Oophorectomy is the surgical removal of one or both ovaries. It is also called ovariectomy. If one ovary is removed, a woman may continue to menstruate and have children. If both ovaries are removed, menstruation stops and a woman loses the ability to have children.

**Purpose**

Oophorectomy is performed to:

* remove cancerous ovaries
* remove the source of estrogen that stimulates some cancers
* remove large ovarian cysts in women with polycystic ovarian syndrome (PCOS)
* excise an abscess
* treat endometriosis

In an oophorectomy, one or a portion of one ovary may be removed or both ovaries may be removed. When oophorectomy is done to treat ovarian cancer or other spreading cancers, both ovaries are always removed. This is called a bilateral oophorectomy. Oophorectomies are sometimes performed on pre-menopausal women who have estrogen-sensitive breast cancer in an effort to remove the main source of estrogen from their bodies. This procedure has become less common than it was in the 1990s. Today, chemotherapy drugs are available that alter the production of estrogen and tamoxifen blocks any of the effects any remaining estrogen may have on cancer cells.

In younger women with low-grade or early-stage ovarian tumors who have not yet completed their families, the surgeon may perform a unilateral oophorectomy. This approach is called fertility-saving or fertility-sparing surgery. Women who are appropriate candidates for this type of oophorectomy do not have higher rates of cancer recurrence than women who have both ovaries removed.

Until the 1980s, women over age 40 having hysterectomies (surgical removal of the uterus) routinely had healthy ovaries and fallopian tubes removed at the same time. This operation is called a bilateral salpingo-oophorectomy. Many physicians reasoned that a woman over 40 was approaching menopause and soon her ovaries would stop secreting estrogen and releasing eggs. Removing the ovaries would eliminate the risk of ovarian cancer and only accelerate menopause by a few years.

In the 1990s, the thinking about routine oophorectomy began to change. The risk of ovarian cancer in women who have no family history of the disease is less than 1%. Meanwhile, removing the ovaries increases the risk of cardiovascular disease and accelerates osteoporosis unless a woman takes prescribed hormone replacements. In addition, other studies indicate that a bilateral oophorectomy increases a woman's risk of developing thyroid cancer. Women with mild endometriosis can often be successfully treated with birth control pills or other hormone medications without having to undergo surgery.

Under certain circumstances, oophorectomy may still be the treatment of choice to prevent breast and ovarian cancer in certain high-risk women. A study done at the University of Pennsylvania and released in 2000 showed...
that healthy women who carried the BRCA1 or BRCA2 genetic mutations that pre-disposed them to breast cancer had their risk of breast cancer drop from 80% to 19% when their ovaries were removed before age 40. Women between the ages of 40 and 50 showed less risk reduction, and there was no significant reduction of breast cancer risk in women over age 50.

Overall, ovarian cancer still ranks low on a woman's list of health concerns: It accounts for only 4% of all cancers in women. But the lifetime risk for developing ovarian cancer in women who have mutations in BRCA1 is significantly increased over the general population and may cause an ovarian cancer risk of 30% by age 60. For women at increased risk, oophorectomy may be considered after the age of 35 if childbearing is complete.

The value of ovary removal in preventing both breast and ovarian cancer has been documented. However, there are disagreements within the medical community about when and at what age this treatment should be offered.

*Precautions*

There are situations in which oophorectomy is a medically wise choice for women who have a family history of breast or ovarian cancer. However, women with healthy ovaries who are undergoing hysterectomy for reasons other than cancer should discuss with their doctors the benefits and disadvantages of having their ovaries removed at the time of the hysterectomy. It is important for women to ask questions about the long-term risks of a bilateral oophorectomy; one study published in 2003 reported that many women awaiting surgery felt that they did not have adequate information about their treatment options and were unaware of the possible long-term consequences to health.

*Description*

Oophorectomy is done under general anesthesia. It is performed through the same type of incision, either vertical or horizontal, as an abdominal hysterectomy. Horizontal incisions leave a less noticeable scar, but vertical incisions give the surgeon a better view of the abdominal cavity.

After the incision is made, the abdominal muscles are pulled apart, not cut, so that the surgeon can see the ovaries. Then the ovaries, and often the fallopian tubes, are removed.

Oophorectomy can sometimes be done with a laparoscopic procedure. With this surgery, a tube containing a tiny lens and light source is inserted through a small incision in the navel. A camera can be attached that allows the surgeon to see the abdominal cavity on a video monitor. When the ovaries are detached, they are removed though a small incision at the top of the vagina. The ovaries can also be cut into smaller sections and removed.

The advantages of abdominal incision are that the ovaries can be removed even if a woman has many adhesions from previous surgery. The surgeon gets a good view of the abdominal cavity and can check the surrounding tissue for disease. A vertical abdominal incision is mandatory if cancer is suspected. The disadvantages are that bleeding is more likely to be a complication of this type of operation. The operation is more painful than a laparoscopic operation and the recovery period is longer. A woman can expect to be in the hospital two to five days and will need three to six weeks to return to normal activities.

*Aftercare*

After surgery a woman will feel some discomfort. The degree of discomfort varies and is generally greatest with abdominal incisions, because the abdominal muscles must be stretched out of the way so that the surgeon can reach the ovaries.

When both ovaries are removed, women who do not have cancer are started on hormone replacement therapy to ease the symptoms of menopause that occur because estrogen produced by the ovaries is no longer present. If even part of one ovary remains, it will produce enough estrogen that a woman will continue to menstruate, unless her uterus was removed in a hysterectomy. Antibiotics are given to reduce the risk of post-surgery infection.
Return to normal activities takes anywhere from two to six weeks, depending on the type of surgery. When women have cancer, chemotherapy or radiation are often given in addition to surgery. Some women have emotional trauma following an oophorectomy, and can benefit from counseling and support groups.

**Risks**

Oophorectomy is a relatively safe operation, although, like all major surgery, it does carry some risks. These include unanticipated reaction to anesthesia, internal bleeding, blood clots, accidental damage to other organs, and post-surgery infection.

Complications after an oophorectomy include changes in sex drive, hot flashes, and other symptoms of menopause if both ovaries are removed. Women who have both ovaries removed and who do not take estrogen replacement therapy run an increased risk for cardiovascular disease and osteoporosis. Women with a history of psychological and emotional problems before an oophorectomy are more likely to experience psychological difficulties after the operation.

**Normal Results**

If the surgery is successful, the ovaries will be removed without complication, and the underlying problem resolved. In the case of cancer, all the cancer will be removed.

**Abnormal Results**

Complications may arise if the surgeon finds that cancer has spread to other places in the abdomen. If the cancer cannot be removed by surgery, it must be treated with chemotherapy and radiation.

Ovarian remnant syndrome is a complication that results in about 18% of women who have had an oophorectomy for severe endometriosis. The syndrome is characterized by chronic pelvic pain and/or a pelvic mass; it is treated by further surgery to remove the remaining ovarian tissue.

**Key Terms**

- Cyst: An abnormal sac containing fluid or semi-solid material.
- Endometriosis: A benign condition that occurs when cells from the lining of the uterus begin growing outside the uterus.
- Fallopian tubes: Slender tubes that carry ova from the ovaries to the uterus.
- Hysterectomy: Surgical removal of the uterus.
- Osteoporosis: The excessive loss of calcium from the bones, causing the bones to become fragile and break easily.
- Polycystic ovarian syndrome (PCOS): A condition in which the eggs are not released from the ovaries and instead form multiple cysts.

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The Essay Authors are Tish Davidson, A.M., Rebecca J. Frey, PhD.