



## Clinical Guideline

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Developed and endorsed by SASOG as part of the BetterGyn® programme

# HYSTERECTOMY

## Definition

Hysterectomy is a procedure where the womb is surgically removed to improve symptoms or quality of life, as an emergency life-saving procedure, to improve health by removing diseased organs or reduce risks of future disease

## Indications and alternatives

Incidence and indications differ per country, region and age group and depends upon disease profiles. Common indications in South Africa include:

- Acute life-threatening conditions including post-partum or post-abortion haemorrhage or sepsis
- Symptomatic benign conditions like leiomyoma, endometriosis, adenomyosis
- Heavy uterine bleeding or post-menopausal bleeding not responding to alternative treatment
- Pre-malignancy and malignancy of the cervix, endometrium, myometrium or adnexae
- Chronic pain, pelvic inflammatory and tubo-ovarian disease
- Symptomatic pelvic organ prolapse

Many other indications are recognized, such as developmental anomalies, inherited cancer susceptibility syndromes, menstrual hygiene in disabled women, complications of previous uterine surgery, etc.

Hormonal and medical therapy, pessaries, uterus sparing and smaller surgical interventions may be appropriate alternatives. Conservative treatments are considered, discussed and offered if judged to be appropriate and safe.

## Preparation

Pre-operative assessment is done clinically and supported by special tests per indication. It is aimed at improving diagnostic accuracy and identifying anaesthetic, operative and post-operative risks. In addition, it supports the evaluation of alternatives, choice of route, type and additional procedures. Co-morbid conditions and chronic medication use must be assessed regarding peri-operative risk and optimized.

Thorough assessment of the uterus and adnexae is essential to prevent inappropriate surgery. Cervical cancer screening with cytology or HPV-testing is paramount and invasive cancer must be excluded by colposcopy and/or biopsy if screening tests are abnormal. Assessment of the myometrium and endometrium by ultrasound and/or histology follows, including assessment of the uterine size, mobility and descent. Ovarian function and possible pathology should be considered to evaluate the possible harms and benefits of removal and risk for malignancy. Evaluation by ultrasound and biochemistry (FSH and Ca125 if indicated) is appropriate.

Bladder and bowel evaluation is done in women with symptoms, prolapse or possible malignancy.

## Procedure

The type, route of hysterectomy, fate of the adnexal structures and cervix and additional procedures must be considered and discussed in detail and depends on pre-operative assessment, expertise, equipment and the preference of both parties. Due to differences in the indications and complication profiles of the types and routes, no single approach is preferred.

**Radical hysterectomy** includes partial resection of parametrial ligaments, requires special training and is appropriate for patients with malignancy of the cervix and sometimes of the uterine body. Removal of the **vaginal cuff** with hysterectomy is only indicated if there is proven or risk for disease in the upper vagina such as in pre-malignancy, malignancy of the cervix or vagina or endometriosis.

**Total hysterectomy** with removal of the cervix is the most common type of hysterectomy and is indicated in all cases with risk for current or future malignancy, endometriosis and pelvic pain syndromes. **Sub-total hysterectomy** is done per indication and requires specific pre-and post-operative counselling.

**Open abdominal hysterectomy** is indicated in cases of uncertain diagnosis, surgery for life-threatening conditions, pelvic or uterine masses and most cases of suspected malignancy. Abdominal incision increases wound and respiratory complications, blood loss, length of hospital stay, pain and complications related to analgesia and reduced mobility.



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**Vaginal hysterectomy** generally allows shorter hospitalisation, faster recovery and reduced cost, but carries an increased risk of specific surgical complications including bladder injury and post-operative bleeding. These risks are higher among patients with a history of previous gynaecologic or obstetric surgery or disease.

**Laparoscopic hysterectomy** has similar reduced recovery times, and fewer wound complications. Combining endoscopy with the vaginal route may be appropriate for some clinical scenarios. Increased theatre time and widespread use of disposal instruments increase costs, which is offset by shorter hospitalisation and recovery. Limitations to laparoscopy include a longer learning curve, perceived medico-legal and surgical complication risk, surgeon fatigue and poor ergonomics. All these factors limit the number of patients who can benefit from minimally invasive hysterectomy.

**Robotic hysterectomy** has similar outcomes to conventional laparoscopy. Surgical risks are related to the learning curve, which is shorter with robotic surgery. Robotic surgery is therefore more appropriate for complex, challenging and longer surgical cases, where it enables open surgeons to convert more cases to minimally invasive surgery. The robotic approach is therefore especially beneficial in gynaecologic oncology, severe and deep infiltrating endometriosis and surgery that necessitates retroperitoneal dissection such as abdominal surgery for pelvic organ prolapse.

### Special precautions

Thorough pre-operative preparation is critical in mitigating medico-legal risk and includes providing information with documented discussion of the specific planned procedures, the implications, risks and alternatives, and obtaining proper informed consent from the patient. Pre- and intra-operative antibiotic cover has been shown to reduce the risk for post-operative respiratory, bladder and wound infections.

Major peri-operative risks are associated with anaemia, obesity or recent weight loss, bleeding and clotting tendency, pre-existing sepsis, diabetes, pulmonary and cardiovascular disease, and previous surgery. Screening for these risks and conditions allow accurate risk assessment, counselling and optimized care.

In women with possible malignant disease, every effort must be made to determine the diagnosis and extent of disease pre-operatively to allow proper staging surgery at an appropriate level of care and radicality.

### After-care

It is important to ensure strict and frequent monitoring of vital signs, intake and output during the first post-operative hours, when continued bleeding or hypoventilation due to analgesia or anaesthetic drug use can occur. Determining the haemoglobin once or sequentially during the first and following post-operative days is prudent. Careful analgesia with a combination of local anaesthetics, paracetamol, limited opioids, and non-steroidal anti-inflammatory drugs improves patient experience and healing. Attention should be paid to risks of poor kidney perfusion, over dosage, gastritis, bleeding tendencies, allergies, induced opioid dependence and drug interactions.

Pharmacologic prophylaxis using low molecular weight heparin subcutaneous is the standard of care in patients at risk for clotting and without significant bleeding risk. This is usually initiated between 8 and 24 hours post-operatively and continued for the period of hospital stay or up to six weeks. Risk factors for clotting are well known, and include particularly history, obesity, age, immobility and malignancy. The risks for continued bleeding or secondary bleeding vs. that of venous thrombosis should be assessed and weighed in each patient and anti-coagulation must be individualised. Intra-operative and early post-operative neuromuscular electrostimulation or mechanical thromboprophylaxis (DVT socks and intermittent pressure calve pumps) has the benefit of not having any bleeding risks. Consideration should be given to reduced dosage, alternative methods, or late initiation of pharmacological anti-coagulation in patients with an increased risk of bleeding. This includes patients with high volume blood loss, pre-operative bleeding, large raw surgical area, high risk surgery, anaemia and thrombocytopenia, uraemia, low body weight, use of herbal or pharmacological drugs that inhibit clotting, history of bleeding with previous surgery, etc.

In the stable low risk patient, medication can usually be changed to oral after 24hours, and early oral intake, removal of the urinary catheter and mobilization out of bed is usually beneficial following the principles of "ERAS". Discharge to home should be dictated by surgery and patient factors, including home situation, risks and recovery. It is important



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to provide patients with clear instructions about bowel function, wound care, their response to complications, and medication.

### Complications

Depending on the definitions used, minor complications are expected in about 20% and major in 5%, depending on the patient population and type of surgery. Common complications of hysterectomy are bladder and wound infections, vault haematoma, lung conditions, and ileus. Injury to bladder, ureters and bowel are all uncommon major complications. Important measures to prevent all of these start pre- and intra-operatively, but not all complications can be prevented.

The early recognition, assessment and management of surgical complications always remain the responsibility of the primary surgeon and are critical to clinical outcomes. For abdominal and pulmonary compromise, important investigations include chest and abdominal imaging with X-ray, ultrasound and CT scan. Include assessment of liver and kidney functions, blood count, saturation, measures of inflammation (CRP and PCT) gall bladder, and paralytic or obstructive ileus.

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Guidelines are works in progress. The authors welcome any contributions which should be sent to the SASOG secretariat.  
Last update 2023.

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