

# Cancer Association of South Africa (CANSA)

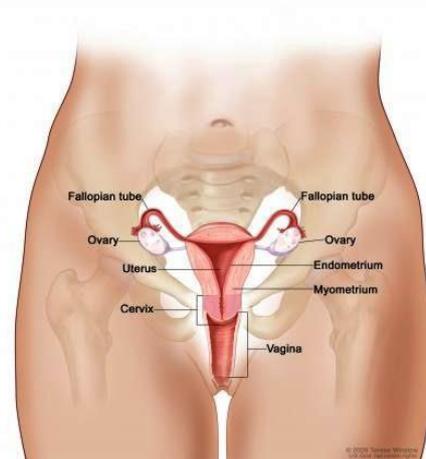


## Fact Sheet On Ovarian Cancer

### Introduction

The ovaries form part of the female reproductive organs that house the ova and are also responsible for the production of sex hormones. The ovaries are paired organs located on either side of the uterus within the broad ligament below the uterine (fallopian) tubes. Each ovary is within the ovarian fossa, a space that is bound by the external iliac vessels, obliterated umbilical artery, and the ureter. The ovaries are responsible for housing and releasing ova, or eggs, necessary for reproduction. At birth, a female has approximately 1-2 million ova, but only about 300 of these eggs will ever become mature and be released for the purpose of fertilisation.

[Picture Credit – Ovarian Anatomy]



### Ovarian Cancer

Ovarian cancer is cancer of the cells of one or both ovaries.

### Incidence of Ovarian Cancer in South Africa

According to the National Cancer Registry (2014) the following number of ovarian cancer cases was histologically diagnosed in South Africa during 2014:

Group - Females 2014	No of Cases	Lifetime Risk	Percentage of All Cancer
All females	518	1:387	1,37%
Asian females	22	1:248	3,36%
Black females	194	1:777	1,20%
Coloured females	42	1:457	1,02%
White females	260	1:134	1,58%

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The frequency of histologically diagnosed cases of ovarian cancer in South Africa for 2014 was as follows (National Cancer Registry, 2014):

Group - Females 2014	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All females	4	18	23	73	111	161	93	30
Asian females	1	0	0	2	8	7	4	0
Black females	3	15	17	28	39	48	28	9
Coloured females	0	1	1	8	7	15	6	3
White females	0	2	4	33	56	86	64	18

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

### Causes of Ovarian Cancer

It is not clear what causes ovarian cancer. In general, cancer begins when healthy cells acquire a genetic mutation that turns normal cells into abnormal cells. Healthy cells grow and multiply at a set rate, eventually dying at a set time. Cancer cells grow and multiply out of control, and they do not die. The accumulating abnormal cells form a mass (tumour).

### Risk Factors for Ovarian Cancer

The risk for developing ovarian cancer appears to be affected by several factors:

- The more children a woman has and the earlier in life she gives birth, the lower her risk for ovarian cancer
- Certain genes defects (BRCA1 and BRCA2) are responsible for a small number of ovarian cancer cases. Women with a personal history of breast cancer or a family history of breast or ovarian cancer have an increased risk for ovarian cancer
- Women who take oestrogen replacement only (not with progesterone) for 5 years or more seem to have a higher risk of ovarian cancer
- Birth control pills decrease the risk of ovarian cancer.
- Being infertile or having fertility treatment
- Using a coil (intra-uterine device (IUD))
- Older women are at highest risk for developing ovarian cancer. Most deaths from ovarian cancer occur in women age 55 and older
- Research suggests that the risk of ovarian cancer is slightly higher for women who:
  - have medical conditions such as endometriosis
    - smoke tobacco products
    - are obese
    - are tall

### Ovarian Cancer and Use of Talc

There have been several lawsuits in the United States of America against the manufacturer of a popular brand of baby powder which contains talc. Retrospective research was conducted by Cramer, *et al.* (2016). They concluded that multiple studies of ovarian cancer and genital talc use have led only to consensus about possible carcinogenicity. Risks for epithelial ovarian cancer from

genital talc use vary by histologic subtype, menopausal status at diagnosis, hormone therapy use, weight, and smoking. These observations suggest that oestrogen and/or prolactin may play a role via macrophage activity and inflammatory response to talc.

### **Protective Factors for Ovarian Cancer**

There's currently nothing that can be done to prevent ovarian cancer. However, there are some things that are thought to protect against ovarian cancer. These are called protective factors. Women with protective factors may still develop ovarian cancer.

Getting enough vitamin D may reduce your risk of developing a number of cancers, including ovarian cancer – although more research needs to be done to be certain.

Research has shown that the following may be associated with a reduced risk of certain types of ovarian cancer:

- removal of the uterus (womb)
- removal of the ovaries
- having the fallopian tubes tied
- having the fallopian tubes removed
- having been pregnant
- using oral contraceptives

### **Prophylactic Oophorectomy**

Prophylactic oophorectomy may significantly reduce one's odds of developing breast cancer and ovarian cancer if one is at high risk. One should weigh the pros and cons of this cancer-prevention option in collaboration with an oncology geneticist and a medical practitioner.

#### Who can consider prophylactic oophorectomy?

Prophylactic oophorectomy is usually reserved for women with a significantly increased risk of breast cancer and ovarian cancer due to an inherited mutation in the BRCA1 or BRCA2 gene - two genes linked to breast cancer, ovarian cancer and other cancers. Women who have inherited mutations and have completed childbearing are the best candidates for this surgery.

Prophylactic oophorectomy may also be recommended if one has a strong family history of breast cancer and ovarian cancer but no known genetic alteration. It might also be recommended if one has a strong likelihood of carrying the gene mutation based on one's family history but choose not to proceed with genetic testing.

Women who are at risk, could consider this procedure as follows:

- Having a BRCA1 gene mutation: age 35 to 40
- Having a BRCA2 gene mutation: age 45 and older

## **Types of Ovarian Cancer**

The type of cell where the cancer begins determines the type of ovarian cancer you have. Ovarian cancer types include:

- Cancer that begins in the cells on the outside of the ovaries. Called epithelial tumours, these cancers begin in the thin layer of tissue that covers the outside of the ovaries. Most ovarian cancers are epithelial tumours
- Cancer that begins in the egg-producing cells. Called germ cell tumours, these ovarian cancers tend to occur in younger women
- Cancer that begins in the hormone-producing cells. These cancers, called stromal tumours, begin in the ovarian tissue that produces the hormones oestrogen, progesterone and testosterone
- The type of ovarian cancer you have helps determine your prognosis and treatment options

## **Symptoms of Ovarian Cancer**

Many ovarian cancer symptoms mimic those of less life-threatening conditions such as irritable bowel syndrome. These symptoms may include:

- Bloating
- Pelvic or abdominal pain
- Urinary urgency or frequency
- Difficulty eating or feeling full quickly

## **Further Late Stage Symptoms of Ovarian Cancer**

- Spread of the cancer to other organs
- Loss of organ function
- Fluid in the abdomen (ascites)
- Blockage of the intestines

## **Early Detection of Ovarian Cancer**

Early detection of ovarian cancer saves women's lives. No screening test exists that can test all women for ovarian cancer. The Pap test does not test for ovarian cancer; it screens for cervical cancer.

## **Diagnosis of Ovarian Cancer**

In someone showing the symptoms mentioned above, the doctor may order one or more of the following tests:

Ultrasound - Ultrasound (ultrasonography) is the use of sound waves to create an image on a video screen. Sound waves are released from a small probe placed in the woman's vagina or on the surface of her abdomen. The sound waves create echoes as they enter the ovaries and other organs. The

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same probe detects the echoes that bounce back, and a computer translates the pattern of echoes into a picture.

Computed Tomography - The CT scan is an x-ray procedure that produces detailed cross-sectional images of your body. Instead of taking one picture, like a conventional x-ray, a CT scanner takes many pictures as it rotates around you. A computer then combines these pictures into an image of a slice of your body. The machine will take pictures of multiple slices of the part of your body that is being studied.

Barium Enema X-ray - This is a test to see whether the cancer has invaded the colon (large intestine) or rectum (it is also used to look for colorectal cancer). After taking laxatives the day before, the radiology technician puts barium sulphate, a chalky substance, into the rectum and colon. Because barium is impermeable to x-rays (impossible for x-rays to go through), it outlines the colon and rectum on x-rays of the abdomen.

Magnetic Resonance Imaging - MRI scans use radio waves and strong magnets instead of X-rays. The energy from the radio waves is absorbed and then released in a pattern formed by the type of tissue and by certain diseases. A computer translates the pattern of radio waves given off by the tissues into a very detailed image of parts of the body.

Chest X-ray - This procedure may be done to determine whether ovarian cancer has spread (metastasized) to the lungs.

Positron Emission Tomography (PET scan) - In this test, radioactive glucose (sugar) is given to look for the cancer. Because cancers use glucose (sugar) at a higher rate than normal tissues, the radioactivity will tend to concentrate in the cancer. A scanner can spot the radioactive deposits.

### Staging of Ovarian Cancer

Staging of ovarian cancer is done as it assists the oncologist in deciding treatment.

### Where Ovarian Cancer May Spread to in the Body

Should ovarian cancer spread (metastasise) in the body, it would most probably spread as indicated below:

Cancer Type:	Main Sites of Metastasis (Spread)
Bladder	Bone, liver, lung
Breast	Bone, brain, liver, lung
Colon	Liver, lung
Colorectal	Liver, lung, peritoneum (lining of abdomen)
Kidney	Adrenal gland, bone, brain, liver, lung
Lung	Adrenal gland, bone, brain, liver, other lung
Melanoma	Bone, brain, liver, lung, skin, muscle
Ovary	Liver, lung, peritoneum (lining of abdomen)
Pancreas	Liver lung, peritoneum (lining of abdomen)
Prostate	Adrenal gland, bone, liver, lung
Stomach	Liver, lung, peritoneum (lining of abdomen), ovaries
Thyroid	Bone, liver, lung
Uterus	Boner, liver, lung, peritoneum (lining of abdomen), vagina
Non-melanoma skin cancer	Very rare: lymph nodes, lung, bone (if in head/neck region)

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## **Treatment of Ovarian Cancer**

Treatment for ovarian cancer usually involves a combination of surgery and chemotherapy. Less often, treatment may include radiotherapy. The type of treatment women receive depends on the type and stage of their ovarian cancer and their general health. Treatment is best managed by a gynaecological oncologist.

### Surgery

Nearly all women who have ovarian cancer will require surgery. Sometimes, it is not possible to confirm the stage of the cancer until the surgery.

### Chemotherapy

Chemotherapy involves using anti-cancer (cytotoxic) drugs to kill cancer cells. It is often given after surgery for ovarian cancer. In some cases, it can be given before surgery as it may help to shrink the tumour and make it easier to remove. This is called neo-adjuvant chemotherapy.

### Radiotherapy

Radiotherapy uses high energy X-rays. Like chemotherapy, it works by targeting rapidly growing cancer cells. Radiotherapy is not often used to treat ovarian cancer. But occasionally, the multidisciplinary team may recommend it for ovarian cancer treatment under very specific circumstances, such as treating pain and bleeding from a localised tumour mass.

## **About Clinical Trials**

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

Clinical trials include:

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

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

For additional information, please visit: [www.sanctr.gov.za/](http://www.sanctr.gov.za/)

## **Medical Disclaimer**

This Fact Sheet is intended to provide general information only and, as such, should not be considered as a substitute for advice, medically or otherwise, covering any specific situation. Users should seek appropriate advice before taking or refraining from taking any action in reliance on any information contained in this Fact Sheet. So far as permissible by law, the Cancer Association of

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