

A systematic approach to colposcopic examination

A colposcopic examination may be easy or difficult. It will be easy for the colposcopist who is properly trained, is well equipped, and has a comfortable, relaxed patient. Without these ingredients, the examination will be difficult.

Colposcopy performs less well as a screening procedure than when it is used to manage women who are screen-positive, are symptomatic, or have signs suggestive of disease. Recognizing high-grade CIN or HSIL is usually straightforward and unchallenging in the presence of a high-grade smear. Recognizing a high-grade abnormality when the screening test suggests a mild abnormality is more difficult but is reliable if the colposcopic examination is performed systematically as part of a quality-assured service (see Chapter 1).

Also, optimal cervical conditions will make the examination easier and less likely to be inadequate. An uninfected, non-pregnant, and well-estrogenized cervix is ideal, but, of course, this is not always the case. However, colposcopy is rarely urgent, and treating infection or achieving estrogenization of the cervical epithelium will sometimes tip the balance between an inadequate and an adequate examination.

Finally, it is so easy to have a “quick look” at the cervix with a colposcope. This is a mistake. A structured examination and the documentation of specific findings, particularly the TZ type (see Annex 1) and the Swede score (see Annex 4), will result in the best care.

This chapter describes the preparation required and the steps involved in performing colposcopy competently.

6.1 Colposcopy training needs

Colposcopy expertise is attained by proper training and continuing case experience. This manual is a reference manual and an introduction to colposcopy rather than a comprehensive training course. Training in colposcopy involves several components:

1. Theoretical knowledge
 - a. This may be acquired at home, online, or by reading and attending a theoretical course or courses.
2. Image recognition skills
 - a. These may be acquired at home, online, or by attending a busy colposcopy clinic.
3. Case management skills
 - a. These may be acquired online using video case material or by attending a busy colposcopy clinic.

4. Clinic and colposcopic in vivo experience
 - a. Requires the trainee to attend a colposcopy trainer in a clinic
 - b. Seeing and managing ≥ 50 cases under supervision
 - c. Seeing and managing ≥ 100 cases unsupervised but submitted to a preceptor for assessment.
5. Taking an Objective Structured Clinical Examination (OSCE)
6. Accreditation
7. Case experience and audit
8. Reaccreditation every few years.

IFCPC, in collaboration with the Screening Group of the International Agency for Research on Cancer (IARC), runs a distance learning course that offers training in colposcopy without the need to attend a colposcopy clinic for a long period of time.

Components 1 to 3 listed above may be acquired online. The clinic and colposcopic in vivo teaching may take place ad hoc during the 1-year course at a regional or local colposcopy clinic (<http://www.ifcpc.org/en/>). Once a colposcopist is trained, it is important to continue to see a sufficient number of cases to maintain expertise.

Expert colposcopy is not compatible with occasional practice.

6.2 Equipment check

The time to check the availability and functionality of equipment is just before each clinic session and not while examining a patient.

6.2.1 Setting up the colposcope to achieve binocular focus

If other colleagues also use the colposcope, it is prudent to set up the colposcope eyepieces before the first patient arrives. A few simple steps will achieve this.

1. Use a small coin or pencil placed on the examination couch as the object of focus.
2. Adjust the eyepieces to your own interpupillary distance. Start by placing the two eyepieces far apart. Then, while looking down both eyepieces simultaneously at the coin on the couch, move the eyepieces closer together until the two images become one (Fig. 6.1).
3. If a (still or video) camera is attached, adjust the coarse focus and then the fine focus so that the image on the monitor is exactly focused. Fix the colposcope in position so that it becomes immobile, by using the tension knobs on the supporting arms (Fig. 5.2).
4. Determine which eyepiece is in line with the camera (the primary eyepiece).
5. Adjust the primary eyepiece so that the image on the monitor and that seen through the primary eyepiece are equally and correctly focused.
6. Adjust the secondary eyepiece so that it is also finely focused.

This will mean that each eye and the monitor are in harmonious focus when examining the coin. The colposcope is now ready for use with a patient.

6.2.2 Colposcope ergonomics

After learning how to set up the colposcope eyepieces, the next step is to familiarize yourself with its ergonomics. Take time to sit down with the colposcope and examine an orange, a grape, or an almond as well as a host of other inanimate objects. Loosen the tension knobs, and move the colposcope head into and out of position. The mechanism varies from one colposcope to another. Examine your friend's fingernails, and remove splinters under colposcopic guidance. Learn how to change the

colposcope's light bulb, and become thoroughly familiar with the light connections, the green filter switch, the magnification mechanism, the camera head orientation, and the coarse and fine focusing. In this way, the colposcope will become an extension of your eyes, and you will become comfortable with the instrument.

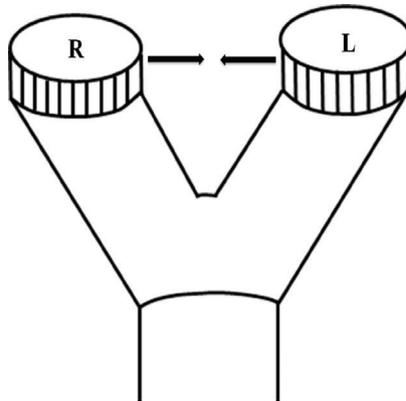
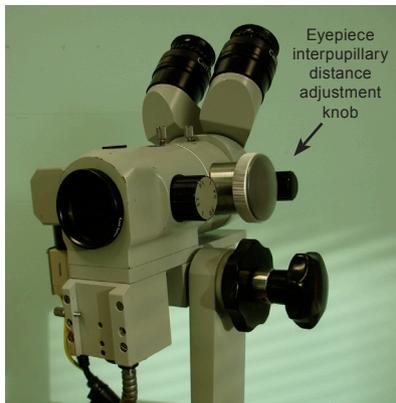
6.3 Biopsy and electrosurgical excision

For biopsy and electrosurgical excision, as with most surgical procedures, learning the technique in a simulated manner is preferable to learning on a patient. The consistency of meat is relatively similar to that of the cervix, and meat has a similar feel to the cervix when taking a biopsy. The trainee should become expert at using the biopsy forceps with a piece of meat (typically ox tongue or chicken breast) at the end of a speculum on the gynaecology couch before approaching a patient. Also, there are several plastic pelvic anatomical models available that allow the trainee to simulate a small loop diagnostic biopsy or a LLETZ/LEEP procedure.

6.4 Counselling

The need for counselling of patients before medical or surgical intervention is, of course, obvious. In repetitive low-risk situations, it is sometimes overlooked or considered unnecessary. This is a mistake. A woman who has been properly counselled is informed, relaxed, and confident in her colposcopist. A woman who has not been properly counselled and is uninformed is more likely to be anxious, scared, and ultimately dissatisfied. Complications from any intervention do occur, albeit infrequently at colposcopy and treatment of CIN. A complication that occurs as a result of an intervention

Fig. 6.1. Adjusting the colposcope eyepieces to your own interpupillary distance. Start by placing the two eyepieces far apart. Then, while looking down both eyepieces simultaneously, move the eyepieces closer together until the two images become one. The colposcope shown has a control knob that adjusts the interpupillary distance.



for cancer or a serious medical condition is one thing; a complication in a healthy and asymptomatic woman is quite another. Counselling takes only a few minutes but rewards both the colposcopist and the patient. Most colposcopy services have written information covering screening, investigation, and treatment. Written information is important but does not replace the need for face-to-face, open, and reactive counselling by the colposcopist who is about to perform the examination. Delegating this task to someone else is improper.

6.5 Consent

Many centres rely on verbal consent for the colposcopic examination and biopsy, as well as for treatment, where necessary. Other centres insist on written consent after providing extensive printed information. Different medicolegal and sociocultural settings require different levels of medicolegal protection.

6.6 Privacy and support

It is difficult for those who have not undergone a gynaecological or colposcopic examination to fully

appreciate the relative indignity of the experience and the potential for distress. The very least that colposcopists can do is to try to mitigate the circumstances by setting in place those arrangements that they would expect for themselves if they were patients. This includes privacy while recording personal information and a private place to undress. Most patients prefer to have the fewest people necessary present during the examination. This usually means the colposcopist, an attendant, and, often, a trainee. The colposcopist should introduce both the attendant and the trainee. Few patients will object to the presence of a trainee if the trainee is appropriately introduced. Finally, the examination room should be locked and the patient made aware of this.

The stress of having an abnormal screening test and a colposcopic examination is significant and has been reported as being equivalent to that of major surgery. A professional, sympathetic attendant is hugely reassuring to most patients, and the attendant can usually fulfil this task better than a friend or relative. Occasionally, a patient requests the presence of a friend or relative,

and this does not usually present a problem.

6.7 The colposcopy nurse attendant

A professional attendant who can both assist the colposcopist and provide support to the patient is worth their weight in gold. The role of the attendant is sometimes underappreciated. The position should be highly valued, remunerated, and protected. The attendant will support the patient during the examination, ensure easy access to and availability of equipment during the examination, and aid with camera adjustment and recordings, filling in forms, and processing specimens. Without a dedicated attendant, the colposcopic examination will not be complete, easy, or rewarding. A properly trained attendant may wish to become a colposcopist later in their career and is likely to make an excellent colposcopist.

6.8 The colposcopic examination

Being prepared is key to a smooth and rewarding colposcopic examination. Have the relevant equipment ready, including treatment equipment, if necessary and appropriate at the time. The woman should be relaxed and fully informed. The steps involved in performing colposcopy competently are the following.

6.8.1 Passing a speculum

First, have the woman adopt the lithotomy position on a gynaecological couch. If the couch has a cut-out just under the buttocks, this is ideal. If not, the woman can move down the couch so that her buttocks are just over the end of the couch. It is almost impossible to describe how best to pass a speculum without doing an in vivo demonstration or using a pelvic

model. The examiner has to be able to pass the speculum comfortably and position it so that the cervix is fully visible in a plane perpendicular to the colposcopic line of vision. Most practitioners use a metal bivalve speculum (Cusco speculum, Graves speculum, or equivalent). A little gel lubricant or warm water should allow smooth passage through the introitus. The speculum should have a suction tube on the underside of its anterior blade (Fig. 5.11a) so that the smoke plume may be evacuated immediately during electrosurgical biopsy or LLETZ/LEEP. If the woman has a particularly patulous vagina, it may be necessary to surround the speculum with a condom (Fig. 5.11b) or the finger of a large glove (with its end cut off) so that the lateral walls are held out of the line of vision. Lateral vaginal wall retractors are rarely necessary.

6.8.2 Initial assessment

Assess the state of the cervix at the time of examination.

1. Assess the hormonal status.
 - a. Is the epithelium well-estrogenized?
 - b. Are pregnancy changes present?
 - c. In postmenopausal women, is the degree of atrophic epithelial change sufficient to consider prescribing topical estrogen before colposcopic assessment?
2. Determine whether there is inflammation.
 - a. Are signs of infection (viral, fungal, or bacterial) apparent, and are investigation and treatment prudent before colposcopic assessment?
3. Confirm full visibility of the entire cervix and upper vagina under colposcopic view.
4. Determine whether there is evidence of previous treatment, or any degree of epithelial fibrosis.

6.8.3 Low-power view

Having satisfied yourself that it is possible to adequately examine the cervix, apply saline and wash away as much mucus as possible without causing epithelial bleeding, in other words gently but thoroughly. It is not always necessary to use the green filter, but it does offer the best way of examining fine vessel patterns. Using the green filter takes away the background redness, and the vessels stand out as black lines. Examining the TZ with the green filter will often help the novice and is to be recommended for the first few hundred cases. Examination with saline and the green filter needs to take place before the application of acetic acid or iodine.

The entire cervix should be examined at low-power magnification. The type of TZ is usually apparent at this stage (see Annex 1). If the TZ is type 1, then the SCJ will be visible on the ectocervix. If not, it will be necessary to use an endocervical forceps to establish whether the TZ is of type 2 or type 3. The application of acetic acid (applied later) sometimes helps to exaggerate the SCJ.

6.8.4 Epithelial examination

The major part of a colposcopic examination of the cervix will be low- and high-power examination of the TZ epithelium after the application of acetic acid (3% or 5%). It may be applied with a spray bottle or with a soaked cotton swab. Either way, it should be applied as gently as possible, so that all the mucus has been wiped away and the acetic acid can affect the epithelium. If the mucus has not all been wiped away, the acetic acid will not reach the epithelium, thereby giving a false impression of non-uptake. Also, if a spray bottle is used, be aware of possible

splashback to the examiner's eyes, which may be a risk with HIV-infected patients.

1. Apply acetic acid.
 - a. Wait 1 minute.
 - b. Examine the entire cervix and upper vaginal epithelium at low-power magnification.
 - c. Again, confirm visibility of the entire SCJ (the upper limit of the TZ) and therefore determine the TZ type.
 - d. Examine the entire TZ at high power.
 - e. Determine the worst area(s) of abnormality and assess the need for biopsy.
 - f. Calculate the Swede score.
 - g. Take a biopsy (or biopsies), if appropriate.
2. Apply iodine.
 - a. Attempt to determine the outer limit of the TZ and document the size of the TZ.
 - b. Examine the extent of the iodine-negative area. Is the TZ congenital or original in distribution?
3. Perform treatment where appropriate (see Chapter 11).

Immediately after the examination, document the findings using a standard records form (see Annex 2). It should include the adequacy of the examination (initial assessment above), the TZ type and size, the Swede score, and a management plan. A variety of icons for image characteristics are used (e.g. Fig. 6.2). Video and/or still images are very valuable as an educational tool and as a means of explaining the findings to the patient, and also to compare the findings over time, whether or not treatment has been performed.

Finally, after the patient has changed into her clothes, the findings should be explained and a management plan outlined.

Fig. 6.2. Diagrammatic representation of some image characteristics seen at colposcopy.

	Columnar epithelium		Mosaic – fine
	Dense acetowhite epithelium – mild		Mosaic – coarse
	Dense acetowhite epithelium – dense		Atypical vessels
	Punctation – fine		"Character writing" atypical vessels
	Punctation – coarse		Pollarded vessels

Key points

- It is relatively easy to perform a comfortable and competent colposcopic examination, providing that circumstances are optimized.
- Performing the ideal colposcopy requires a relaxed and informed patient, a trained colposcopist, a nurse assistant, and a set of appropriate equipment.
- Colposcopic examination should be performed in a systematic and structured way, which documents the adequacy of the examination, the type and size of the transformation zone, and the degree of abnormality as reflected in an objective diagnostic scoring system, for example the Swede score.