

# Understanding Cervical Dysplasia: A Holistic Treatment Protocol

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www.katolenyardley.com

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The fear of cervical dysplasia is associated with its potential to progress to cervical cancer. Instead of viewing this condition as an ominous threat, it is more empowering to gain an understanding of this condition, while learning tools to strengthen one's body and promote healing. Through becoming familiar with the risk factors associated with cervical dysplasia, we can understand why some women diagnosed with cervical dysplasia have abnormal cells that return to a normal state over a period of months, while other women have abnormal cells that progress to 'carcinoma in situ', or invasive cervical cancer.

According to the Canadian Medical Association Journal, every year an estimated 371 000 new cases of invasive cervical cancer occur worldwide. In the year 2000, nearly 1500 new cases of cervical cancer were diagnosed in Canada and an estimated 430 Canadian women died from the disease<sup>1</sup>. In 1998 it was estimated that 13 700 cases of cervical cancer and 4 900 deaths due to cervical cancer occurred in the United States<sup>2</sup>. Cervical cancer is the eleventh most frequently diagnosed cancer among Canadian women, and the second most common cancer in women worldwide, yet it is also one of the most preventable<sup>3</sup>.

The cervix is located in the lower narrowest part of the uterus and is shaped much like a donut, forming a canal that opens into the vagina and leads outside of the body. The cervix is composed of mucous membranes, connective tissue and two types of epithelial cells: squamous and columnar.

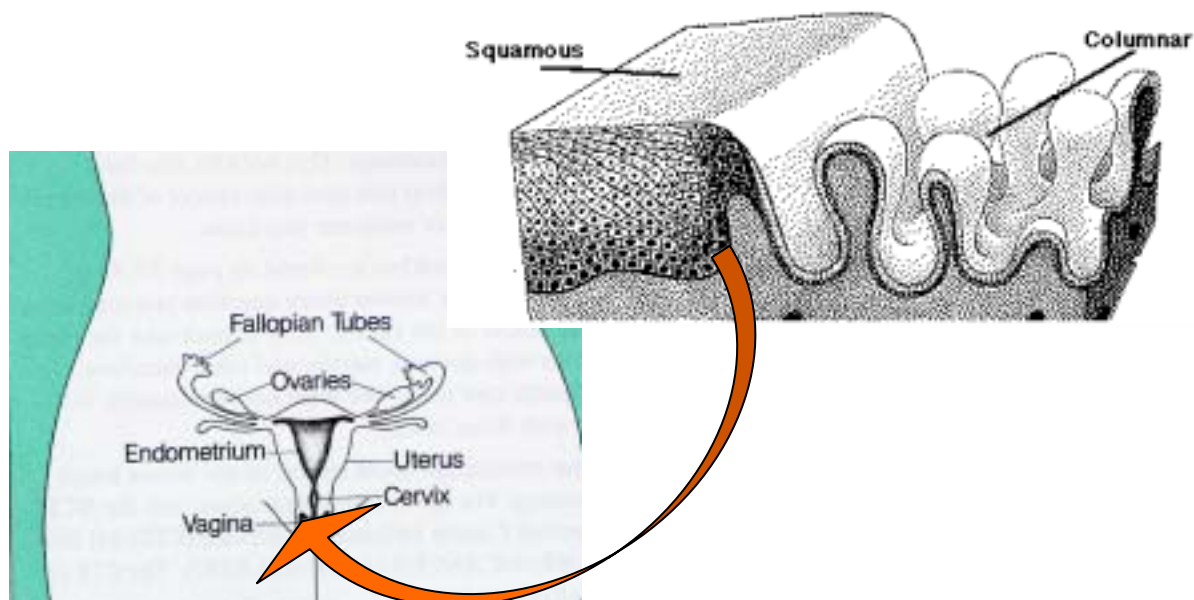


Figure 1: Squamous Columnar Junction Adapted from: Benjamin I, Rubin S, Rubin M, Division of Gynecologic Oncology, University of Pennsylvania Cancer Center 1994.

Squamous cells are thin flat cells lining the outside of the cervix and vagina and are also found lining the respiratory and digestive passages. Columnar cells are typically found high up in the uterus, lining the cervical canal and leading from the inside opening of the cervix into the uterus. The point where these two cells meet is called the **squamo columnar junction**. Cervical dysplasia and cervical cancer is thought to arise at this junction and it is this area where pap tests take cell samples for viewing. Depending on general health and hormonal fluctuations such as puberty, pregnancy and the use of oral contraceptives, the squamo-columnar junction may shift position in relation to the vagina and the uterus, unfolding lower into the vagina and making the cell junction more susceptible to abnormalities and infections<sup>4</sup>.

**Cervical cells can change position with normal hormonal fluctuations:**

As a result of decreased estrogen levels during menopause and in post menopausal women, the vagina becomes drier and less stretchy, the cervical opening becomes smaller and the squamo columnar junction moves further up into the endo cervical canal, making the transition zone harder to determine, thus it becomes more difficult to obtain a good cell sample during a PAP test.

During pregnancy many hormonal changes occur, leading to a movement of the squamo columnar junction lower into the vagina leaving the columnar cells more visible. Columnar cells are more often picked up in a pap reading during pregnancy, (due to their size and shape they can be falsely confused with abnormalities) thus it is important to distinguish between a 'true' abnormality or carcinoma and normal healthy columnar cells unfolding lower into the canal. During pregnancy, the endo cervical canal is filled with a thick mucous, which can block access to the cells underneath, making reading accuracy difficult. Furthermore, during pregnancy the placenta requires higher levels of folic acid, potentially leading to a deficiency of this nutrient in the body, cervical changes detected during pregnancy could simply be representing this deficiency<sup>5</sup>.

Like the cells found in the inside of the mouth, these epithelial cells are frequently worn down and replaced. As the cervical cells age, they move from the underlying layer to the outer surface of the cervix, stacking new cells onto healthy cells in neat horizontal layers. Our bodies contain self-regulating mechanisms that destroy any irregular cells that disrupt this orderly horizontal arrangement. However, during stressful circumstances our bodies' self-regulating mechanisms are impaired.

Cervical Dysplasia is the name given to abnormal cell growth arising in the endo-cervical canal or on the cervix itself. The term dysplasia simply means 'bad molding' or 'abnormal cells', yet it is often considered a pre-cancerous condition that inspires a great deal of anxiety. There are numerous grading systems for cervical dysplasia, which creates confusion among the general public around degrees of abnormalities and at what point they may be considered cancer. The chart below will assist in identifying the degrees of 4 classification systems:

**The Class System**

Class I	Class II	Class III	Class IV	Class V
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**Dysplasia**

Benign	Atypia	Mild Moderate Severe Dysplasia	CIS	Invasive cancer
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**Cervical Intraepithelial neoplasia (CIN)**

Benign	Atypia	CIN I	CIN II	CIN III	Invasive cancer
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**Bethesda/Squamous intraepithelial lesions (SIL)**

Benign	Atypia	Low-grade SIL	High-grade SIL	Squamous cell carcinoma
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Figure 2: Comparison of Cervical Cancer Classification Systems: The New Our Bodies, Ourselves, The Boston Women's Health Collective pg. 573, 1984.

The National Cancer Institute's newest PAP test grading method is the Bethesda system seen at the bottom of the chart, which classifies cervical dysplasia by 2 grades of squamous intraepithelial lesions (abbreviated SIL).

Low grade squamous intraepithelial lesions, otherwise known as mild dysplasia or CIN 1 seen above, indicates early irregular changes in shape, size, and number of cells forming the outer surface of the cervix. The majority of abnormal pap tests show mild dysplasia and many mild dysplasia lesions will spontaneously return to normal. A report from the Dartmouth Medical School indicates that approximately 60 to 80 percent of CIN 1 will resolve itself on its own accord<sup>6</sup>.

High Grade (SIL) may be labeled moderate or severe dysplasia, CIN 2 or 3, or sometimes carcinoma in situ<sup>7</sup>. This grade indicates large numbers of abnormal cells affect the outer third of the epithelium. Categorized as self-limiting, such lesions may still return to normal on their own, but if progressive deterioration occurs, it may often take months or even years.

Carcinoma in situ (CIS) is also a high grade SIL, although there appears to be disagreement within the medical profession around whether it is to be classified and viewed as cancer.

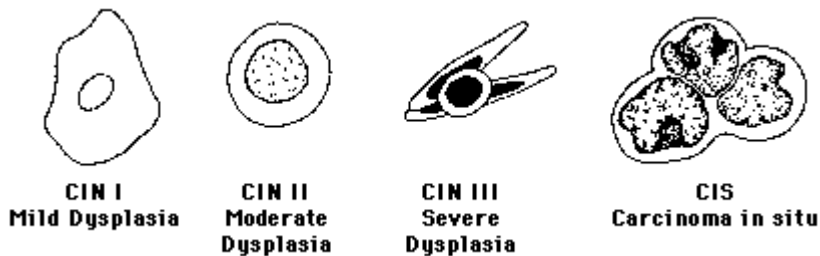


Figure 3: Stages of Dysplasia: Benjamin I, Rubin S, Rubin M, Division of Gynecologic Oncology, University of Pennsylvania Cancer Center 1994.

Cervical cancer is more likely to occur when cells are dividing rapidly and are out of control. Illness, poor nutrition, prescription drugs and hormonal fluctuations all interfere with the body's ability to eradicate these fast-growing irregular cells, and instead contribute to increased cell activity and turnover and ultimately increase the risk of abnormal cell growth. The following excerpt taken from the National Cancer Institute defines invasive cervical cancer as occurring when cells divide when they are not needed, forming a mass of tissue. This mass of tissue is called a growth or tumor, which may be either benign or malignant. Benign tumors are not cancer; they are self-contained, removable and do not spread to other parts of the body. Examples of benign cervical growths include polyps, cysts, and genital warts. Malignant tumors and cancer, on the other hand, may spread to distant organs and tissues via the blood stream or lymphatic system<sup>7</sup>.

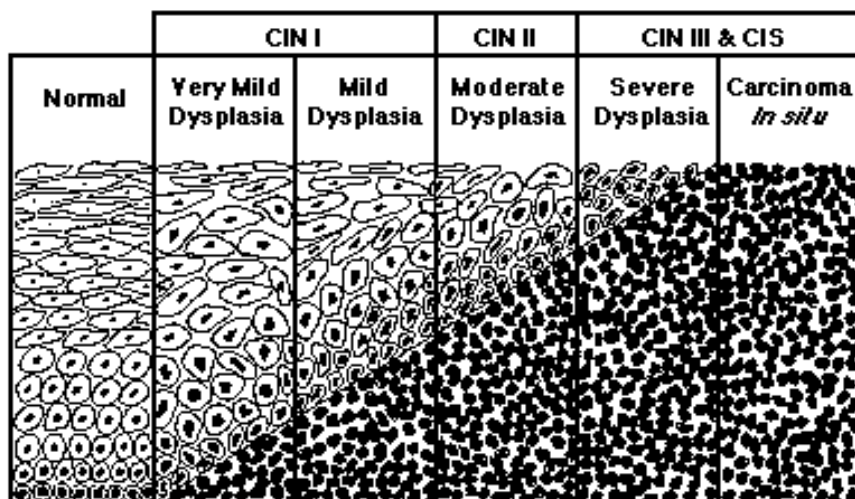


Figure 4: Progression of Abnormal Cells: Benjamin I, Rubin S, Rubin M, Division of Gynecologic Oncology, University of Pennsylvania Cancer Center 1994.

Visible symptoms of pre-cancerous conditions often are not present until abnormal cells become cancerous and invade nearby tissues. Some general symptoms associated with abnormalities include: irregular watery vaginal discharge, backache and poor general health. However, the most common symptom is abnormal bleeding, which may stop and start between cycles or after intercourse, douching, or after a pelvic exam<sup>7</sup>. It is important to note that abnormal bleeding AFTER menopause may also be a sign of uterine cancer and needs to be investigated.

Now that we have established the grades of abnormal cells, let's look at some conventional medical treatment:

### Monitoring and conventional medical treatment

#### Pap Tests

In the 1930's the Greek physician Dr. Papanicolaou developed a test to monitor cervical health, hence the abbreviated name: PAP tests. PAP tests investigate the appearance of cells around the cervix. A small brush is used to collect a sample of dead surface cells from the cervix, taking a full sweep of the squamo-columnar junction and upper vagina. Cells are then placed on a glass slide and sent to the laboratory. The most ideal time for a pap test is around the time of ovulation, 10 to 20 days after day one of the menstrual cycle. During ovulation, the cells are flatter and easier to read due to elevated estrogen levels. Having a PAP test done right after menstruation is not recommended for there may be too many endometrial cells discharged from the uterus, making the test hard to read. To ensure the most accurate PAP reading, avoid using any topical applications that will wash away or hide abnormal cells for a minimum of 2 days before the test. Products to discontinue include: douches, spermicidal foams and jellies, creams and any topical applications of herbal medicine.

Medical opinion recommends that every woman over the age of 18 who is sexually active should have a PAP test annually; however there are mixed opinions about what age to DISCONTINUE testing. Some reports suggest discontinuing a PAP after the age of 65 if 2 consecutive normal smears are obtained; however contrary studies show that one in four cases of cervical cancer and 40% of deaths due to cervical cancer occur in women 65 years and older<sup>8</sup>. Therefore it is crucial to continue periodic testing past age 65.

PAP tests do have limitations. For instance:

- There are often errors due to faulty collection procedures that result in a false negative rate in up to one third of all tests<sup>9</sup>. This means that approximately 33% of women actually have cervical abnormalities that the PAP test fails to pick up.
- A pap test may contain very few cells making interpretation difficult, human error can accompany slide reading and test grading can largely depend upon personal, subjective experience rather than scientific methodology. It is also possible to have a different interpretation from the same person reading the same slide on different occasions. Readability of a slide depends largely upon the conditions of slide storage, how it was prepared and how the cell sample was taken<sup>10</sup>.
- Undetected infections of the cervix or vagina can lead to inaccurate test results; pus cells, increased mucus, yeast cells or bacteria can block the cervical cells skewing the pap reading.
- Considering that many abnormal PAP tests return to normal on their own, the statement “we will always find what we are looking for” sums up many of the concerns about subjecting women to invasive treatment unnecessarily.
- Lastly, there is also question about what exactly the PAP test is identifying. Irregular cells can be the result of infections and nutritional deficiencies, particularly a deficiency in folic acid. Studies question whether an abnormal PAP test should warrant anxiety about a pre-cancerous condition or should be viewed more proactively as a tool - a tool that encourages a woman to pay attention to her physical health and to the many factors contributing to her overall health picture.

After the diagnosis of an abnormal pap, there is often pressure to schedule a woman for immediate surgical treatment, instead of taking a ‘wait and see’ approach and providing support for the body’s self-healing mechanisms.

#### What is the risk of cervical dysplasia developing into cancer?

Research from the University of Toronto indicates that both mild and moderate cervical dysplasias were more likely to regress than to progress and the trend of mild dysplasia leading into severe abnormalities or cancer was 1% per year<sup>11</sup>. A review of follow up studies on 3529 women indicate a regression rate of 57% for CIN I, 32% indicated no change of dysplasia grade, a regression occurred in 43% of cases of CIN 2 and the progression of CIN 1 to invasive cervical cancer was 1%. Another sample cited in the same study concluded that over a 42 month follow up of 1269 women, spontaneous regression occurred in 53% of cases with CIN I and 39% of CIN 2<sup>12</sup>. We know that the probability of cervical lesions progressing to cervical cancer increases with the degree of abnormal cells, thus it is imperative not to ignore the test results, however these statistics put into perspective the pressure to seek immediate treatment and instead favors allowing time for monitoring and retesting. The roller coaster of emotions, of fear and helplessness that accompanies an abnormal pap test, together with the pressure to undergo invasive procedures as soon as possible to alleviate any pre-cancerous condition, is unnecessary.

This observation is not meant to cast an aspersion on well-meaning health care workers, for most people are scared of cancer and images of the terminally ill weigh heavily on everyone’s mind. The medical professional’s principal means of reducing the risk of cancer is the eradication of abnormal tissue. Their training has not focused primarily on the prevention of disease. I question the tenet that surgery should be the first line of defense. Sometimes the attitude that it is easier to ‘cut it out’ is more prevalent than putting a priority on educating people about prevention and additional healing options.

The common trend after diagnosis of an abnormal pap is for a doctor to repeat the pap or progress to conventional treatment to remove suspicious tissue. There are a number of commonly performed procedures used for both treatment and biopsy.

#### Colposcopy

A Colposcopy microscope is a widely used procedure. A doctor performs a 'Schiller test' painting an iodine or vinegar solution onto the cervix, which turns healthy cells brown and any abnormal cells turn yellow or white for easier identification of irregular tissues. Many women who go in for a colposcopy are afraid they might have cancer and are under intense stress. In many clinics, to help minimize fear of the unknown, the colposcopy microscope can be connected to a video screen so a woman can see the cervix on a TV monitor, thus providing a useful tool with which to shed light on the hidden suspect area. If there is no monitor present, the gynecologist may be asked to draw a picture of what is seen. It is beneficial for women to keep copies of any reports in order to personally monitor changes and to regain a sense of empowerment over their bodies.

Doctor may remove cervical tissue for a biopsy, which may be done in a variety of ways:

### **Cone Biopsy**

Another diagnostic and treatment procedure is called a Cone Biopsy. This consists of removing a large cone-shaped piece of tissue to determine whether the abnormal cells have invaded deeper layers of the cervix. Conization is also used to treat carcinoma in situ if the entire lesion can be removed. The cone biopsy removes up to  $\frac{1}{4}$  to  $\frac{1}{2}$  of the face of the cervix and requires a local or general anesthetic in a doctor's office or hospital. There are a number of drawbacks to this frequently performed procedure. Too much tissue may be removed, increasing the risk of second trimester miscarriage and premature labor. Scar tissue may also make the cervix less elastic and the endocervical canal less flexible, leading to future pain and dysmenorrhea<sup>13</sup>.

### **'LEEP' Procedure, Laser Surgery and Cryotherapy**

Loop Electro Surgical Excision Curettage (LEEP) removes a thin slice of cervical tissue by using an electric wire loop. This procedure results in immediate cramping and long term tissue scarring. Further treatments include Laser surgery, which offers precision in killing cancerous cells using a narrow beam of light and Cryotherapy, which involves using liquid nitrogen to freeze and destroy cells 3-4 mm into the cervix. Cryotherapy is the least costly method but poses the highest risk of disease recurrence. Total hysterectomy (removal of the uterus and the cervix) was once the preferred treatment of choice and is still a common occurrence for individuals with persistent CIN 3, carcinoma in situ or invasive cervical cancer.

### **Summary of Conventional Treatment**

All of these procedures are effective for symptom removal and occasionally they save lives by eliminating the zone of abnormal growth. However when performed unnecessarily they subject women to needless invasive procedures without adequately addressing the underlying causes. Considering that many abnormal cervical changes are related to viruses, strengthening the immune system and improving the body's general state of health is the key to long-term improvement.

Once a biopsy has been performed there are a few possibilities; the test can read:

- Benign: indicating no abnormality
- Dysplasia: which may be graded as mild, moderate or severe
- Carcinoma in situ: cancerous cells are contained within a localized area, not moving past the basement membrane nor affecting other tissues.
- Micro invasive carcinoma: penetration below the epithelial layer, not more than 5 mm
- Invasive carcinoma: abnormal cells go further than 5 mm affecting other organs and tissues.

If repeating a PAP test for follow up monitoring, it is advisable to wait for a minimum of 3 months between tests. Any surgical procedure or untreated infection will disturb the surface cervical cells and create a false reading until the underlying cell layers have had a chance to heal, regrow and fully develop.

The time spent waiting to retake a pap test can be viewed as a window of opportunity to plan a course of action, analyze what has been happening in one's life and review one's emotional and physical capabilities. The author and medical doctor, Christiane Northrup, describes cervical dysplasia as resulting "when a woman is conflicted about wanting to be all things to all people, such as the woman who is a mother, works full time and is worried that she does neither of these jobs well enough"<sup>14</sup> this quote is taken from her book " Women's Bodies Women's Wisdom". This is the ideal time to investigate the possibility of the superwomen persona, to eliminate other associated risk factors, and to seek creative solutions for empowerment and positive change.

In the second half of this paper, I will attempt to address some common questions:

- What factors create or contribute to irregular cells?
- Why do some cervical changes develop into cancer while others are self-limiting?

When investigating the cause of disease, there is a desire to find 1 causative factor. However, in the case of cervical dysplasia, there are a number of related factors that may increase the chance that cervical cells may become abnormal or cancerous. Many researchers believe that cancer can develop when 2 or more risk factors act together. It should be noted that not all statistical relationships necessarily reveal a direct causal relationship. Some factors may be correlated simply because they share a common underlying cause or a circumstantial statistical link to the real culprit. It's always important to investigate further whether a "link" points to the cause of disease, or just a relationship between symptoms.

**Risk Factors include:**

**Sexual Intercourse before age 20:** With age, the squamo-columnar junction moves further up into the endo-cervical canal. However, in younger women it may be more exposed, thus increasing the risk of infecting those cells during sexual activity.

**An increased number of sexual partners** or having partners who themselves have had many sexual partners. This is simply due to the logic that the more sexual partners one has, the more likely it is that one will have a partner who is carrying an STD.

**Socioeconomic status:** Low income and socioeconomic status is a risk factor for cervical cancer. Incomplete Pap testing is most common among African, Native Indian and Inuit, Hispanic, the poor, elderly, women infected with HIV and people living in rural areas<sup>15</sup>. Accessibility to optimal health care, cultural beliefs, lack of education and psychological issues may all play a role in keeping these women from getting screened, reporting disease, and seeing health care providers for treatment and follow-up care.

**Human Papilloma Virus (HPV):** otherwise known as viral warts, is one of the strongest links between cervical dysplasia and its evolution into cancer<sup>16</sup>. The viral wart implicated in cervical dysplasia is genital warts. Genital warts are benign non-cancerous tumors, transmitted through skin-to-skin contact and encouraged by tissue trauma and moisture.

Women who have HPV, or whose partners have had HPV, are at a higher risk of developing abnormal cells, although not everyone who has HPV goes on to develop cervical cancer. Cancer related HPV might increase the likelihood that mild abnormalities may progress to more severe conditions.

When hearing about HPV it's common to assume that this STD is a virus that 'someone else' contracts. However, it is alarming to note the frequency with which this infection occurs. HPV is the most commonly occurring STD. An article written by the American Social Health Association cites references from the 1997 American Journal of Medicine stating that "about 74 percent of Americans have been infected with genital HPV at some point in their lives. Among those ages 15-49, only one in four Americans has not had a genital HPV infection... Experts estimate that at any given time, only about

1% of all sexually active Americans have visible warts, and the virus can live in the body for months, years or even a lifetime without giving rise to observable symptoms<sup>17</sup>". The Center for Disease Control and Prevention estimates that "nearly 20 million people are currently infected with HPV... 50-75% of all sexually active men and women will acquire a genital HPV infection at some point in their lives...and up to 5.5 million Americans will acquire a new genital HPV infection each year<sup>18</sup>".

There are more than 100 types of HPV<sup>19,20</sup>, including the viruses involved in plantar warts that affect the hands and feet, which are very different from those affecting the genital tract. Approximately 40 viruses directly affect the genital tract; some are more strongly associated with cancer than others. High-risk types include: HPV, 16, 18, 31 and 45<sup>19,20</sup>.

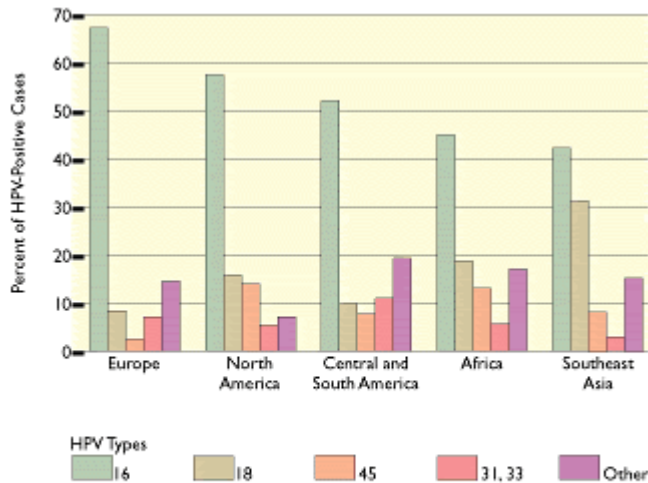


Figure 3. HPV 16 is the most common oncogenic HPV world wide; it is found in about 50% of all cervical cancers. There is significant geographic variation in other high-risk HPV types, such as HPV 18 and 45. (Adapted from Bosch et al, 1995)

Figure 5: "Human Papillomavirus + the Risk of Cervical Cancer" Burk R, Albert Einstein College of Medicine, Hospital Practice Online Journal

The graph above shows it is HPV 16, which is predominantly seen in squamous cell carcinomas throughout the world. The Albert Einstein College estimates that HPV is found in 90 to 95% of cervical cancers<sup>20</sup>, and that HPV 16 is most commonly associated."

According to the National Cancer Institute: "there are HPV types that are virtually never found in cancer, these are low-risk types known as HPV 6, 11, 42, 43 and 44<sup>21</sup>. DNA testing can identify the high-risk HPV lesions and be a tool for determining the route of holistic support. Viral infection can damage DNA and other parts of the cell. It is thought that HPV produces proteins that interfere with cell functions that normally prevent excessive cell growth.



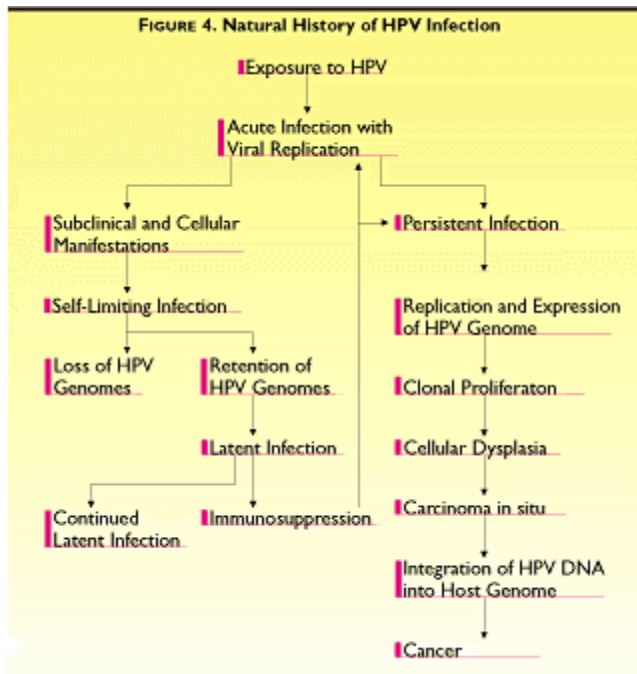


Figure 6: Progression of HPV: "Human Papillomavirus+ the risk of Cervical Cancer" Burk R, Albert Einstein College of Medicine, Hospital Practice Online Journal

Medical treatment focuses on the removal of any raised growth, while nothing is offered to strengthen the body's reserves to deter a viral outbreak. An important fact to note: since genital warts are viral, a holistic treatment protocol which includes strengthening the immune system does wonders for diminishing the infection and encouraging visible warts to disappear on their own (though the virus may still remain dormant in the body).

Abnormal Pap's are sometimes incorrectly diagnosed Human Papilloma Infections. To complicate the situation, atypical cells from HPV can mimic abnormal cells, precancerous conditions and even invasive cancer. Therefore it is crucial that any possible infections are correctly diagnosed and cleared up, before repeating a PAP test and scheduling surgery.

**Herpes Simplex 2 Virus (Genital Herpes) and Chlamydia** exposures are both linked with a 2-6 times increased risk of cervical cancer than when compared to the general population<sup>22</sup>. It is thought that chlamydia interferes with one of the body's natural safety mechanisms that work to destroy unhealthy cells.

**Cigarette smoking:** Statistics show that women with cervical cancer are most likely to be current smokers. The risk appears to increase with the daily number of cigarettes a woman smokes and with every year she has smoked<sup>23</sup>. A 1982 study from the American Journal of Epidemiology theorizes over the impact cigarette smoke has on the health of the cervix "since the products of tobacco smoke are circulated in breast fluids of non-lactating woman fifteen minutes after smoking a cigarette, it is possible that a carcinogen can be inhaled from cigarette smoke, transported through the blood system and secreted by the cervical surface cells where it may act as a promoter or co-carcinogen on the cervical cells."<sup>24</sup> Cigarette smoking has also been found to deplete the body of cancer-fighting nutrients, including Vitamin C<sup>25</sup>, E and beta-carotene.

**Diethylstilbestrol (DES):** A toxic synthetic estrogen drug used during the 1940's through 1970's, mistakenly used to prevent miscarriages, resulted in numerous birth defects, DES increased the

incidence of cervical changes in women whose mothers were given the drug<sup>26</sup>. Incidentally, for the last 20 years DES has been commonly prescribed as a morning after pill<sup>27</sup>.

**Oral Contraception:** The epithelium or squamo/columnar cells of the cervix respond to hormonal changes and long term use of birth control pills are associated with cancer of the cervix<sup>28</sup>. Studies indicate a strong correlation between the pill and cervical dysplasia, one reference theorizes that "one in every five pill users develops a suspicious pap after 3-4 years<sup>29</sup>". Birth control pills have been found to decrease nutrient levels of Vitamin C, folic acid, Vitamin B6, B12, riboflavin and zinc<sup>30</sup>.

Additional studies report that abnormal cervical cells found in Pap tests of oral contraceptive users mirror those abnormal changes found in women with a folate deficiency. Therefore one could speculate that at least some abnormal PAP's could be really showing a folate deficiency. To support this theory:

A double blind study published in the American Journal of Clinical Nutrition has been conducted on the supplementation of folic acid in women with mild to moderate dysplasia, all of whom had been using an oral contraceptive for at least 6 months. The women received 10 mg folic acid for 3 months under double blind conditions. Before treatment, it was noted that the blood levels of folic acid in subjects using oral contraceptives were significantly lower than non-users. The studies indicate a derangement in folic acid metabolism that may sometimes be misdiagnosed as cervical dysplasia, and concluded that folic acid supplementation may arrest or reverse the abnormal cells<sup>31</sup>.

According to Health Canada, June 1995, close to 70 million women take oral contraceptives, making birth control pills one of the most commonly used drugs in the world. By using oral contraceptives, is a woman unknowingly setting herself up for abnormal PAP's, results that could really be indicating a nutritional deficiency caused by using the oral contraceptive?

**Intra Uterine Devices** used for birth control can also be a concern. The IUD string that penetrates the cervical opening can lead to an inflammation that mimics abnormal cancer cells. After an IUD has been removed it is best to wait up to 3 months before retaking a PAP test.

**Depo Provera:** one of the latest forms of birth control, an injectable contraceptive that suppresses ovulation and renders women infertile for 3-6 months, has been linked to the rise in cervical cancer in third world countries by studies conducted by the World Health Organization<sup>32</sup>.

**Tampons and Synthetic Estrogens** are two not so known risk factors. Tampons contain carcinogens such as talc fibers, bleach and asbestos, thus it is best to discontinue use and switch to non-bleached tampons or non-synthetic cotton pads. Lowering contact with synthetic estrogens found in the environment (otherwise known as xenoestrogens) is recommended, as estrogens are directly associated with gynecological cancers and abnormal cell growth. Some considerations include pesticide residue, agricultural chemicals, plastics (soft worse than hard), paint and saran wrap, birth control pills (as already mentioned), meats and dairy (due to injected hormones) and alcohol, particularly beer (a yeast used in the fermentation process, saccharomyces, produces estrogen which can have an effect upon vulnerable tissues<sup>33</sup>).

**Immune System Health** goes a long way toward suppressing viruses and abnormal growths. An immune system weakened by medications, infection, excessive stress, trauma, or surgery, may be unable to prevent abnormal conditions from surfacing. Thus individuals with a poor diet, those dealing with long term viruses, persons undergoing prolonged treatment with steroids and individuals receiving medication to suppress the immune system, are more likely to develop cancerous lesions. According to the book "A Feminist Approach to PAP Tests", other drugs that may influence the immune system and create abnormal pap results include: digitalis, antihistamines, tetracycline, valium, aspirin, allergy shots and thyroid medication<sup>34</sup>.

It is also useful to consider one's reaction to stress. A common human response to stress is illness, feelings of hopelessness, and self-blame, all of which have an impact on the immune system and can create a downward spiral effect.

Unfortunately there is a deficit of education in this area of women's health. To this day, some researchers still categorize cervical cancer as an STD, and many doctors do not receive specific training nor do they follow up with current research<sup>35</sup>. Considering that many STD's and vaginal infections mimic cervical dysplasia, misdiagnosis and unnecessary invasive procedures can result from lack of information and faulty testing procedures. Some doctors opt for immediate radical treatment for minor abnormalities, which may eventually resolve without intervention, thus it is important to question if it is a particular doctors' standard practice to use aggressive treatment for mild abnormalities, or if he is more inclined to wait for tests to consistently show an abnormality over time. To provide optimal health care services to women, more accessible information is required to educate the public about causative factors, prevention and alternative treatment of dysplasia.

Creating a supportive environment for healing and immune response consists of eliminating harmful triggers while encouraging our bodies' natural defenses to work. Unfortunately, many women are not actively encouraged to strengthen their constitution and heal themselves.

### Nutritional Supplements

Supplements for immune system health should focus on antioxidant therapy specifically Beta Carotene, Vitamins A, C and E, folic acid and B vitamins. These supplements can be used to reverse dysplasia by protecting the body's healthy molecules, neutralizing free radicals and enhancing the ability of the immune system to fight viruses and HPV while encouraging healthy cell growth.

A German study found a direct correlation between low tissue concentrations and blood levels of Beta-carotene, Vitamin A, C, folic acid and stages of cervical abnormality<sup>36</sup>. The lower the blood levels, the greater the risk of cervical dysplasia. **Vitamin C** works as a wound healer, to strengthen and promote epithelial cell integrity, and to inhibit carcinogen formation, while **Vitamin E** has a number of antioxidant properties and anti-proliferative properties that encourage controlled cell replication<sup>37</sup>. Studies have found individuals with HPV to be significantly lower in serum vitamin E.

**Vitamin A** may help stop or prevent cancerous changes in cells on the surface of the cervix. Vitamin A plays a protective role against carcinogens in mucous-producing epithelia (lung, esophagus, larynx, and cervix). Vitamin A is fat soluble and can build up in the tissues, thus caution should be given with long term use. Beta carotene, which is converted into vitamin A in the body, can be used simultaneously or instead of Vitamin A, and does not contribute to long term toxicity and has also shown to be beneficial in cervical dysplasia treatment<sup>38</sup>. Precursors to Vitamin A such as Beta-carotene and other members of the carotenoid family (lutein, lycopene and alpha carotene) can be found in green, orange and red fruits and vegetables.

**Folic acid** is a water-soluble vitamin found in leafy green vegetables, legumes, brown rice, wheat germ, brewer's yeast, beef, chicken and liver and kidney organ meats. Since dietary folates are easily destroyed through cooking and processing and many individuals do not consume folate-rich foods, it is thought that folate deficiency is one of the most common nutritional deficiencies<sup>39</sup>. Incidentally, a number of prescription drugs also reduce folate levels in the body. Some drugs of concern include: cimetidine, antacids, anticonvulsants, alcohol, and oral contraceptives, all of which lower serum and tissue concentration levels of folate<sup>40,41</sup>. As mentioned earlier, there is a correlation between folate deficiency, the use of oral contraceptives and abnormal PAP's, plus studies indicate a relation between low folate status and an increased incidence of HPV infection, particularly HPV 16<sup>42,43</sup>. Folic acid is involved in the synthesis and repair of DNA and influences gene stability<sup>44,45</sup>. It may inhibit the carcinogenic potential of HPV by keeping the virus from becoming integrated into the human DNA.

Folic acid is generally regarded as safe, although some have thought that it may mask a vitamin B12 deficiency. It should also be noted that folic acid supplementation may impact seizures in drug-treated epileptics, and therefore should be administered with caution in these individuals<sup>46</sup>.

There is also a close relationship between folic acid and other B vitamins. Low levels of **Vitamin B** are related to cervical cancer. A deficiency of B vitamins is linked with excess estrogen levels, due to an interference with the liver's ability to inactivate excess estrogens; plus both folic acid and Vitamin B12 are inversely associated with homocysteine concentrations, a potential marker for cervical cancer<sup>47</sup>.

### Case Study

1½ years ago I saw a 29-year-old female client whose main concern was cervical dysplasia. She was currently single, though had a common-law partner and one son age 10. Some relevant points from her case history included: a history of smoking for 1 year as a teen and since childhood she experienced cold sore outbreaks (Herpes simplex 1) occurring usually once a year. As a teen, she was diagnosed with genital warts and treated with liquid nitrogen. At age 19, she experienced a recurrence of the warts when pregnant and again was treated with liquid nitrogen. At age 21, she was first diagnosed with cervical dysplasia, CIN 1 (mild dysplasia) and freezing was route of treatment, she then returned for yearly pap tests. In 2000 the dysplasia returned, worse, classified as moderate dysplasia CIN II. Her oral contraceptive history began at age 16, she used the same birth control on and off for 14 years, until age 25, when she changed oral contraceptive to Menstrin and experienced menstruation only 2 times per year, due to the drug. She presented with a yellow white discharge once a month (which the client recalled, began with the onset of birth control pills). Swabs identified candida yeast infections, which were in the past treated with over the counter creams and suppositories. Her general health presented with no respiratory, musculoskeletal, urinary or cardiovascular complaints. With digestion she experienced bloating and gas. Her diet was high in red meat, eaten 7 days per week, she loved sweets, consumed dairy and had a low intake of fruits and vegetables

### Treatment Protocol

The treatment protocol was focused on strengthening her immune system, improving tissue integrity of the reproductive tract and reducing yeast and discharge.

- As this woman was a typical 'meat and potato' person, my dietary recommendations encouraged a gradual decrease of red meat with a goal of switching to hormone-free white meats (turkey, chicken and fish).
- I recommended eliminating refined sugars and refined foods and increasing her intake of fresh fruits and vegetables, emphasizing the importance of organic.
- I strongly encouraged other alternative contraceptive options
- Sitz baths were used 2 times per week for 2 months to increase pelvic circulation

### Supplements

Vitamin B Complex 50 mg bid

Vitamin A 50000iu for 3 weeks then switched to Beta-carotene 30 000 iu daily

Vitamin C to bowel tolerance

Vitamin E 400 iu daily

Folic Acid 5 mg daily

**Internal Herbal Tincture:** 5 ml of tincture was taken three times per day, mixed in warm water, taken before meals.

Thuja occidentalis	20 ml
Larrea mexicana	15 ml
Hydrocotyl asiatica	20 ml
Chamomilla recutita	15 ml

Achillea millefolium	15 ml
Lamium album	<u>15 ml</u>
	100 ml.

**External Tincture:** 1 teaspoon of the tincture was added to 1 cup of hot water, poured into a douche bulb (purchased from a drug store) and used as a retention douche. The easiest way for a woman to use a douche bulb is to put her feet up in the bathtub, insert the bulb and retain the liquid for 10 minutes. The douche was continued 3-4 times per week for 3 months.

Thuja occidentalis	15 ml
Hydrocotyl asiatica	20 ml
Achillea millefolium	20 ml
Calendula officinalis	20 ml
Propolis	5 ml
German Chamomile Essential Oil	3 drops
Chamomilla recutita	<u>20 ml</u>
	100 ml

**Pau'darco Tea:** *Tabebuia impetiginosa*: 2 teaspoons of herb to one cup of water was simmered on stove for 20 minutes (with the lid on, while using a glass or porcelain pot). Taken 3 cups per day. I also recommended this tea be used as a douche, alternating the external tincture douche with the pau d'arco tea.

- After 4 months, a follow up Pap test indicated a regression to mild dysplasia, at this point I changed the formula, dropping the dose of Thuja and Hydrocotyl in the internal tincture and added in 15 ml of Astragalus to further support and build immune function. Seven months after continuing treatment, the pap tests detected no abnormalities. 1 ½ years later, I still see her occasionally for follow up visits and her pap tests have still been normal.

**Therapeutic rationale is as follows:**

**Thuja occidentalis:** Tree of life has been used for abnormal growths and epithelial tissue degeneration that are viral and fungal in nature and has a particular affinity to clearing up warts<sup>48</sup>. Thuja should not be used in pregnancy and excessively high and prolonged dosages of Thuja (consuming more than 40 ml weekly) may result in neurotoxicity due to the constituent thujone, one of the first symptoms noted could be a headache<sup>49</sup>.

**Larrea mexicana:** Chapparal is a powerful blood cleanser and antioxidant. Some constituents present in this plant are flavinoids and lignans, which contain anti biotic, anti tumor and anti microbial properties<sup>50</sup>. Chapparal should not be used in pregnancy, during lactation or in individuals with decreased liver function.

**Hydrocotyl asiatica:** Centella or Gotu Kola contains a chemical called asiaticoside, an agent used to speed up healing, decrease inflammation while inhibiting formation of scar tissue. It increases formation of hyaluronic acid, produced by connective tissues (large amounts of hyaluronic acid blocks a cancer-causing gene, thus inhibiting tumor cell growth<sup>51</sup>). Gotu kola's anti viral properties are thought to directly inactivate viral particles or affect replication abilities of a virus once inside infected cells or both.

**Chamomilla recutita:** German Chamomile contains anti-inflammatory, anti microbial and decongestant properties; its constituents chamazulene and matricine are anti bacterial and gently soothing to irritated tissues<sup>52</sup>.

**Achillea millefolium:** Both the flowers and the leaves of Yarrow are high in volatile oils, which encourage blood flow to the pelvic region, provide decongestant properties and local anti-

inflammatory effects. Leaves are bitter, which promote liver activity, increasing hepatic clearance of estrogen from the body. If the liver is congested it is not effectively able to break down hormones, thus estrogens stay circulating in the body longer.

**Lamium album:** White Dead Nettle contains tannins and flavone glycosides increase pelvic circulation, act as a pelvic decongestant, and appear to have an overall tonic effect, working to cleanse, relax, and strengthen the reproductive tissues.

**Calendula officinalis:** Marigold possesses anti inflammatory, anti fungal and anti viral properties, an excellent anti yeast agent, therapeutic properties may be due to its volatile oils, saponins and flavinoid content.

**Propolis** has anti microbial effects by inhibiting cell division and anti mycotic effects inhibiting protein synthesis<sup>53</sup>. Its flavinoids exhibit anti viral, anti bacterial and anti mycotic effects in vivo and in vitro studies, and have regenerative properties beneficial for cervical ulcers<sup>54</sup>.

**Tabebuia impetiginosia:** Pau d'arco or Lapacho is frequently used for its anti cancer properties, it contains lapachol and flavones which is linked to its use as an anti oxidant while helping to suppress tumor formation<sup>55</sup>. Pau d'arco is widely used to treat bacterial and fungal infections.

I would like to conclude by highlighting the 8 points of action for any woman who is diagnosed with an abnormal pap:

1. Monitor the condition with a frequent PAP tests every 3 months, and obtain copies of the reports to keep a personal health record.
2. Further tests should be done to eliminate any chance of additional infection. Tests should include gardnerella, candida albicans/yeast, chlamydia, trichomonas, herpes, and genital warts. Any infection should be cleared up before repeating a PAP test.
3. If on the birth control pill, IUD, or Depo Provera, switch to barrier forms of birth control such as condoms or a diaphragm for 6 months to one year.
4. Support the immune system and encourage whole body healing by identifying any emotional and environmental stressors, eliminating associative risk factors and supporting the body with whole foods.
5. Enhance the immune system by increasing antioxidants, Vitamin C, E, Beta-carotene, Folic acid and B vitamins.
6. Administer herbal medicine internally and externally as a douche to stimulate the body's healing responses and support the integrity of the reproductive tract.
7. If diagnosed with mild or moderate dysplasia, repeat a PAP test in 3 to 6 months and use that time to support the body's healing strategies. It is advisable for women experiencing high grade SIL, visible cervical lesions, persistent irregular bleeding or a woman who chooses complimentary medicine but consistently fails to follow the treatment to consult their physician for medical follow-ups.
8. Class 3 or 4 CIN may require surgical treatment. Eliminate possible aggravating factors while focusing on tools for immune system support can occur concurrently.

Many illnesses are the result of our complex emotional and physical relationship to the world in which we live. Cervical dysplasia is one of those conditions where one needs to question the impact the environment has on our health. For women with cervical dysplasia, tools for self-healing are possible. Education, eliminating potential triggers, strengthening the immune response and creating a supportive environment for the bodies innate healing abilities can lead one closer to a return to optimal health.

Katolen Yardley, MNIMH is a Medical Herbalist, currently in private practice and an instructor of Herbal Medicine in Vancouver BC, Canada. Since 1998, she appears monthly on BCTV (British Columbia Television) morning news, where she offers herbal information to the public. Her personal interest in health lies with the emotional connection to wellness and dis-ease, nervous system disorders and

women's health issues. She believes in providing usable tools for healing through inspiration and education.

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