

# OVARIECTOMY

Authored by  
**mohammad looti**

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## Ovariectomy

**Primary Disciplinary Field(s):** Gynecology, Endocrinology, Health Psychology, Surgical Oncology

### 1. Core Definition and Terminology

Ovariectomy, a term often used interchangeably with **oophorectomy**, refers precisely to the surgical procedure involving the removal of one or both ovaries. This procedure is defined by the selective excision of the gonad responsible for producing ova and key reproductive hormones, including estrogen and progesterone. When only one ovary is removed, the procedure is termed a unilateral ovariectomy; conversely, the removal of both ovaries is a bilateral ovariectomy. The latter procedure, bilateral ovariectomy, immediately induces surgical **menopause**, regardless of the patient's age, due to the complete cessation of endogenous ovarian hormone production. It is crucial to distinguish ovariectomy from a **salpingo-oophorectomy**, which involves the removal of the fallopian tube along with the ovary, and from a **hysterectomy**, which is the removal of the uterus; while these procedures are often performed simultaneously (a procedure known as a total hysterectomy with bilateral salpingo-oophorectomy), ovariectomy specifically denotes the excision of the ovarian tissue itself.

The decision to perform an ovariectomy is generally reserved for severe medical necessity, balancing the potential benefits, such as cancer risk reduction or elimination of intractable pain, against the profound, immediate, and long-term hormonal and physiological consequences. The nomenclature is derived from the Greek word "ophoros," meaning egg-bearing, reflecting the primary biological function of the organ being removed. Modern surgical guidelines emphasize minimal invasiveness and preservation of ovarian function whenever medically feasible, particularly in premenopausal women, given the critical role of ovarian hormones in cardiovascular health, bone density, and cognitive function. Therefore, the contemporary approach often involves extensive counseling regarding the irreversible nature of the procedure and the necessity of subsequent hormonal management following bilateral removal.

### 2. Indications for Ovariectomy (Medical Context)

Ovariectomy is indicated for a wide range of pathological conditions, serving primarily as a therapeutic intervention for diseases that either originate in the ovaries or are hormone-dependent. One of the most common and critical indications is the presence of **ovarian cancer** or other malignant and pre-malignant masses, where removal is necessary for staging, treatment, and prevention of metastasis. For women at extremely high genetic risk, such as those carrying the **BRCA1** or **BRCA2** gene mutations, a prophylactic bilateral salpingo-oophorectomy (PBSO) is frequently recommended to drastically reduce the lifetime risk of developing ovarian and sometimes breast cancer. This risk-reducing surgery is a significant component of high-risk

gynecologic oncology management and is typically scheduled after childbearing is complete.

Beyond oncological reasons, ovariectomy is often necessary for managing severe, chronic, and treatment-refractory benign conditions. Cases of extensive **endometriosis**, where ovarian cysts (endometriomas) or widespread pelvic disease cause debilitating pain unresponsive to hormonal and minimally invasive surgical treatments, may necessitate removal as a last resort to eliminate the source of cyclic hormonal stimulation driving the disease. Similarly, large or complex ovarian cysts that pose a risk of torsion, rupture, or malignancy, or conditions involving chronic pelvic inflammatory disease leading to irreversible damage, are standard indications. The goal in these benign scenarios is pain relief and the prevention of further complications, but careful consideration is given to preserving ovarian function if the patient is premenopausal and the disease is localized unilaterally.

Furthermore, ovariectomy is sometimes employed as a component of hormonal therapy for other hormone-sensitive cancers, most notably certain types of **breast cancer**. By removing the ovaries, the primary source of estrogen is eliminated, thus starving estrogen receptor-positive tumors of the necessary growth stimulus. This practice, known as surgical ablation of ovarian function, has largely been supplemented by pharmacological agents (like LHRH agonists or aromatase inhibitors) in modern oncology, but it remains a viable option in specific clinical contexts, especially when immediate, permanent ovarian suppression is required. The medical rationale behind all indications centers on the critical assessment that the removal of the organ provides a greater health benefit than its retention.

### 3. Surgical Procedures and Techniques

The performance of an ovariectomy has evolved significantly since its inception, moving toward less invasive techniques that prioritize patient recovery and minimize trauma. Historically, ovariectomy was primarily performed via **laparotomy**, requiring a large abdominal incision. While open surgery remains necessary for complex cases, such as very large masses, extensive malignancy, or when significant scar tissue makes visualization difficult, the gold standard today for most procedures is **laparoscopic surgery**. Laparoscopy involves making several small incisions through which a camera (laparoscope) and specialized surgical instruments are inserted. This approach allows the surgeon to visualize the pelvic organs clearly and remove the ovary(ies) with high precision.

Laparoscopic techniques significantly reduce patient morbidity, resulting in shorter hospital stays, less postoperative pain, and quicker return to normal activity compared to traditional open methods. Variations of the laparoscopic approach include single-incision laparoscopic surgery (SILS) and the utilization of robotic surgical systems (robot-assisted laparoscopy). Robot-assisted procedures offer the surgeon enhanced dexterity, 3D visualization, and tremor filtration, which are

particularly advantageous when dissecting delicate tissues or operating within confined spaces. Regardless of the surgical modality chosen, meticulous care must be taken to ligate and divide the ovarian ligament and the suspensory ligament of the ovary, which contain the critical blood vessels supplying the ovary, to prevent hemorrhage.

#### 4. Psychological and Hormonal Consequences

The most immediate and significant consequence of bilateral ovariectomy in a premenopausal woman is the abrupt onset of **surgical menopause**. Unlike natural menopause, which occurs gradually over several years, surgical menopause instantly removes the primary source of sex hormones, leading to a rapid and often severe presentation of menopausal symptoms. These physical symptoms commonly include intense **vasomotor symptoms** (hot flashes and night sweats), urogenital atrophy, sleep disturbances, and a decrease in libido. Managing these symptoms typically requires immediate initiation of hormone replacement therapy (HRT), although the feasibility and safety of HRT must be carefully assessed, especially if the original indication for surgery was a hormone-sensitive cancer.

Furthermore, the psychological ramifications of ovariectomy can be profound. The loss of ovarian function, even when medically necessary, can lead to feelings of loss of femininity, changes in body image, and adjustment disorders. Studies have linked the acute hormonal withdrawal to potential increases in mood instability, anxiety, and depression. While HRT can mitigate many physical symptoms, psychological counseling and robust psychosocial support are often critical components of post-operative care. Long-term health consequences also necessitate careful monitoring, as the removal of endogenous estrogen is associated with an increased risk of **osteoporosis** and potentially adverse cardiovascular outcomes if not adequately managed through hormonal intervention or lifestyle modifications.

#### 5. Ovariectomy in the Context of Psychopathology

While ovariectomy is fundamentally a gynecological procedure, its application sometimes intersects with the field of psychopathology, particularly in severe, refractory cases of hormonally mediated mood disorders. The most notable example is **Premenstrual Dysphoric Disorder (PMDD)**. PMDD is classified in the DSM-5 as a severe, debilitating form of premenstrual syndrome (PMS) characterized by pronounced mood swings, irritability, anxiety, and depressive symptoms that cycle precisely with the menstrual phases. For the vast majority of patients, management involves selective serotonin reuptake inhibitors (SSRIs) or hormonal suppression using birth control pills or GnRH agonists.

However, as highlighted in the source material, in extremely rare instances where PMDD symptoms are severe, disabling, and completely unresponsive to all conventional pharmacological

or psychological interventions, a permanent cessation of the ovarian hormone cycle may be considered. This typically involves a trial period using GnRH agonists to chemically induce a temporary menopausal state, confirming that the removal of ovarian function alleviates the psychological symptoms. If this "chemical ovariectomy" provides sustained relief and the patient accepts the risks and consequences of surgical menopause, bilateral ovariectomy may be proposed as a definitive, but irreversible, treatment. This decision is always highly controversial and requires extensive psychiatric and gynecological collaboration due to the permanent nature of the procedure and the requirement for lifelong hormonal management.

## 6. Historical and Ethical Considerations

The history of ovariectomy is fraught with ethical complexities. Pioneered primarily in the mid-19th century, the procedure was initially developed to treat severe physical maladies but quickly expanded into controversial psychological applications. During the Victorian era, removal of the ovaries was sometimes performed under the misguided belief that it could "cure" female neuroticism, insanity, and the broad, ill-defined diagnosis of **hysteria**. This practice, often referred to as "spaying" women, was based on pseudo-scientific theories linking the female reproductive organs directly to all aspects of mental and emotional instability, leading to widespread abuse and non-consensual procedures performed without clear medical necessity.

The subsequent evolution of medical ethics and psychiatric understanding has definitively rejected these historical abuses. Today, modern surgical practice mandates rigorous standards of informed consent, ensuring the patient fully comprehends the permanence, risks, and benefits of the procedure, especially when performed prophylactically or for non-malignant conditions. Ethical review boards scrutinize indications, emphasizing that ovariectomy must be the last viable therapeutic option when less invasive treatments have failed. This stringent ethical framework contrasts sharply with the historical period where gynecological surgery was sometimes used as a means of social control or coercive psychiatric treatment.

## 7. Debates and Alternatives

Contemporary medical debate surrounding ovariectomy focuses heavily on the optimal age and necessity for the procedure, particularly when performed prophylactically for cancer risk reduction. While bilateral ovariectomy significantly lowers cancer risk, recent studies have raised concerns about the long-term health risks associated with estrogen deprivation in women removed from their hormones before the natural age of menopause (typically around age 51). Specifically, premature surgical menopause is linked to increased mortality, cardiovascular disease, and cognitive decline, regardless of HRT usage, prompting robust discussion regarding the optimal timing of prophylactic surgery in high-risk populations.

In response to these concerns, significant attention is being given to ovarian conservation and the exploration of less radical alternatives. When surgery is required for non-cancerous indications, surgeons strive to perform unilateral ovariectomy or simply remove the pathology while sparing healthy ovarian tissue (ovarian cystectomy) to maintain hormonal function. In prophylactic settings, the emerging alternative is the **salpingectomy** (removal of the fallopian tubes) without removing the ovaries, based on growing evidence that many ovarian cancers actually originate in the fimbriated ends of the tubes. This procedure offers substantial risk reduction while preserving the endocrine function of the ovaries, potentially delaying or avoiding surgical menopause altogether and representing a major shift in preventive gynecologic surgery.

### Further Reading

[Oophorectomy \(Wikipedia\)](#)

[Surgical Management of Ovarian Cancer](#)

[American College of Obstetricians and Gynecologists \(ACOG\)](#)