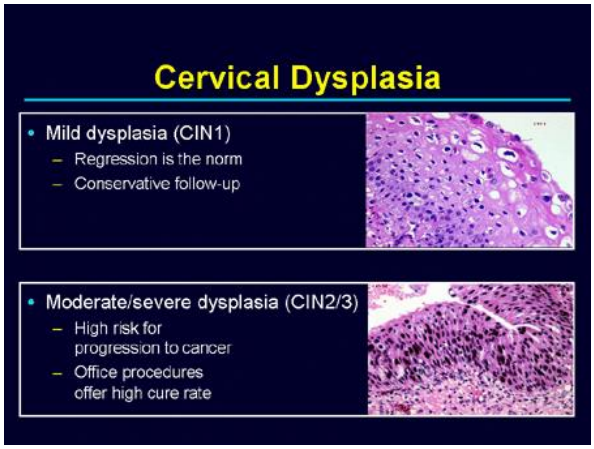
Cancer Association of South Africa (CANSA)

CANSA Fact Sheet on Cervical Dysplasia

Introduction

Dysplasia is an ambiguous term used in pathology to refer to an abnormality of development or an epithelial anomaly of growth and differentiation (epithelial dysplasia).



[Picture Credit: Cervical Dysplasia]

Epithelial dysplasia consists of an expansion of immature cells, with a corresponding decrease in the number and location of mature cells. Dysplasia is often indicative of an early neoplastic (cancerous) process.

Dysplasia, in which cell maturation and differentiation are delayed, can be contrasted with metaplasia, in which cells of one mature differentiated type are replaced by cells of another mature, differentiated type.

Cervical Dysplasia

Cervical dysplasia is not cancer. The term indicates that abnormal cells are found on the surface of the cervix.

Cervical dysplasia can range from mild to severe, depending on the appearance of the abnormal cells. Dysplasia could go away on its own or, sometimes, it could develop into cancer. Another term for cervical dysplasia is cervical intraepithelial neoplasia.

[Picture Credit: Cervical Dysplasia 2]

After an abnormality is detected on a Pap smear, the doctor may recommend more tests, including:

- A Human Papilloma Virus (HPV) test

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- Colposcopy.

Cooper, D.B. & McCathran, C.E. 2022.
"The pap smear is responsible for decreasing the incidence of and mortality rates from cervical cancer. The Papanicolaou (Pap) smear is a collection of cells from the squamocolumnar junction of the cervix where the columnar epithelium is juxtaposed to the smooth squamous epithelium. In this area, squamous metaplasia is causing squamous cells to replace columnar cells. This cell growth and change can allow the entrance of human papillomavirus (HPV), the cause of more than 90% of cervical cancer. The Pap smear is a sample of cells from this area to screen a patient for abnormalities such as cervical dysplasia."

ICD-10 Code for Cervical Dysplasia - Unspecified
The ICD-10 Code for Cervical Dysplasia unspecified, is N87.90.

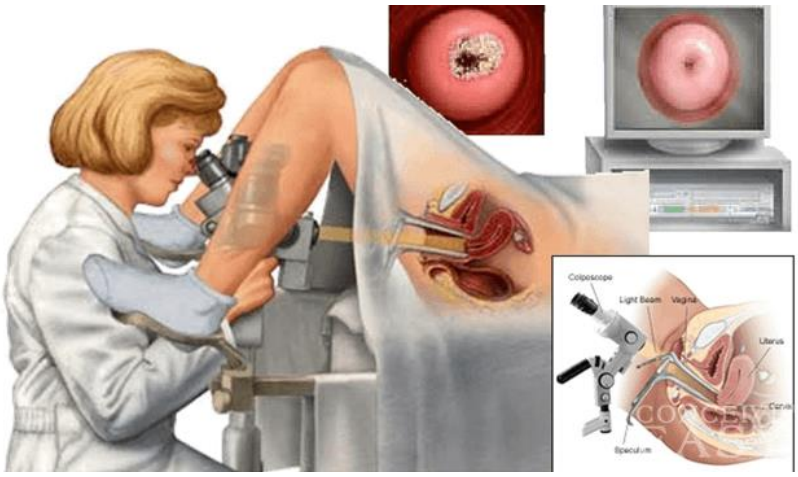
HPV Testing Compared to Routine Cytology in Cervical Screening
The National Screening Committee recomm3ended that HPV testing should replace cytology in primary cervical screening.

Timoney, M.T., Atrio, J.M., McGowan, J.P., Fine, S.M., Vail, R., Merrick, S.T., Radix, A., Hoffmann, C.J. & Gonzalez, C.J. 2022.
"This guideline on cervical cancer screening for adults with HIV was developed by the New York State Department of Health (NYSDOH) AIDS Institute (AI) to inform primary care providers and other practitioners in NYS about screening for cervical dysplasia in patients with HIV. The goal of cervical screening is to identify and treat precancerous lesions to prevent cervical cancer. Comprehensive primary care for adults with HIV includes access to antiretroviral therapy (ART) and screening, diagnosis, and treatment of gynecologic comorbidities, especially cervical dysplasia and cancer. Screening for cervical and anogenital tract cancer is appropriate for all adult patients; this guideline provides standards of care for cervical, vaginal, and genital screening for patients with HIV. Inclusive and culturally sensitive healthcare that acknowledges the needs of transgender, transmasculine, transfeminine, and nonbinary patients should include an anatomical inventory that identifies which organs are present and absent to determine and meet the screening and healthcare needs of each patient regardless of their gender expression."

Colposcopy
Colposcopy is a medical diagnostic procedure to examine an illuminated, magnified view of the cervix and the tissues of the vagina and vulva. It is done using a colposcope, which provides an enlarged view of the areas, allowing the colposcopist (the person doing the examination) to visually distinguish normal from abnormal appearing tissue and take directed biopsies (small tissue samples) for further pathological examination. The main goal of colposcopy is to prevent cervical cancer by detecting precancerous lesions early and treating them.

Hariprasad, R., Mittal, S. & Basu, P. 2022.
"Cytology identifies the women who are at higher risk of harboring high-grade cervical premalignant lesions or invasive cancer. However, a diagnostic test such as colposcopy is crucial for women with abnormal cytology for localization of the abnormality, confirmation of diagnosis, and appropriate management. To standardize this subjective technique and to minimize the interobserver variations, Swede scoring system was introduced. The revised colposcopic nomenclature of the International Federation of Cervical Pathology and Colposcopy in 2011 included various normal and abnormal colposcopic findings and gives a description of colposcopic features which improves its accuracy over the colposcopic indices. There is consensus agreement that cytology indicative of high-grade lesions (ASC-H and HSIL in the Bethesda system) should engender immediate referral for colposcopy and biopsy. The management of women who have equivocal or borderline cytology of low-grade abnormalities (ASCUS/LSIL) is still under deliberation. It is generally agreed to have an HPV triage for women with equivocal cytology. Based on the latest recommendations, the current chapter provides an extensive overview of the role of colposcopy in the management of women with various abnormalities reported on Pap smear."

[Picture Credit: Colposcope]



Causes of Cervical Dysplasia
In many women with cervical dysplasia, Human Papilloma Virus (HPV) is found in cervical cells. HPV infection is common in women and men, and most often affects sexually active women under age 20.

Risk Factors for Cervical Dysplasia
There are several risk factors for cervical dysplasia, some of them directly related to the risk of HPV:

- having an illness that suppresses the immune system or being on immunosuppressant drugs
- having multiple sexual partners
- giving birth before the age of 16
- having sex before the age of 18
- smoking cigarettes
- having sex with an uncircumcised man
- Human papillomavirus (HPV) infection
- Genital warts
- History of one or more sexually transmitted diseases, such as genital herpes or HIV
- Having suppressed immune system, such as from HIV or chemotherapy to treat cancer
- Using birth control pills for longer than 5 years

- Being born to a mother who took diethylstilbestrol (DES) to become pregnant or to sustain pregnancy. This drug was used many years ago to promote pregnancy but it is no longer used for these purposes.
- Low levels of folate (vitamin B9) in red blood cells
- Dietary deficiencies in vitamin A, beta-carotene, selenium, vitamin E, and vitamin C (scientific data is not entirely conclusive at this time; see section on Nutrition and Dietary Supplements)

If one is sexually active, a condom is said to reduce the risk of getting HPV, but the virus can still live on the skin surrounding the genitals not covered by the condom.

Classification of Cervical Dysplasia

ASC-US

This abbreviation stands for atypical squamous cells of undetermined significance. The word "squamous" describes the thin, flat cells that lie on the surface of the cervix. One of two choices are added at the end of ASC: ASC-US, which means undetermined significance, or ASC-H, which means cannot exclude HSIL (see below).

LSIL

This abbreviation stands for low-grade squamous intraepithelial lesion. This means changes characteristic of mild dysplasia are observed in the cervical cells.

HSIL

This abbreviation stands for high-grade squamous intraepithelial lesion. And refers to the fact that cells with a severe degree of dysplasia are seen.

CIN 1

Refers to the presence of dysplasia confined to the basal third of the cervical lining, or epithelium (formerly called mild dysplasia). This is considered to be a low-grade lesion.

CIN 2

Is considered to be a high-grade lesion. It refers to dysplastic cellular changes confined to the basal two-thirds of the lining tissue (formerly called moderate dysplasia).

CIN 3

Is also a high grade lesion. It refers to precancerous changes in the cells encompassing greater than two-thirds of the cervical lining thickness, including full-thickness lesions that were formerly referred to as severe dysplasia and carcinoma in situ.

Treatment of Cervical Dysplasia

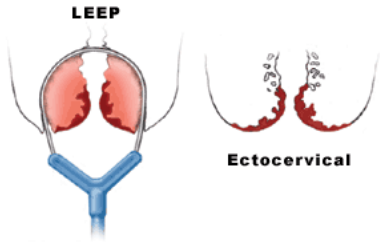
Hecken, J.M., Rezniczek, G.A. & Tempfer, C.B. 2022.

"Cervical dysplasia is a common precancerous lesion affecting 1% to 2% of women worldwide. Significant progress in the diagnosis and treatment of cervical dysplasia have been made in the last decade. We performed a systematic literature search of the databases PubMed and Cochrane Central Register of Controlled Trials to identify controlled clinical trials reporting on the efficacy and safety of

diagnostic and therapeutic interventions for cervical dysplasia. Data were analyzed according to PRISMA guidelines. In total, 33 studies reporting on 5935 women were identified. We recommend intravenous or intracervical lidocaine for pain reduction during colposcopically-directed cervical biopsies but not topical lidocaine, music, or video colposcopy. Monsel's solution might be used to control bleeding after cervical biopsies. The acetic acid test should be scored 1 min after the application of acetic acid and should be followed by Lugol's iodine test for an optimal yield of LSIL/HSIL. LEEP/LLETZ remains the standard and techniques such as SWETZ, C-LETZ, and TCBEE are not superior. LEEP/LLETZ should be performed under local anesthesia and with direct colposcopic vision. Cryotherapy and thermoablation might be used in women with LSIL, especially in women with HIV infection, but LEEP/LLETZ remains the standard for HSIL. Topical imiquimod remains an experimental procedure. In conclusion, significant progress has been made in the last decade regarding both diagnostic interventions as well as therapeutic interventions for women with cervical dysplasia. Based on >30 controlled clinical trials, we were able to formulate specific and evidence-based recommendations."

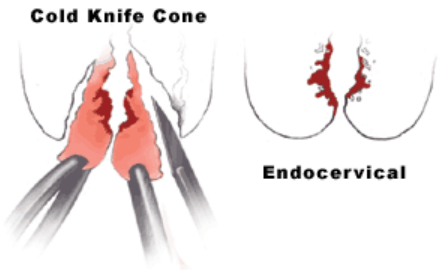
Treatment of Cervical Dysplasia may include:

Surgical Treatments - The two most common methods of removing cervical lesions are by procedures called a **LEEP** or **Cold Knife Cone**.



[Picture Credit: LEEP]

Cold Knife Conisation is performed in the operating room, using a scalpel. The patient will be sedated using anaesthesia. She will lie on a table and place her feet in stirrups to position the pelvis for examination. An instrument called a speculum will be inserted into the vagina to hold the vaginal walls open so the physician can view the inside of the vaginal walls and the cervix.



[Picture Credit: Cold Knife Cone]

Hysterectomy is the surgical removal of the uterus. Hysterectomy may be used if dysplasia recurs after any of the other treatment procedures.

Incidence of Cervical Cancer in South Africa

According to the outdated National Cancer Registry (2019), known for the under reporting of cancer statistics, the following number of cervical cancer cases was histologically diagnosed in South Africa during 2019:

Group - Females 2019	Actual No of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All females	6 945	1:42	15,85%
Asian females	83	1:118	6,02%
Black females	5 932	1:36	30,47%
Coloured females	397	1:73	8,22%
White females	533	1:64	2,99%

The frequency of histologically diagnosed cases of cervical cancer in South Africa for 2019 was as follows (National Cancer Registry, 2019):

Group - Females 2019	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All females	2	121	1 245	2 059	1 648	1 169	495	206
Asian females	0	3	16	21	19	14	7	3
Black females	2	90	1 068	1 765	1 385	1 013	430	179
Coloured females	0	13	61	112	115	64	22	10
White females	0	15	100	161	129	78	36	14

N.B. In the event that the totals in any of the above tables do not tally, this may be the result of uncertainties as to the age, race or sex of the individual. The totals for 'all males' and 'all females', however, always reflect the correct totals.

About Clinical Trials

Clinical trials are research studies that involve people. They are conducted under controlled conditions. Only about 10% of all drugs started in human clinical trials become an approved drug.

Clinical trials include:

- Trials to test effectiveness of new treatments
- Trials to test new ways of using current treatments
- Tests new interventions that may lower the risk of developing certain types of cancers
- Tests to find new ways of screening for cancer

The South African National Clinical Trials Register provides the public with updated information on clinical trials on human participants being conducted in South Africa. The Register provides information on the purpose of the clinical trial; who can participate, where the trial is located, and contact details.

For additional information, please visit: https://pactr.samrc.ac.za/

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Sources and References

Aydogan, K.D., Baser, E.D.C.M, Onat, T., Sahin, S. & Yalvac, E.S. 2021. Concordance of HPV, conventional smear, colposcopy, and conization results in cervical dysplasia. *Diagn Cytopathol*. 2021 Jan;49(1):132-139.

Bhatla, N. & Singhal, S. 2020. Primary HPV screening for cervical cancer. *Best Pract Res Clin Obstet Gynaecol*. 2020 May;65:98-108.

Bergergren, L., Lillsunde-Larsson, G., Helenius, G. & Karisson, M.G. 2019. HPV-based screening for cervical cancer among women 55-59 years of age. *PLoS One*. 2019 Jun 14;14(6):e0217108. doi: 10.1371/journal.pone.0217108. eCollection 2019.

Bruni, L., Albero, G., Serrano, B., Mena, M., Gómez, D., Muñoz, J., Bosch, F.X.& de Sanjosé, S. 2019. ICO/IARC Information Centre on HPV and Cancer (*HPV Information Centre*). Human Papillomavirus and Related Diseases in South Africa. Summary Report 17 June 2019. [Date Accessed]

Cervical Dysplasia
http://www.medscape.org/viewarticle/508691_1

Cervical Dysplasia 2
http://www.southbaytotalhealth.com/Cervical.htm

Cohen, O., Schejter, E., Agizim, R., Schonman, R., Chodick, G., Fishman, A. & Hershko Klement, A. 2019. Postcoital bleeding is a predictor for cervical dysplasia. *PLoS One*. 2019 May 23;14(5):e0217396.
doi: 10.1371/journal.pone.0217396. eCollection 2019.

Cold Knife Cone
https://www.hopkinsmedicine.org/kimmel_cancer_center/centers/cervical_dysplasia/diagnosis_and_treatment/treatment.html

Colposcope
http://www.conceiveeasy.com/get-pregnant/can-a-colposcopy-interfere-with-my-fertility/

Cooper, D.B. & McCathran, C.E. 2022. Cervical dysplasia. ***In:*** StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan. 2022 Jul 12.

Classification of Cervical Dysplasia
https://my.clevelandclinic.org/health/diseases/15678-cervical-intraepithelial-neoplasia-cin

https://www.mountsinai.org/health-library/diseases-conditions/cervical-dysplasia
https://www.hopkinsmedicine.org/kimmel_cancer_center/cancers_we_treat/cervical_dysplasia/diagnosis_and_treatment/treatment.html

Di Donato, V., Caruso, G., Petrillo, M., Kontopantelis, E., Palaia, I., Perniola, G., Plotti, F., Angioli, R., Muzii, L., Benedetti Panici, P. & Bogani, G. 2021. Adjuvant HPV Vaccination to Prevent Recurrent Cervical Dysplasia after Surgical Treatment: A Meta-Analysis. *Vaccines (Basel)*. 2021 Apr 21;9(5):410.

Fowler, J.R., Maani, E.V. & Jack, B.W. 2021. Cervical Cancer. ***In***: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan. 2021 Jul 7.

Gilham, C., Sargent, A., Kitchener, H.C. & Peto, J. 2019. HPV testing compared with routine cytology in cervical screening: long-term follow-up of ARTISTIC RCT. *Health Technol Assess*. 2019 Jun;23(28):1-44. doi: 10.3310/hta23280.

Hariprasad, R., Mittal, S. & Basu, P. 2022. Role of colposcopy in the management of women with abnormal cytology. *Cytojournal*. 2022 Jun 14;19:40.

Healthline
http://www.healthline.com/health/cervical-dysplasia#RiskFactors3

Health Communities
http://www.healthcommunities.com/cervical-dysplasia/risk-factors.shtml

Hecken, J.M., Rezniczek, G.A. & Tempfer, C.B. 2022. Innovative Diagnostic and Therapeutic Interventions in Cervical Dysplasia: A Systematic Review of Controlled Trials. *Cancers (Basel)*. 2022 May 27;14(11):2670.

Johns Hopkins Medicine
http://www.hopkinsmedicine.org/kimmel_cancer_center/centers/cervical_dysplasia/treatment.htm

LEEP
https://www.hopkinsmedicine.org/kimmel_cancer_center/centers/cervical_dysplasia/diagnosis_and_treatment/treatment.html

Mayo Clinic
http://www.mayoclinic.org/diseases-conditions/cervical-cancer/expert-answers/cervical-dysplasia/faq-20058142

MedicineNet.com
http://www.medicinenet.com/cervical_dysplasia/page4.htm#how_is_cervical_dysplasia_classified
http://www.medicinenet.com/cervical_dysplasia/page7.htm

Mutombo, A.B., Simoens, C., Tozin, R., Bogers, J., Van Geertruyden, J.P. &, Jacquemyn, Y. 1029. Efficacy of commercially available biological agents for the topical treatment of cervical intraepithelial neoplasia: a systematic review. *Syst Rev*. 2019 Jun 7;8(1):132. doi: 10.1186/s13643-019-1050-4.

National Cancer Institute
http://www.cancer.gov/about-cancer/treatment/clinical-trials/what-are-trials

Ramírez SI, Lutzkanin A. 2021. Management of Cervical Dysplasia Using Office Loop Electrosurgical Excision Procedure. *Prim Care*. 2021 Dec;48(4):583-595.

Timoney, M.T., Atrio, J.M., McGowan, J.P., Fine, S.M., Vail, R., Merrick, S.T., Radix, A., Hoffmann, C.J. & Gonzalez, C.J. 2022. Screening for cervical dysplasia and cancer in adults with HIV [Internet].

University of Maryland Medical Center
http://umm.edu/health/medical/altmed/condition/cervical-dysplasia

WebMD
http://www.webmd.com/cancer/cervical-cancer/cervical-dysplasia-symptoms-causes-treatments#1
http://www.webmd.com/cancer/cervical-cancer/cervical-dysplasia-symptoms-causes-treatments?page=2

Wikipedia
http://en.wikipedia.org/wiki/Colposcopy