consider the number of patients across which capital costs may be distributed. Where costs need to be converted between currencies, or inflated to the current year, the EAG will use the CCEMG – EPPI Centre Cost Converter. If a time-horizon longer than 1 year is used, discounting of 3.5% to costs and utilities will be applied in line with the NICE reference case framework (NICE Health Technology evaluations manual, 2022).

Quality of life data will be sourced from published evidence, where available, or may use standardised population utilities (for example, from the NICE

Decision Support Unit [Hernández Alava et al., 2022]), adjusted by suitable multipliers or disutility values.

Sources of evidence for clinical parameters (that is, likelihood of events) may include published evidence, analysis of data from the UK ESD Registry, routine Hospital Episode Statistics (HES), clinical expert opinion and other sources, as appropriate.

If the available evidence indicates differences in long term outcomes between the intervention and comparator (for example, polyp recurrence, mortality, need for cancer treatment), a Markov model is likely to be the most suitable to evaluate cost-effectiveness. Otherwise, if there is no evidence of difference in long term outcomes, a shorter term decision tree approach may be appropriate. The EAG will select the most appropriate option based on the available evidence, and if Markov modelling is appropriate, will select a suitable cycle length to capture the likely rate of transitioning between states, and a suitable time horizon to reflect the period over which differences are expected between arms.

To address uncertainty in the parameter values included in the model, the EAG will carry out sensitivity analysis. This may include deterministic and probabilistic sensitivity analysis, and modelling of specific clinically plausible scenarios, where data allows and deemed appropriate.

Results will be presented using incremental cost effectiveness ratios, net monetary benefit, or incremental net monetary benefit, as appropriate.

4 User preference assessment

In parallel to the evidence review and economic analysis the EAG will do a user preference assessment. In line with the decision problem outlined in the Final Scope, the EAG will seek to recruit people with experience of using the ESD knives for the resection of complex colorectal polyps with suspected submucosal invasion (such as, endoscopists or colorectal surgeons) included within this assessment to determine the key considerations and factors when choosing between the technologies, as outlined within the Final Scope.

The aim of the user preference assessment is to supplement the clinical and economic evidence by:

- identifying the key preference criteria that are important to users of the technology when deciding which technology to choose;
- understanding the relative importance of these criteria via SMART ranking and swing weighting (which may include weighting only the top 10 ranked criteria);
- understanding how users apply these criteria when choosing a technology.

The process will involve two workshops and two email exercises. An output of this piece of work will include a 'performance matrix'. This will include the most important criteria to users and how they would measure performance in these criteria. Within this approach performance rules may not be developed for any criteria with a weight less than 5%, this is to ensure that only the criteria which are the most important to users are considered.

The results of User Preference work will be summarised within the main External Assessment Report. Each technology will be compared to matrix using evidence identified. The User Preference work may be used to inform the economic modelling, to explore if alternative scenarios or revisions are needed. User Preference criteria not captured in the evidence analysis will be outlined in the assessment report.

5 Handling information

The EAG will consider data or evidence supplied by the companies or stakeholders involved. If the data meet the inclusion criteria for the review they will be considered in more detail. It may not be possible to include information supplied by Companies if received by the EAG later than 22 April 2026. The EAG will include routinely collected evidence sources if data are received before 01 March 2026. If data are received later than this, the EAG will first consider the feasibility of analysing this data and may not be able to

include it. Any ‘commercial in confidence’ data provided and specified as such will be highlighted in blue and underlined in the EAG Report. Any ‘academic in confidence’ data provided will be highlighted in yellow and underlined in the EAG Report. Any ‘personally identifiable’ data provided will be highlighted in pink and underlined in the EAG Report. Any ‘confidential price agreements’ data provided will be highlighted in green and underlined in the EAG Report. All confidential information, as identified above, will be redacted before publication on the NICE website. If confidential information is included in any economic models produced, then a version using dummy data or publicly available data in place of confidential data will be provided.

6 Competing interests of authors

None.

7 References

Campbell M, McKenzie JE, Sowden A, Katikireddi SV, Brennan SE, Ellis S, Hartmann-Boyce J, Ryan R, Shepperd S, Thomas J, Welch V, Thomson H. Synthesis without meta-analysis (SWiM) in systematic reviews: reporting guideline. BMJ. 2020 Jan 16;368:l6890. doi: 10.1136/bmj.l6890. PMID: 31948937; PMCID: PMC7190266.

Carroll C, Cooper K, Harnan S, Wailoo A. (2025) Technical Support Document 27. Prioritising studies and outcomes for consideration in NICE HealthTech literature reviews. Available from https://sheffield.ac.uk/nice-dsu/tsds/prioritising-studies-and-outcomes-consideration-nice-healthtech-literature-reviews

Endoscopic submucosal dissection of lower gastrointestinal lesions (2010) NICE Interventional Procedures Guidance IP335

Hoffmann T, Glasziou P, Boutron I, Milne R, Perera R, Moher D, Altman D, Barbour V, Macdonald H, Johnston M, Lamb S, Dixon-Woods M, McCulloch P, Wyatt J, Chan A, Michie S. Better reporting of interventions: template for

intervention description and replication (TIDieR) checklist and guide. BMJ. 2014;348:g1687.

NICE HealthTech programme manual (2025) NICE Process and Methods PMG48

NICE real-world evidence framework (2022) NICE Corporate Document ECD9

NICE technology appraisal and highly specialised technologies guidance: the manual (2022) NICE Process and Methods PMG36

Appendices

Appendix A1: NICE IS search strategies

Database searches

Databases*	Date searched	No retrieved	Version/files
MEDLINE All (Ovid)	29/10/2025	623	1946 to October 28, 2025
EMBASE (Ovid)	29/10/2025	998	1996 to 2025 October 28
Embase Conferences (OVID)	29/10/2025	1,488	1996 to 2025 October 28
CDSR (Wiley)	29/10/2025	11	Issue 10 of 12, October 2025
CENTRAL (Wiley)	29/10/2025	82	Issue 9 of 12, September 2025
CENTRAL conferences	29/10/2025	79	Issue 9 of 12, September 2025
HTA database (INAHTA)	29/10/2025	2	
Epistemonikos	29/10/2025	229	
Google Scholar (device only)	29/10/2026	179	
Total		3,691	
Total after deduplication		2,740	

MEDLINE

#	Searches
1	(Speedboat and (ESD or endoscop*)).af.
2	creo medical.tw.
3	(Prodigi and (ESD or endoscop*)).af.
4	(medtronic and (knife or knives)).tw.
5	((RESECT+ or FRTD) and ovesco).af.
6	(Dualknife or Dual knife).af.
7	(olympus and (knife or knives)).tw.
8	Hybridknife.af. or (hybrid and t-type and knife).tw.
9	Erbe Elektromedizin.tw.
10	(FlushKnife or Flush knife).af.
11	(FujiFilm and (knife or knives)).tw.
12	Orise proknife.af.
13	(Boston Scientific and proknife).af.
14	(Boston Scientific and (knife or knives)).tw.
15	Medi-Globe.tw.
16	(SBknife or ((SB or stag beetle) adj1 knife)).tw.
17	Sumitomo Bakelite.tw.
18	vedknife.af.
19	vedkang.tw.
20	goldknife.af.
21	(micro-tech and (knife or knives)).tw.
22	esd knife type b.af.
23	MTW Endoskopie.tw.
24	or/1-23
25	Endoscopic Mucosal Resection/ and Surgical Instruments/
26	(endoscop* adj2 (mucos* or submucos*) adj2 (dissect* or resect*) adj5 (device* or instrument* or knife or knives or tool*)).tw.
27	((ESD or EMR) adj3 (device* or instrument* or knife or knives or tool*)).tw.
28	((electrocaut* or electrosurg*) adj3 (device* or instrument* or knife or knives or tool*)).tw.
29	(endoscop* and (one adj2 knife)).tw.
30	or/25-29
31	((bowel* or cecum or colon* or colorect* or duodenal or duodenum or epigastr* or gastric* or gastro* or intestin* or oesophag* or esophag* or rectal or rectum or stomach) adj3 (disease* or lesion* or lump* or polyp* or cancer* or neoplas* or tumo?r*)).tw,kf.
32	30 and 31
33	24 or 32
34	limit 33 to english language
35	letter/
36	editorial/
37	news/
38	exp historical article/
39	Anecdotes as Topic/
40	comment/
41	(letter or comment*).ti.
42	or/35-41

43	randomized controlled trial/ or random*.ti,ab.
44	42 not 43
45	34 not 44
46	animals/
47	exp Animals, Laboratory/
48	exp Animal Experimentation/
49	exp Models, Animal/
50	exp Rodentia/
51	(rat or rats or mouse or mice or rodent*).ti.
52	or/46-51
53	52 not humans/
54	45 not 53

Embase

#	Searches
1	(Speedboat and (ESD or endoscop*)).af.
2	creo medical.tw.
3	(Prodigi and (ESD or endoscop*)).af.
4	(medtronic and (knife or knives)).tw.
5	((RESECT+ or FRTD) and ovesco).af.
6	Dualknife.af. or Dual knife.tw.
7	(olympus and (knife or knives)).tw.
8	Hybridknife.af. or (hybrid and t-type and knife).tw.
9	Erbe Elektromedizin.tw.
10	FlushKnife.af. or Flush knife.tw.
11	(FujiFilm and (knife or knives)).tw.
12	Orise proknife.af.
13	(Boston Scientific and proknife).af.
14	(Boston Scientific and (knife or knives)).tw.
15	Medi-Globe.tw.
16	(SBknife or ((SB or stag beetle) adj1 knife)).tw.
17	Sumitomo Bakelite.tw.
18	vedknife.af.
19	vedkang.tw.
20	goldknife.af.
21	(micro-tech and (knife or knives)).tw.
22	esd knife type b.af.
23	MTW Endoskopie.tw.
24	or/1-23
25	endoscopic electrosurgical device/
26	(endoscop* adj2 (mucos* or submucos*) adj2 (dissect* or resect*) adj5 (device* or instrument* or knife or knives or tool*)).tw.
27	((ESD or EMR) adj3 (device* or instrument* or knife or knives or tool*)).tw.
28	((electrocaut* or electrosurg*) adj3 (device* or instrument* or knife or knives or tool*)).tw.
29	(endoscop* and (one adj2 knife)).tw.
30	or/25-29

31 ((bowel* or cecum or colon* or colorect* or duodenal or duodenum or epigastr* or gastric* or gastro* or intestin* or oesophag* or esophag* or rectal or rectum or stomach) adj3 (disease* or lesion* or lump* or polyp* or cancer* or neoplas* or tumo?r*)).tw,kf.

32 30 and 31

33 24 or 32

34 limit 33 to english language

35 letter.pt. or letter/

36 note.pt.

37 editorial.pt.

38 (letter or comment*).ti.

39 or/35-38

40 randomized controlled trial/ or random*.ti,ab.

41 39 not 40

42 34 not 41

43 animal/

44 nonhuman/

45 exp Animal Experiment/

46 exp Experimental Animal/

47 animal model/

48 exp Rodent/

49 (rat or rats or mouse or mice or rodent*).ti.

50 or/43-49

51 50 not human/

52 42 not 51

53 (conference abstract* or conference review or conference paper or conference proceeding).db,pt,su.

54 52 not 53

55 52 and 53

Cochrane Library

ID Search

#1 (Speedboat and (ESD or endoscop*))

#2 "creo medical"

#3 Prodigi

#4 (medtronic and (knife or knives))

#5 (("RESECT+" or FRTD) and ovesco)

#6 (Dualknife or "Dual knife")

#7 (olympus and (knife or knives))

#8 Hybridknife or (hybrid and t-type and knife)

#9 "Erbe Elektromedizin"

#10 (FlushKnife or "Flush knife")

#11 (FujiFilm and (knife or knives))

#12 "Orise proknife"

#13 ("Boston Scientific" and proknife)

#14 ("Boston Scientific" and (knife or knives))

#15 "Medi-Globe"

#16 (SBknife or ((SB or "stag beetle") next knife))

#17 "Sumitomo Bakelite"

#18 vedknife

#19 vedkang

#20 goldknife

#21 ("micro-tech" and (knife or knives))

#22 "esd knife type b"

#23 "MTW Endoskopie"

#24 {or #1-#23}

#25 MeSH descriptor: [Endoscopic Mucosal Resection] this term only

#26 MeSH descriptor: [Surgical Instruments] this term only

#27 #25 and #26

#28 (endoscop* near/2 (mucos* or submucos*) near/2 (dissect* or resect*) near/5 (device* or instrument* or knife or knives or tool*))

#29 ((ESD or EMR) near/3 (device* or instrument* or knife or knives or tool*))

#30 ((electrocaut* or electrosurg*) near/3 (device* or instrument* or knife or knives or tool*))

#31 (endoscop* and (one near/2 knife))

#32 {or #27-#31}

#33 ((bowel* or cecum or colon* or colorect* or duodenal or duodenum or epigastr* or gastric* or gastro* or intestin* or oesophag* or esophag* or rectal or rectum or stomach) near/3 (disease* or lesion* or lump* or polyp* or cancer* or neoplas* or tumor* or tumour*))

#34 #32 and #33

#35 #24 or #34

#36 ((clinicaltrials or trialsearch* or trial-registry or trials-registry or clinicalstudies or trialsregister* or trialregister* or trial-number* or studyregister* or study-register* or controlled-trials-com or current-controlled-trial or AMCTR or ANZCTR or ChiCTR* or CRiS or CTIS or CTRI* or DRKS* or EU-CTR* or EUCTR* or EUDRACT* or ICTRP or IRCT* or JAPIC* or JMCTR* or JRCT or ISRCTN* or LBCTR* or NTR* or ReBec* or REPEC* or RPCEC* or SLCTR or TCTR* or UMIN*):so or (ctgov or ictrp)):an

#37 #35 not #36

#38 "conference":pt

#39 #37 not #38

#40 #37 and #38

Epistemonikos

#1 Title/Abstract: (((electrocaut* or electrosurg* or endoscop* or EMR or ESD) and (mucosal or submucosal) and (knife or knives)) or "one knife")

AND

#2 Title/Abstract: (bowel* or cecum or colon* or colorect* or duodenal or duodenum or epigastr* or gastric* or gastro* or intestin* or oesophag* or esophag* or rectal or rectum or stomach)

OR

#3 Title/Abstract: (Speedboat or Prodigi or (("RESECT+" or FRTD) and ovesco) or Dualknife or "Dual knife" or Hybridknife or FlushKnife or "Flush knife" or "Orise proknife" or SBknife or ((SB or "stag beetle") and knife) or vedknife or goldknife)

OR

#4 Title/Abstract: (("Boston Scientific" or "creo medical" or "Erbe Elektromedizin" or Fujifilm or "Medi-Globe" or Medtronic or Olympus or "Sumitomo Bakelite" or Vedkang or “micro-tech” or "MTW Endoskopie") and (knife or knives))

INAHTA

#1 ALL: "Surgical Instruments"[mh] and "Endoscopic Mucosal Resection"[mh]

#2 ALL: (((electrocaut* or electrosurg* or endoscop* or EMR or ESD) and (mucosal or submucosal) and (knife or knives)) or "one knife")

#3 ALL: #1 or #2

#4 ALL: (bowel* or cecum or colon* or colorect* or duodenal or duodenum or epigastr* or gastric* or gastro* or intestin* or oesophag* or esophag* or rectal or rectum or stomach)

#5 ALL: #3 and #4

#6 ALL: (Speedboat or Prodigi or "RESECT+" or FRTD or Dualknife or "Dual knife" or Hybridknife or FlushKnife or "Flush knife" or "Orise proknife" or SBknife or ((SB or "stag beetle") and knife) or vedknife or goldknife)

#7 ALL: (("Boston Scientific" or creo or Erbe or Fujifilm or "Medi-Globe" or Medtronic or Olympus or ovesco or "Sumitomo Bakelite" or Vedkang or “micro-tech” or "MTW Endoskopie") and (knife or knives))

#8 #5 or #6 or #7 AND (English)[Language]

Google Scholar

((Speedboat and creo) or (Prodigi and medtronic) or "RESECT+" or (FRTD and ovesco) or (“Dualknife j” and Olympus) or ("Dual knife j" and Olympus) or (Hybridknife and erbe) or (FlushKnife and fujifilm) or "Orise proknife" or SBknife or “SB knife" or "stag beetle knife" or vedknife or goldknife)

(where there were too many results to download, the searches were restricted to the first 10 pages)

Conferences

Search Date	29/10/2025
Conferences were identified during searches in Embase and CENTRAL. Search numbers are shown in the table above and the results are included in the Eppi review. These can be filtered in or out when sifting in Eppi using the sources option in the filters.	

Search Notes:

The basic structure of the search is: named device terms or ESD device terms and gastrointestinal disease terms.

The search terms, excluding specific device terms, were designed to conduct a text-word search for ESD devices in general as a comparator to the named device terms, without being exhaustive.