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CANCERFOCUS

CONTENTS

Cervical & Ovarian Cancers

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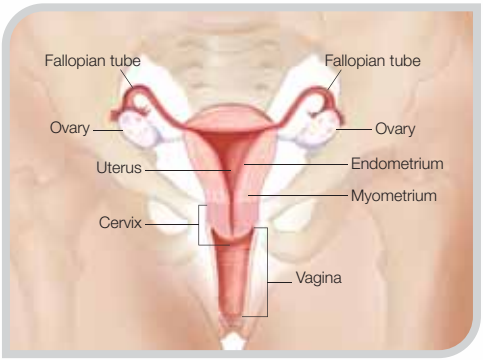


According to the Singapore Cancer Registry, Interim Annual Report, Trends in Cancer Incidence Singapore, 2010-2014, cancers of the ovaries and cervix are the 5th and 10th commonest female cancers to affect Singapore women respectively.

CANCER OF THE CERVIX

Cervical cancer is the 2nd most common cancer in women worldwide and half a million new cases are diagnosed each year. It is a major cause of gynaecological deaths with a death rate of 250,000 per year. In Singapore, it is now the 10th commonest women's cancer with an age standardised rate of 6.9 per 100,000 per year. Its incidence has decreased significantly over the years as a result of our improving economic status, Pap smear screening, and early treatment of preinvasive disease.

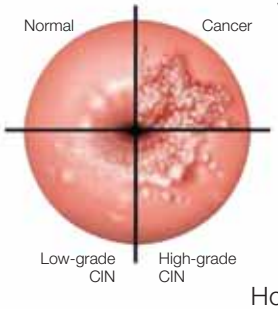
The peak age groups affected are women in their 40s and 50s.

Cervical cancers can be prevented by vaccination and Pap smear screening. Early cervical cancers are curable.

Causes and Risk Factors

In recent years, the underlying cause of cervical cancer has been uncovered. It is attributed to a sexually transmitted virus called the Human Papilloma Virus (HPV). The HPV is a common sexually transmitted viral infection among women and it specifically attacks the basal layer of the squamous epithelium through a small breach in the surface. This virus is said to account for 99.7% of all cervical cancers. There are 2 sub-groups of HPV virus: low risk subtypes e.g. HPV type 6 and 11, and high risk subtypes oncogenic subtypes e.g. HPV type 16 and 18. HPV virus is very prevalent in the community. Most sexually active women will have been exposed to this virus. A majority of the virus infection resolves spontaneously. It is only the persistence of the infection by the high risk oncogenic subtypes that may result in cervical cancers years later. Hence, *cervical cancer is a very rare outcome of a very common infection*. People who are immuno-compromised e.g. HIV patients, renal transplant patients, patients with auto-immune diseases on immunosuppression therapy, are more likely to have persistent infection. Other risk factors that predispose women with persistent infection with high risk subtypes include: women with multiple sexual partners, are smokers, have other STDs, consume contraceptive pills, and had first intercourse at an early age.

Gross Radical Hysterectomy specimen showing cervical cancer



Persistent infection with high risk HPV virus does not lead to cervical cancers overnight. The cells of the cervix initially undergo some changes first. These changes occur months to years before cancer develops and is known as Cervical Intraepithelia Neoplasia (CIN). At this stage, there are no symptoms and signs. CIN can only be detected on routine Pap smears. However, when CIN is undetected and untreated, cervical cancer will eventually develop.

Symptoms and Signs

The common symptoms of cervical cancers are:

- Bleeding after intercourse
- Bleeding in between menses
- Blood-stained or foul-smelling vaginal discharge
- Bleeding after menopause
- Pain (this is often a late sign of cervical cancer)

The most common presenting symptom is abnormal vaginal bleeding e.g. post-coital bleeding, inter-menstrual or post-menopausal bleeding. However, in the dysplasia (pre-cancer) stage and very early stages of cancer, there are usually no symptoms. In advanced cases, patients may present with other symptoms such as foul-smelling vaginal discharge or even vaginal passage of urine or faeces.

A pelvic examination would usually reveal a tumor growth or ulceration on the cervix and a biopsy should be performed to confirm the diagnosis. A patient with a normal looking cervix but an abnormal Pap smear requires a colposcopy examination and directed biopsy to diagnose pre-cancer or early cancers. A general physical examination should be performed to exclude metastatic disease.

Diagnosis

A patient who is suspected of having cervical cancer should be promptly referred to a gynaecological oncologist for assessment and treatment to avoid delay. Unlike other gynaecological cancers, cervical cancers are staged clinically because most patients worldwide are treated only with radiotherapy. Therefore, a careful clinical examination should be done by an experienced team, preferably under anaesthesia i.e. EUA. 'Allowed investigations' include hysteroscopy, cystoscopy, proctoscopy, intravenous urogram and X-rays of the lungs or bones. CT scans, MRI, or even PET scans are of value in planning treatment.

Staging

In Singapore, we stage the cancer according to the FIGO classification below.

Stage	Description
I	Invasive cancer confined to the cervix
IA	Invasive cancer identified microscopically
IA1	Stromal invasion ≤3 mm; width ≤7 mm
IA2	Stromal invasion 3 to 5 mm; width ≤7 mm
IB	Invasive cancer > 5mm depth or 7mm width or any size lesion diagnosed on gross examination
IB1	Clinical lesion ≤4 cm in size
IB2	Clinical lesion >4 cm in size
II	Invasive cancer beyond cervix; not to pelvic wall or to distal one-third of vagina
IIA	No parametrial involvement (disease confined to upper two-thirds of vagina)
IIB	Parametrial involvement
III	Extension to pelvic wall and/or distal one-third of vagina
IIIA	No extension to pelvic wall (disease involves distal one-third of vagina)
IIIB	Extension to the pelvic wall (includes hydronephrosis and nonfunctioning kidney)
IV	Extension beyond the true pelvis
IVA	Involves bladder or rectal mucosa
IVB	Spread to distant organs

Treatment

Cervical cancer management may involve: surgery, radiotherapy, chemotherapy, and palliative care. Advanced cervical cancer that involves neighbouring organs is difficult to treat and has a high mortality rate.

Surgery is generally reserved for medically fit patients with cancers up to stage IIa. Fertility sparing surgery such as cervical cone biopsy can be performed for stage IA1. A simple hysterectomy is an alternative if preserving fertility is not a priority. However, for stage IA2 to IIA, a radical hysterectomy is generally recommended. Radiotherapy can be utilised for all stages. However, since 1999, the addition of chemotherapy as a radiation sensitiser (chemoradiation) is used as a standard form of treatment for locally advanced cervical cancers.

Chemotherapy or radiotherapy can also be used in the adjuvant setting with the intention to reduce local pelvic recurrence or systemic micrometastases after surgery in the presence of certain high risk factors.

There are new advances in the treatment of cervical cancers. For stages 1A1 to 2A in the FIGO classification, there is now the option of fertility sparing surgery called radical trachelectomy, which can be performed open, vaginally or laparoscopically. Case selection is important to ensure good survival outcome. Generally, radical trachelectomy is limited to tumours less than 2cm in size in women below the age of 40. Other advances include laparoscopic and robotic radical hysterectomy instead of conventional open surgery. This comes with the advantages of lesser pain, faster recovery, and better cosmesis.

Advances have also been made in the management of bulky cervical cancers which pertend a poorer outcome with current management strategies such as chemoradiation or combination modalities with surgery and adjuvant radiation. In recent years, neoadjuvant chemotherapy is increasingly being used and explored for this group of patients and appears to have a positive impact on overall survival. This is usually followed by radical hysterectomy or chemoradiation. There are also trials exploring the use of Avastin, both as primary treatment and in the management of recurrent cervical cancers, with promising outcomes.

The 5 year outlook (survival) is dependent on stage:

Stage 1	80 – 90%
Stage 2	50 – 70%
Stage 3	20 – 40%
Stage 4	10 – 20%

Nodal involvement is itself an independent prognostic indicator not reflected by stage. At present, cervical cancer is still staged clinically. Generally, once there is nodal involvement, there is an approximate 50% decline in 5 year survival, stage for stage.

The good news is that cervical cancer can be prevented. Concurrently, one can prevent cervical cancer by HPV vaccination (primary prevention) and Pap smear (secondary prevention). There are 2 vaccines available now: Cervarix and Gardasil. Gardasil covers subtypes 16 and 18 i.e. the high risk subtypes that account for 70% of cervical cancers. Besides covering subtypes 16 and 18, Gardasil also covers low risk subtypes 6 and 11 that cause genital warts. The vaccines are indicated for females aged 9 to 26. Cervarix is available at all polyclinics and is medisave deductible.

Pap smear screening is recommended for all sexually active women aged 25 to 65 at least once every 3 years. The Pap smear test is a screening test for cervical cancer. It aims to detect pre-cancer changes on the cervix which can easily be treated so that cancer development can be prevented. It is a simple and affordable test available at all polyclinics, GPs and gynaecology clinics. In the near future, HPV testing is likely to be incorporated into primary cervical screening either as a co-test with Pap smear or as a stand-alone primary screen.

CANCER OF THE OVARY

Ovarian Cancer, though less common compared to the other gynaecological cancers, is the most deadly. A majority of cases occur late in advanced stages. In Singapore, the age standardised rate is about 12.4 per 100,000 per year and it has steadily increased over the years. The majority of cases affect women aged 40 to 60.

Picture of ovarian cancer

Causes and Risk Factors

Like endometrial cancer, the exact cause is unknown. In the past, it was thought to be due to incessant ovulation. Certain women are noted to be at higher risk than others:

- Women who have never had any children
- Women who are sub-fertile
- Women who started menses early and who menopause late
- Women with strong family history of breast and/or ovarian cancers or known family history of BRCA syndrome or LYNCH II syndrome

In recent years, new theories have evolved. Most now believe that EOC arises from the adjacent pelvic structures. For example, serous carcinoma of the ovary may arise from the implantation of malignant cells from the fallopian tubes; endometriosis may be a precursor of endometrioid and clear cell carcinoma of the ovary; the endometrium may be the source of these neoplasms.

Symptoms and Signs

Ovarian cancer is often referred to as a silent killer. In the early stages, there are often no symptoms. By the time

symptoms arise, the cancer is often advanced. Furthermore, symptoms of ovarian cancers are often vague and confused with gastritis, gallbladder disease, or colorectal conditions. Common symptoms include:

- Abdominal bloatedness and distension
- Indigestion or 'wind'
- Sensation of fullness after a meal
- Palpable abdominal mass
- Urinary symptoms e.g. frequency
- Bowel symptoms e.g. constipation
- Unilateral leg swelling

Hence, it is important that women around the perimenopausal age group do not ignore such symptoms. If unsure, do seek medical advice early.

Diagnosis

Diagnosis is often suspected when there is a complex solid cystic mass detected on ultrasound pelvic scan. Once ovarian cancer is suspected, the patient should be referred to a gynaecologic oncologist or medical oncologist for further investigations. These often include CT scans and blood tests for ovarian tumour markers e.g. CA 125.

Staging and Treatment

Surgery has to be undertaken in most instances to remove the growth to confirm the diagnosis of cancer and to surgically stage the cancer at the same setting. If the cancer is found to be advanced at the time of surgery, attempts will be made to debulk as much cancer as possible as the amount of residual disease directly correlates with survival. Hence, no efforts are spared to optimally debulk the cancer. Occasionally, this may entail radical surgery, including enbloc bowel resection, and peritonectomy. Occasionally, if the cancer is deemed too advanced, chemotherapy may be given first prior to surgery i.e. neoadjuvant chemotherapy. Except for very early stage ovarian cancers, almost all ovarian cancers have to be treated with a combination of surgery and adjuvant chemotherapy. The current gold standard chemotherapy regimen is combination platinum-based chemotherapy with paclitaxols. Targeted therapy such as Avastin, is increasingly being used both as the primary adjuvant setting, in maintenance therapy, as well as in the recurrent setting, with improved outcomes. There is an added 14.1 months and 11.2 months advantage in progression free survival when targeted therapy is used in the primary adjuvant setting and maintenance therapy respectively.

Stage	Description
I	Growth limited to the ovaries.
IA	Growth limited to one ovary; no ascites present containing malignant cells. No tumour on the external surface; capsule intact.
IB	Growth limited to both ovaries; no ascites present containing malignant cells. No tumour on the external surfaces; capsules intact.
IC	Tumour either stage IA or IB, but with tumour on the surface of one or both ovaries; or with capsule ruptured; or with ascites present containing malignant cells or with positive peritoneal washings.
II	Growth involving one or both ovaries, with pelvic extension.
IIA	Extension and/or metastases to the uterus and/or tubes.
IIB	Extension to other pelvic tissues.
IIC	Tumour either stage IIA or IIB, but with tumour on the surface of one or both ovaries; or with capsule(s) ruptured; or with ascites present containing malignant cells, or with positive peritoneal washings.

Stage	Description
III	Tumour involving one or both ovaries with histologically confirmed peritoneal implants outside the pelvis and/or positive regional lymph nodes. Superficial liver metastasis equals stage III. Tumour is limited to the true pelvis but with histologically proven malignant extension to small bowel or omentum.
IIIA	Tumour grossly limited to the true pelvis with negative nodes but with histologically confirmed microscopic seeding of abdominal peritoneal surfaces, or histologic proven extension to small bowel or mesentery.
IIIB	Tumour of one or both ovaries with histologically confirmed implants, peritoneal metastasis of abdominal peritoneal surfaces, none exceeding 2 cm in diameter; nodes are negative.
IIIC	Peritoneal metastasis beyond the pelvis >2 cm in diameter and/or positive regional lymph nodes.
IV	Growth involving one or both ovaries with distant metastases. If pleural effusion is present, there must be positive cytology to allot a case to stage IV. Parenchymal liver equals stage IV.

Survival

The outlook for ovarian cancer depends on stage. Overall, outlook is poor with 5 year survival averaging 50% as the majority of cases occur late in advanced stages. The recurrence rate for advanced ovarian cancer is as high as 80% and may require repeated surgery and chemotherapy. Increasingly, peritonectomy is being considered for selected patients with low volume peritoneal disease, which may improve progression free and overall survival.

At present, there is no effective screening tool for ovarian cancer. Neither routine ultrasound scan nor ovarian tumour markers blood tests are specific enough to detect ovarian cancer early. New screening modalities are constantly being developed and evaluated. While we await a robust screening tool, one's risk of ovarian cancer drops when women have children, breast feed, or take the COCs. Prolonged usage over 3 to 5 years can halve one's risk of ovarian cancer.

In conclusion

Cervical and ovarian cancers are common. Cervical cancer can be prevented by vaccination and Pap smear screening. Early stage cervical cancer is curable. On the other hand, ovarian cancer remains a silent killer and is a challenge to treat.

The Absolute Joy of Intact Survival

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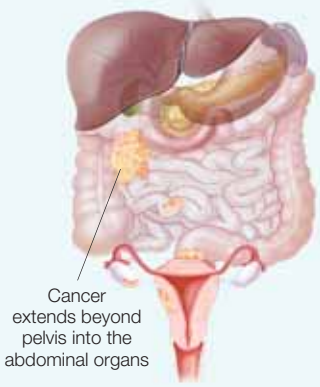
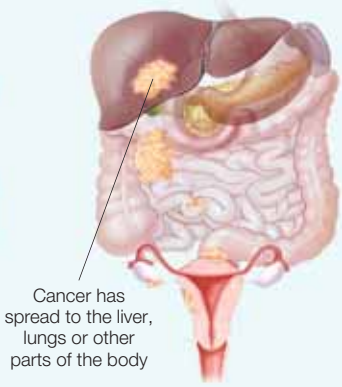
SCS Women's Gynaecological Cancer Awareness Month (WGCAM) 2014 was a very special one for me because it was around this time that a young woman I had treated for ovarian cancer delivered a healthy baby! The team at NUH had the opportunity to care for her from the time she had first presented with abdominal bloating and pain and was found to have ovarian cancer, through to her fertility-sparing surgery and subsequent chemotherapy. We were all invited to her wedding, held midway through to her chemotherapy, and cried when she walked down the aisle. What a beautiful blushing bride she was…and what a backstory!! Of course, she went on to top it all by delivering a healthy baby boy! This year was indeed sweeter than it usually is for me. So I was certainly in a hopeful and positive frame of mind when the invitation came along for me to say something about cancer and pregnancy to all of you through the Singapore Cancer Society's excellent publication, Cancer Focus. Thank you for letting me share some of my thoughts.

Stage 1

Stage 2



Stage 3



Stage 4

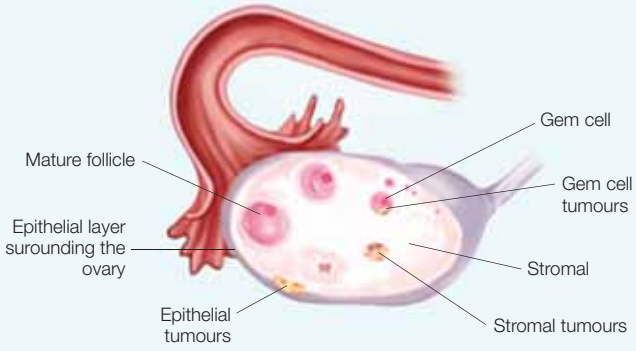
Firstly, ovarian cancer continues to kill more Singaporean women than any of the the other gynaecological cancers. It is a time for reflection, to realise that we still have long way to go. CA125 blood test markers, frequent ultrasounds, and other tests have all fallen short of being able to alert women to the presence of early ovarian cancer. The fact remains that if a woman has her ovarian cancer treated before it spreads out of the ovary (stage I ovarian cancer), she has a better than 90% chance of beating the cancer and living fully and cancer-free after treatment. However, once the cancer spreads outside of the pelvis, survival rates drop significantly to the neighbourhood of 20%. Cancer that has spread is harder to treat with surgery and less likely to be responsive to other treatments such as chemotherapy. The best defense that a woman has against ovarian cancer is still getting to know her body and listening carefully to it… simply, this means not ignoring symptoms of persistent abdominal pain, bloating or discomfort, and not glossing over the fact that you may frequently feel the urge to urinate but pass only a little or no urine when finally on the toilet.

Secondly, I think it is also important for every reader to hear a cautionary tale. I had the opportunity to take care of a young patient who was found to have an early gynaecological cancer but declined the offer of timely treatment. Whether this was because she was burdened by misconceptions about surgery, chemotherapy, and cancer treatment or that she could not come to terms with the fact that she, a young person and a newly expectant mother had cancer, the fact remained that she declined all treatment and ultimately succumbed to her disease. I hope every reader understands that the very first step that every cancer survivor has taken to beat cancer is realising that they had a condition that needed treatment. A lifeline can be thrown to you, but YOU have to grab it.

Thirdly, cancer, especially women's cancers, do not usually afflict young women of reproductive age. Gynaecological cancers such as cervical, endometrial, and ovarian cancers occur most often in women in their 60s and 70s. A simple way to understand the process is to imagine small amounts of damage over a lifetime. In susceptible women, this accumulated damage manifests as cancer. The fact that cancer tends to occur in women well into their menopausal years also explains why cancer in pregnancy isn't something that happens very often or even commonly. So, the first

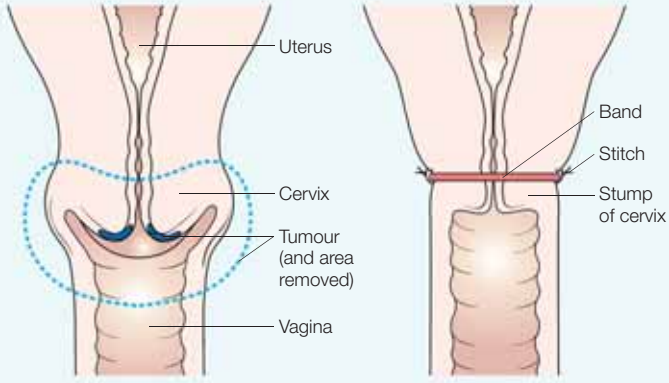
piece of good news is that gynaecological cancer does not commonly occur in young women. The next piece of good news is that the ovarian tumors that do occur in young women tend to be very chemo-sensitive and even very large tumors or very widespread disease will respond to timely chemotherapy.

So which are the gynaecological cancers that tend to affect young women? Ovarian tumours are the most common with Germ Cell Tumours being the most common type of ovarian tumour to occur in a young woman. Endometrial or lining of the womb cancers are a distant second with cervical cancer becoming less and less common in Singaporean women of all ages, let alone in the young.



We've already established that with the proper treatment and close surveillance, young women with gynaecological cancers can not only survive their cancer but retain their ability to get pregnant (fertility preservation). These young women often receive "non-standard" treatment for gynaecological cancers. This is because the standard of care in the treatment of gynaecological cancers often involves the loss of function of the female reproductive organs. This loss of function can come in the form of surgical removal of the reproductive organs, in part or whole, or radiation therapy, after which the treated organs such as the womb and ovaries lose their reproductive function. The care team, together with the patient, undertakes the risks of "non-standard" treatment in return for the potentially life-changing benefits of retaining the ability to get pregnant and have biological families of their own.

Fertility-sparing surgical treatment should be considered in managing young women presenting with ovarian and cervical cancers. In ovarian cancer, if the womb and at least one ovary can be salvaged, then these apparently normal organs are not surgically removed. Surgery is usually followed by chemotherapy, which ensures that residual cancer cells are eradicated without affecting the function of the remaining ovary and womb. Depending on the amount of residual ovarian tissue, young women undergoing this treatment can expect to have normal menstrual periods again within 3 months of completing chemotherapy. In the case of early cervical cancer, the cervix can be



Radical Trachelectomy

surgically removed whilst retaining the womb. This surgery is called a radical trachelectomy. The opening of the womb is secured to prevent pregnancy loss. As such, young women who undergo a trachelectomy for cervical cancer can get pregnant normally but will need to have a cesarean section to deliver babies that they successfully carry to term.

At the National University Cancer Institute, Singapore (NCIS) and at the National University Hospital (NUH), my team and I have had the opportunity to care for quite a number of young women with gynaecological cancers and I am thankful that we continue to have success stories to celebrate; I applaud the courage of these young women who face their cancer diagnosis head on, who brave cancer treatment and the risks of not having standard cancer treatment to beat the odds and not only survive their cancers but survive intact and whole! It is these women for whom I say a special prayer of thanks every year at WGCAM!

Tips on Maintaining the Health Of
the Female Reproductive System

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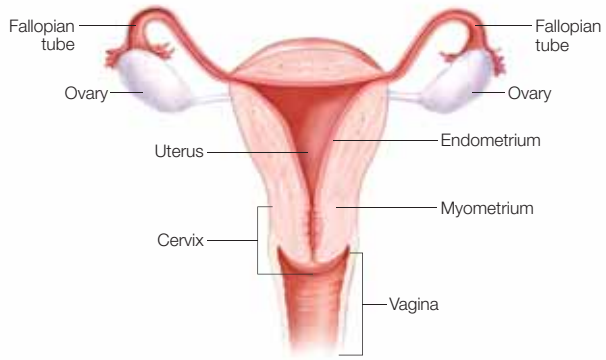
The human female reproductive system is also called the female genital system. It consists of two main parts: the uterus and the ovaries.

The uterus is further subdivided into the uterine body (otherwise known as the womb, whose main function is holding the baby before it is born) and the uterine cervix (which serves as the entrance or gate to the womb). The ovaries host ovum or eggs and at regular intervals, release an ovum which can then be fertilised by sperm during sexual intercourse, leading to pregnancy and childbirth.

The lesser known parts of the female genitalia include the fallopian tubes which connect the ovaries to the uterus, and the vagina. These parts are internal. The external parts consists of the vulva, labia, and clitoris.



The female internal reproductive organs are the vagina, uterus, uterine tubes (Fallopian tubes, oviducts), and ovaries.

Are the female genitalia susceptible to cancer?

It is important to keep the health of the female genital organs because cancers in the gynecologic organs constitute 3 of the top 10 female cancers. Some of these cancers are easily screened or detected at an early stage.

What is Ovarian Cancer?

Ovarian cancer refers to malignant growth arising from the ovaries. The most common ovarian cancers are called "epithelial" as this arises from the "skin" (epithelium) of the ovary. The less common ovarian cancer arises from the "internal parts" of the ovary, either from the egg cells (germ cell tumour) or supporting cells (sex cord/stromal). Finally there are extremely rare cancers that are from the lymph cells of the ovary, also known as lymphoma of the ovary. This is extremely uncommon.

Ovarian cancer is the 5th most common cancer in Singapore and usually affects older women while germ cell cancers of the ovary occur more frequently in younger women. The causes and associations include late pregnancy but early onset of menstruation, later menopause, a family history of ovarian cancer, and endometriosis.

Ovarian cancer is known to be rarely genetic in some families with genetic mutations such as the BRCA gene abnormalities or Lynch syndrome. In women who have a first degree relative (sister or mother) with this disease, the risk of developing ovarian cancer is increased twenty-fold. Unfortunately, ovarian cancers are the most difficult to prevent or detect early because they rarely have early symptoms or signs. Symptoms such as tummy discomfort, bloating, and change in bowel habits tend to signify later ovarian cancer. Although a marker in the blood, called CA125, is raised in about 80% of patients with epithelial ovarian cancers, it is not always accurate for early diagnosis. This is because it can also be raised in non-cancerous conditions such as endometriosis and appendicitis.

There is currently no widely accepted and effective screening test for ovarian cancer. However, if there is a strong family history of breast or ovarian cancer, it may be appropriate for that woman to go for genetic counseling and testing. The need for such a screening technique is individualised because different people have different risks.

HEALTH TIP 1:

If a woman is slim, at any signs of abdominal bloating and discomfort, women can get checked with ultrasound and blood tests to detect early ovarian cancer.

HEALTH TIP 2:

A woman with a strong family history of breast or ovarian cancer should see her gynecologist once every year to get a check up and an ultrasound. Women with very strong family history should consider getting a BRCA mutation testing followed by consideration of prophylactic oophorectomy.

What is Uterine Cancer?

Cancer of the uterus is the most common cancer of the female genital tract in Singapore. The most common type is that which affects the lining of the uterus. The less common type is that from the muscular layer (sarcoma). Uterine cancer is usually found early and if treated, the cure rate is more than 90%. In Singapore, the majority of uterine cancer cases involve women between 50 and 70 years old. Women who are obese, have early menarche and late menopause, or who are on oestrogen only hormone replacement therapy may be at risk for this cancer.

A woman may have some or all of the risk factors described here and never have uterine cancer. But women at risk should be aware of the symptoms of uterine cancer and discuss their concerns with their doctor. Regular check-ups, including pelvic examinations, are important. About 75% of the women diagnosed with uterine cancer have stage I disease. Of these women, 85 - 90% will have no evidence of cancer 5 years or more after treatment. After surgery, some patients may benefit from adjuvant radiation and chemotherapy.

HEALTH TIP 1:

Although there is no simple way to screen for uterine cancer, the key to finding the disease at an early stage is being alerted to its symptoms, which include irregular and abnormal bleeding, especially if it is post-menopausal.

HEALTH TIP 2:

Reduce the risk of endometrial cancer by keeping an ideal weight and body mass index (BMI). Exercise regularly about 150 min a week. A low fat diet can also go a long way in preventing cancer.

HEALTH TIP 1:

Women who are sexually active should go for pap smears yearly, while women who have had consecutive 3 Pap smears could reduce the frequency to 2 yearly. Women who have an HPV testing on the cervical smear performed and the results were normal could get the regular Pap smears once every 5 years.

HEALTH TIP 2:

Women are concerned about a high risk of cervical cancer should consider getting vaccinated before they start any sexual relationship. The earlier they have the vaccination, the stronger the immune response would be.

What is Cervical Cancer?

Most cervical cancers arise from the inner lining of the cervix. If exposed to infection from the Human Papilloma Virus, and should the cervix be unable to clear the infection over a period of time, the cells lining the cervix may develop pre-cancerous changes called "Cervical Intra-epithelial Neoplasia (CIN)" and eventually turn into cancer cells if left untreated. Women who are at risk tend to start sexual intercourse at an early age, have multiple sexual partners, smoke, or have a history of sexually transmitted disease. However, because of education, women who are at high risk generally go for screening and are treated at the CIN stage. Therefore, cervical cancer has become less common these days. Most cervical cancer occurs in women who do not go for regular screening, have never done a Pap smear or even heard of it.

There are no symptoms of cervical cancer in the early stages. In late stages, vaginal bleeding after sexual intercourse, abnormal vaginal bleeding between periods, discomfort during sexual intercourse, and foul vaginal discharge are some symptoms.

Because cervical cancer can take up to 5-10 years to develop from CIN, screening using regular Pap smears can detect CIN early enough so that it can be managed before it reaches the cancerous stage. As such, it is important to go for regular Pap smears.

Healthly Lifestyles to Prevent Gynaecological Cancers

Article contributed by
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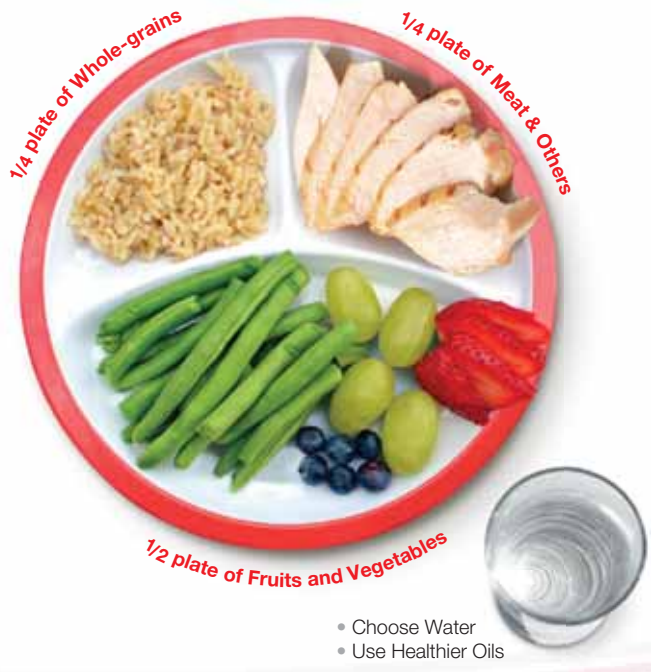
Gynaecological cancers are cancers that start in a woman's reproductive system. In Singapore, the most common gynaecological cancers are uterine cancer, ovarian cancer and cervical cancer. In fact, all women are at risk of gynaecological cancers. There are a number of risk factors that make a woman more likely to get gynaecological cancers. Some of the risk factors cannot be changed, such as age and family history of cancer; some others can be changed, such as unhealthy diet, obesity, inactivity, having unprotected sex, and smoking. Worldwide studies suggest that it is critical to eat a balanced diet, exercise regularly, and achieve and maintain a healthy weight. This would be helpful to not only reduce the risk of developing gynaecological cancers but also to assist gynaecological cancer patients to stay strong during cancer treatment. How can women adjust their daily diet and lifestyles to keep gynaecological cancers away?

Diet

It is crucial to have a healthy diet to lessen the risk of gynaecological cancers. The key is to eat a diet rich in fruits and vegetables in a variety of colours, and to choose high-dietary fibre, low-salt, and low-sugar foods. The right balance of daily meals would be beneficial to maintain the normal functions of the body. You can refer to the Healthy Plate when choosing portions of different foods for each meal:



Fill half your plate with fruits and vegetables. Fruits and vegetables, rich in vitamins, minerals and dietary fibres, are an important part of each meal. They are high in anti-oxidants and phytochemicals, which can help fight against carcinogens that damage the body's cells. Anti-oxidants and phytochemicals also promote cell regeneration and tissue repair. As fruits and vegetables in different colours contain different combinations of nutrients, try to choose fruits and vegetables in a variety of colours, such as dark green, orange, yellow, purple and red. **Fill a quarter of your plate with whole-grains**, such as brown rice, whole wheat bread and oatmeal. Besides providing the energy the body needs, these healthy carbohydrates also supply you various vitamins (vitamin B and E etc), minerals (iron, zinc and magnesium etc), phytochemicals (phytosterols etc), and dietary fibres which can be helpful to reduce the risk of cancers. Try not to choose white rice or white bread as many nutrients are lost during its processing. **Fill a quarter of your plate with meat and other foods**. It is suggested to have low-fat and high-protein foods, such as chicken without skin, fish, beans, tofu, and nuts. These foods are beneficial to build muscle, protect skin and bone, and promote tissue repair.

Early gynaecological cancers often cause no symptoms and most cases aren't diagnosed until it's too late. Therefore, it is crucial to find effective strategies for the prevention of gynaecological cancers. There is mounting evidence that high consumption of certain vegetables reduces the risk of ovarian cancer and prolongs the survival of women with ovarian cancer. These vegetables include cruciferous vegetables such as broccoli, cabbage, cauliflower, Chinese cabbage, and brussels sprouts. The anti-cancer effect could be due to high levels of phytochemicals (such as dithiolthiones, isothiocyanates) contained in cruciferous vegetables. Such chemicals enhance the activity of carcinogen-detoxifying enzymes, thus leading to the detoxification of the carcinogens. Besides, high levels of indole-3-carbinol found in cruciferous vegetables, these also reduce the risk of estrogen-related cervical cancer, ovarian cancer, and breast cancer.

What foods should be consumed less to reduce the risk of gynaecological cancers? First of all, fried food. In this fast paced society we live in today, we are all caught up in the hustle and bustle of life. Our daily diets are filled with fast foods such as fried chicken wings and fish and chips. In fact, a number of studies show that fried foods are closely linked with certain types of gynaecological cancers, such as ovarian cancer and uterine cancer. Among the carcinogens in fried foods, acrylamide is the chemical that many researchers have focused on in recent years. Acrylamide is a natural by-product during high-temperature processing (≥120°C). Potato chips and French fries were found to contain higher levels of acrylamide compared with other foods. A number of studies found an excess of endometrial and ovarian cancer associated with higher levels of acrylamide exposure. Experts suggest limiting consumption of fried foods and avoiding consumption of burnt foods to reduce the intake of acrylamide.

Obesity

Obesity is one of the most common health issues, especially among urban populations. Eating has become the simplest and most common channel to release stress. However, overweight females (Body Mass Index, BMI>25) or obese females (BMI>30) have a higher risk of developing gynaecological cancers. For example, in comparison with women who maintain a healthy weight, uterine cancer is twice as common in overweight women and more than three times as common in obese women. This could be due to fat tissue changing some other hormones into estrogen. Having more fat tissue can increase a woman's estrogen levels and subsequently enhance her uterine cancer risk. Various studies also suggest that obese women have a higher risk of developing ovarian cancer.

To reduce the risk of developing gynaecological cancers, a personalised step-by-step plan is needed to achieve and maintain a healthy weight. The ideal programme is to control the intake of fat and exercise regularly with strength training. Try to maintain a balanced diet and to eat until you are 70% full only.

Exercise

Exercise has multiple benefits to maintain our physical and psychological health. Exercise can help prevent excess weight gain and expel toxins through sweating. Exercise also stimulates various brain chemicals that may leave you feeling happier and more relaxed.

A study from Public Health Agency of Canada reveals that moderate physical activity reduces the risk of ovarian cancer. They analysed data from self-administered questionnaires of 441 ovarian cancer patients and 2,135 females without ovarian cancer. Their result suggested that women with increasing levels of moderate physical activity had 33% less risk of having ovarian cancer, whereas intense physical activity showed no reduction on ovarian cancer risk. One possible explanation is that, moderate exercise helps to boost the immune and anti-oxidant systems to lessen the risk of ovarian cancer, especially among obese women. This study supports the theory that regular exercise and a healthy lifestyle can prevent gynaecological cancers.

How much physical activity do adults need? Aim for 150 minutes of physical activity every week for a healthier you. Many might complain that they do not have the time to exercise due to busy life schedules. In fact, physical activity can be performed anytime, anywhere, whether you are at work or at home, while commuting or during your leisure time. It could be a good start to have simple activities like doing household chores or taking the stairs instead of the lift. Make sure to plan your exercise based on your physical conditions and try to choose the exercise you like and get it started gradually.

In summary, having a healthy lifestyle is one of the keys to preventing gynaecological cancers. It is crucial for females to maintain healthy life habits, such as eating more vegetables and fruits, less high-fat and deep fried foods, and exercising regularly. In addition, have regular medical check-ups and be alert to the changes of your body conditions. Do seek immediate medical attention if you experience symptoms such as abnormal vaginal bleeding, pelvic pain or pressure and menstrual abnormalities.

健康生活，远离妇科肿瘤

撰写
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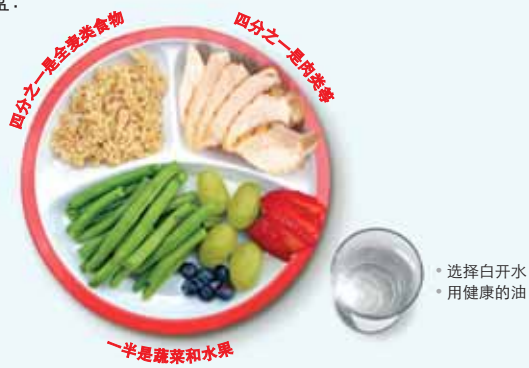
妇科肿瘤生长在女性的生殖器官。在新加坡最常见的妇科肿瘤有子宫内膜癌、卵巢癌和宫颈癌。事实上，所有的妇女都有罹患妇科肿瘤的风险。在导致女性患上妇科肿瘤的诸多因素当中，有一些是不能改变的，例如年龄、家族肿瘤史等，而有一些是可以改变的，例如不健康的饮食，肥胖，缺少运动，无保护的性行为，吸烟等等。世界各地的研究表明，维持均衡的饮食，坚持经常运动，保持适当的体重，既能够降低患上妇科肿瘤的风险，也可以帮助妇科癌症病患在对抗癌症的过程中强健体魄。那么，在我们的日常生活中，要如何调整饮食和生活习惯才能尽可能地远离妇科肿瘤呢?

饮食

为了减少患上妇科肿瘤的风险，养成健康的饮食习惯尤为重要。对抗妇科肿瘤的关键是食用各种颜色的水果和蔬菜，高膳食纤维，低盐和低糖的食物。每餐选择适当均衡的饮食，能帮助身体机能正常运作。在为每餐选择不同的食物时，我们可以参考以下的健康餐盘:



你的餐盘应该有一半是蔬菜和水果。蔬菜和水果是每餐的重要组成部分，富含维生素、矿物质和膳食纤维。同时，蔬菜和水果中的抗氧化剂和植物化学素可以对抗致癌物对人体细胞的破坏，也能促进人体细胞和组织的修复。由于不同颜色的蔬菜和水果含有不同的营养素，尽量选择多种颜色的蔬菜和水果，如深绿色，橙色，黄色，紫色和红色。**餐盘的另外四分之一最好是全麦类食物**，例如糙米饭，全麦面包和燕麦。这些健康的碳水化合物不仅提供人体所需的能量，还能帮助你每天得到适量的维生素(维生素B和E等)，矿物质(铁，锌和镁等)，植物化学素(植物固醇等)和膳食纤维，这些物质都有助于降低患上癌症的风险。请尽量少选择白米或白面包，因为在其加工过程中很多的营养物质都丢失了。**你的餐盘剩下的四分之一就是肉类等**。最好选择一些低脂肪、高蛋白的食物，例如去皮的鸡肉、鱼肉、豆类、豆腐和坚果类。这类食物有助于强健肌肉，保护皮肤和骨骼，还能够促进人体组织的修复。

很多妇科肿瘤在早期没有明显的症状，所以很容易错过治疗的最佳时机。因而，找到有效的辅助预防手段非常重要。多项流行病学研究表明，多吃某些蔬菜，可以对预防女性卵巢癌起到辅助作用，并可延长癌症病患的存活时间。具体的蔬菜种类包括十字花科蔬菜，如花椰菜(花菜)、甘蓝菜、白花椰菜、圆白菜、球甘蓝等。长期大量食用这些蔬菜的卵巢癌患者存活时间较久。其原因可能是由于十字花科的蔬菜含有较多的双硫氢硫基、异硫氰酸酯等化合物，可以增强致癌物解毒酶的活性，从而使致癌物降解。十字花科蔬菜还含有较高水平的吲哚-3-甲醇，可以减低与雌激素相关的子宫内膜癌、卵巢癌和乳癌的发生。

那么，为了减少罹患妇科肿瘤的风险，有什么食物应该尽量少吃? 首当其冲的是油炸食品。由于生活节奏的加快，使很多人走进了饮食误区：经常配有油煎鸡蛋、炸鱼块、炸鸡翅的西式快餐，已成为现代都市人群的家常便饭。事实上，经常进食油煎或油炸的蛋类或肉类，有害物质长期在体内堆积而可能成为诱发妇科肿瘤的隐形杀手。多项研究表明，油炸食物和多种妇科肿瘤的发生有着密切的联系，例如卵巢癌、子宫内膜癌。煎炸食品所含有的致癌物当中，近代研究较多的是丙烯酰胺(acrylamide)。在食物内，丙烯酰胺会在超过120°C高温处理过程中产生，并非人为添加，其含量多少受多种因素影响，在薯片和炸薯条中的含量较高。研究显示，长期大量摄入含丙烯酰胺的事物可能导致卵巢癌和子宫内膜癌的发生率增高。专家呼吁人们平衡膳食，多吃蔬菜水果，食用油炸食品要适量，避免进食烧焦的事物以减少丙烯酰胺的摄入量。

肥胖

肥胖是现在最普遍的健康问题之一，尤其是都市人群步调快，压力大，吃成为大家最常用和最简单的宣泄压力的管道之一。然而，女性如果超重(身体质量指数，BMI>25)或肥胖(BMI>30)，患妇科癌症的风险会增加。例如，与正常体重的女性相比，体重超重的女性罹患子宫内膜癌的风险会高出两倍，而肥胖的女性患子宫内膜癌的风险会高出三倍。其原因可能是由于脂肪组织可以将其他的激素转化为雌激素，过多的脂肪组织会提高女性雌激素水平，继而增加她的子宫内膜癌的发病风险。近年来也有相关研究发现，肥胖与部分卵巢癌的发病有密切联系。

要降低子宫内膜癌等妇科肿瘤的发病率，维持正常体重很重要，应该制订一个循序渐进和切实可行的计划。最理想的组合方案是控制脂肪的摄入，加强锻炼和力量训练。同时，尽量作到吃饭不偏食，只吃七分饱。

运动

运动对维持人体身心健康有多方面的益处。运动可大大减少体内多余的脂肪，并可将体内的有害物质随汗水排出体外。运动也可以使你感觉愉悦放松，从而减轻人体免疫系统的压力。

一项加拿大公共卫生署的研究表明，经常进行适量的体育运动可能有助于降低女性患卵巢癌的危险。他们对442名患卵巢癌患者和未患卵巢癌的2135名女性进行了问卷调查。调查结果显示，适量运动最多的女性患卵巢癌的危险减少了33%，剧烈运动却没有这种预防效果。一种可能的解释是，适量的运动有助于增强免疫和抗氧化系统，减少肥胖对女性罹患癌症的危险。该研究支持了进行有规律运动、采用健康生活方式可预防妇科肿瘤发展的理论。

成年人需要多少的运动量呢? 为了更健康，建议大家每周至少进行150分钟的运动。许多人可能会抱怨工作和生活繁忙，没有时间去做运动。其实，在日常生活中可以创造许多运动的机会，比如少坐电梯选择爬楼梯或者在上下班的时候快步走。最后要强调的是，运动应以自己体力所能负荷为限，选择自己喜欢的运动方式，循序渐进，切勿过度勉强。

综上所述，健康生活方式是预防妇科肿瘤的重中之重。女性平时要养成良好的生活习惯，生活起居要有规律，多吃蔬菜、水果，少吃高脂肪、油炸类食品；经常运动，比如散步、游泳、瑜伽等。此外，还要坚持定期体检并注意身体状况的变化，异常阴道出血、经期异常、下腹部疼痛或压迫感等症状都可能是妇科肿瘤的潜在症状，一旦出现应及时就医。

SINGAPORE CANCER SOCIETY

SINGAPORE CANCER SOCIETY was established in 1964. It has since taken a leading role in cancer prevention and control.

As a self-funded voluntary welfare organisation, funds are needed to support its various programmes and free services.

Our Mission

Singapore Cancer Society is a community-based voluntary health organisation dedicated to minimising the impact of cancer through public education, screening, patient services, financial assistance, research and advocacy.

Our Vision

To be the leading cancer organisation in Singapore and the region, with a reputation for effective programmes for the prevention and control of cancer.

Our Programmes:

1. **Financial Assistance**
   - Cancer Treatment Fund (Cancer treatment subsidies for cancer patients)
   - Welfare Aid for needy cancer patients
2. **Free Cancer Screening**
   - Pap smear test (For Cervical cancer)
   - Health Education: Breast Self-Examination
   - Faecal Immunochemical Test [FIT] (For Colorectal cancer)
3. **Public Education**
   - Cancer awareness campaigns
   - Cancer-related talks and forums
   - Cancer information (via website & telephone service)
4. **Rehabilitation Support**
   - Support group activities for cancer patients
5. **Hospice Care Services**
   - Medical and psycho-social care for terminally ill cancer patients
6. **Cancer Research**
   - Cancer research grants and awards
7. **Volunteer Management**
   - Volunteering opportunities to suit people with different interests and skills

How You Can Help Us

There are many ways in which you can donate to Singapore Cancer Society and help us in our fight against cancer. You may donate online via SG Gives at www.sggives.org/cancersociety or donate to us via GIRO. Please call 6421 5861 or email fund_raising@singaporecancersociety.org.sg for details on donating via GIRO. More information can be found on our website at www.singaporecancersociety.org.sg.

Volunteer Your Time

Volunteers share a special relationship with us. The time and efforts rendered by them help make a real difference to people who are affected by or living with cancer. The time contributed by volunteers enables us to extend and develop the quality and scope of our services. Please help us in our fight against cancer by being a volunteer.

Email: volunteers@singaporecancer society.org.sg.

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What's NEW!

SCS Cancer Rehabilitation Services

SCS has launched Singapore's first community-based cancer rehabilitation centre. It provides specialised cancer rehabilitation programmes and services to people living with cancer in a holistic and integrated manner to enhance their daily function and quality of life.

The SCS Rehabilitation Centre is located at:

52 Jurong Gateway Road
#08-04 JEM Office Tower
Singapore 608550

6661 0590

rehab@singaporecancersociety.org.sg

Calendar of Events

14 NOVEMBER
Official Opening of SCS Mammogram Facility @ Bishan

SCS Rehabilitation Centre @ JEM begins operations

SCS Sharing of Love

Every month, the Society distributes food rations to low-income families to help defray their monthly household expenses. Corporates and individuals are invited to participate by helping to distribute food packs as well as befriend beneficiaries. Register by contacting **Enya at 6421 5862** or **volunteers@singaporecancersociety.org.sg.**

Educational Talks

SCS conducts educational cancer talks for companies at no cost. Topics include a general cancer presentation and specific cancers such as Colorectal, Breast, Lung, Cervical, Ovarian, Uterine, Prostate, and Gastric cancers, which are the top cancers in Singapore. If you are keen to organise a session for your company, contact **Ajay Nair at 6421 5833** or **education@singaporecancersociety.org.sg.**