PELVIC INFLAMMATORY DISEASE

*Pid*

Infection of the upper part of the female reproductive system and a common complication of some sexually transmitted diseases.

♀ Diagnosis  ♂ Female

**Related Diagnoses:**

- Menstrual cycle disorders
- Fallopian tube blockage
- Vaginismus
- Hydrosalpinx
- Pyosalpinx
- Endometrial cancer
- Luteinised unruptured follicle syndrome
- Tubal phimosis
- Chlamydia infection
- Gonorrhoea infection

### About Pelvic Inflammatory Disease

Pelvic inflammatory disease or pelvic inflammatory disorder (PID) is an infection of the upper part of the female reproductive system namely the uterus, fallopian tubes, or the ovaries. Around 2% of women are affected. The main complication is the formation of a pyosalpinx (abscess) and ectopic pregnancy is 6 times more likely after a pelvic infection. Often there may be no symptoms. Signs and symptoms, when present may include lower abdominal pain, vaginal discharge, fever, burning with urination, pain with sex, or irregular menstruation. Untreated PID can result in long term complications including infertility, ectopic pregnancy, chronic pelvic pain, and cancer.

The disease is caused by several bacteria, including chlamydia and gonorrhoea, infection usually starts within a few days of sex with an infected person, but it can take up to few months. Infections by Neisseria gonorrhoeae or Chlamydia trachomatis are present in 75 to 90 percent of cases. Often multiple different bacteria are involved. Without treatment about 10 percent of those with a chlamydial infection and 40 percent of those with a gonorrhea infection will develop PID. Risk factors are similar to those of sexually transmitted infections generally and include a high number of sexual partners and drug use. Vaginal douching may also increase the risk.

Diagnosis of PID is difficult because symptoms among women with PID vary widely from severe to none. For example, as many as 50% of women with tubal disease at infertility examination or ectopic pregnancy report having had no PID. The diagnosis is typically based on the presenting signs and symptoms. It is recommended that the disease be considered in all women of childbearing age who have lower abdominal pain. A definitive diagnosis of PID is made by finding pus involving the fallopian tubes during surgery. Ultrasound may also be useful in diagnosis. Two thirds of patients with laparoscopic evidence of previous PID were not aware they had PID. Although the PID infection itself may be cured, effects of the infection may be permanent. This makes early identification by someone who can prescribe appropriate curative treatment very important in the prevention of damage to the reproductive system. Since early gonococcal infection may be asymptomatic, regular screening of individuals at risk for common agents (history of multiple partners, history of any unprotected sex, or people with symptoms) or because of certain procedures (post pelvic operation, postpartum, miscarriage or abortion). Prevention is also very important in maintaining viable reproduction capabilities. If the initial infection is mostly in the lower tract, after treatment the person may have few difficulties. If the infection is in the fallopian tubes or ovaries, more serious complications are more likely to occur.

**Associated diseases**
- intrauterine device
- previously experienced surgeries
- constant suprapubic pain
- dyspareunia
- sexually transmitted diseases

**Complications**

PID can cause scarring inside the reproductive organs, which can later cause serious complications. Potential complications include:

- disseminated infection, sepsis, and death
- intestinal obstruction
- Fitz-Hugh-Curtis syndrome - perihepatitis where the liver capsule and peritoneal surface are involved. The history reveals RUQ (right upper quadrant) pain - abdominal pain with shock and an altered mental status, that can radiate to the shoulder, potentially confused with cholecystitis
- infertility
- abscess
- chronic pelvic pain
- ectopic pregnancy
- peritonitis
- intestinal obstruction
- disseminated: endocarditis, arthritis, meningitis

**Risk factor**

- young
- poor
- sexually active (80% sexually transmitted)
- nulliparous (no previous births)
- uterine instrumentation (any operation involving the uterus or IUCD)
- complications during childbirth
- miscarriage

**Impact on fertility**

PID can cause scarring and damage which can affect fertility. If both or one of the fallopian tubes are blocked due to scars and adhesions, then the sperm will not reach egg and egg cannot make way to the uterus. This prevents fertilization and also pregnancy. If only one fallopian tube in blocked, there is yet a possibility that a woman can get pregnant, since the other tube can release an egg and let a sperm swim through. Two blocked fallopian tubes, however, are not a good sign for women who wish to naturally become pregnant. Untreated PID can result in long term complications including ectopic pregnancy and infertility.

**Prevention**

Risk reduction against sexually transmitted infections through barrier methods such as condoms. Going to the doctor immediately if symptoms of PID, sexually transmitted infections appear, or after learning that a current or former sex partner has, or might have had a sexually transmitted infection.

Getting regular gynecological (pelvic) exams with STI (a sexually transmitted infection) testing to screen for symptomless PID. Discussing sexual history with a trusted physician in order to get properly screened for sexually transmitted diseases. Regularly scheduling STI testing with a physician and discussing which tests will be performed that session.

Getting a STI history from your current partner and insisting they be tested and treated before intercourse. Treating partners to prevent reinfection or spreading the infection to other people. Diligence in avoiding vaginal activity, particularly intercourse, after the end of a pregnancy (delivery, miscarriage, or abortion) or certain gynecological procedures, to ensure that the cervix closes.
Symptoms

The symptoms usually appear after a menstrual period. May be asymptomatic.

Lower abdominal pain is the most common presenting symptom, another symptoms are:

- fever > 38.3
- cervical discharge
- yellow, green or smelly discharge
- irregular vaginal bleeding
- dysuria
- abdominal pain
- lower back pain
- nausea
- deep pain during sex
- pain during ovulation
- bloating

Therapies

Self therapy

Chinese medicine - Acupuncture

Acupuncture is an effective complement to pharmacological therapy in the alleviation of chronic pelvic inflammatory disease (PID). Acupuncture may hence complement pharmacological therapy in the alleviation of chronic PID symptoms.

Conventional medicine

Treatment depends on the cause and generally involves use of antibiotic therapy. Anyone with PID and partners of patients with PID since six months prior to diagnosis should be treated to prevent reinfection. Psychotherapy is highly recommended to women diagnosed with PID as the fear of redeveloping the disease after being cured may exist. It is important for a patient to communicate any issues and/or uncertainties they may have to a doctor, especially a specialist such as a gynecologist, and in doing so, to seek follow-up care.

Pharmacotherapy

If the patient has not improved within two to three days after beginning treatment with the antibiotics, they should return to the hospital for further treatment. Drugs should also be given orally and/or intravenously to the patient while in the hospital to begin treatment immediately, and to increase the effectiveness of antibiotic treatment. Hospitalization may be necessary if the patient has tubo-ovarian abscesses; is very ill, immunodeficient, pregnant, or incompetent; or because a life-threatening condition cannot be ruled out. Treating partners for STIs (sexually transmitted infections) is a very important part of treatment and prevention. Anyone with PID and partners of patients with PID since six months prior to diagnosis should be treated to prevent reinfection.

For women with PID of mild to moderate severity, parenteral (taken into the body in a manner other than through the digestive canal) and oral therapies appear to have similar clinical efficacy. Many randomized trials have demonstrated the efficacy of both oral and parenteral regimens. Clinical experience should guide decisions regarding transition to oral therapy, which usually can be initiated within 24–48 hours of clinical improvement. Recommended parenteral regimens include cefoxitin or cefotetan plus doxycycline, and clindamycin plus gentamicin. An alternative parenteral regimen isampicillin/sulbactam plus doxycycline. A recommended oral regimen is ceftriaxone or cefoxitin plus doxycycline.

Surgical therapy
Surgical therapy is needed in 15-20% of cases so managed. If surgical therapy is warranted, the actual trend is toward conservation of reproductive potential with easy drainage, adhesiolysis, and copious irrigation or unilateral adnexectomy. In younger women with mild distal tubal occlusive disease, laparoscopic surgery may be viewed as an alternative to IVF, but when the disease is severe or pregnancy does not occur during the first postoperative year, IVF is the logical choice. For older women with any significant degree of distal tubal disease, IVF is generally the first and best option because cycle fecundability after distal tubal surgery is low (1% to 2%), time is limited, and IVF is both more efficient and more effective.

**Assisted reproduction**

A common modern day method of treatment is in vitro fertilization as it is more cost-effective, less invasive, and results are immediate. Treatments such as assisted reproductive technologies are used more often than surgery. Stimulated IUI (intrauterine insemination) can be suggested as the initial treatment in women with unilateral proximal or distal tubal occlusion. When woman has both tubes totally blocked (bilateral occlusion), the only possible treatment option is IVF-ICSI.

**Find more about related issues**

**Diagnoses**

- **Menstrual cycle disorders**
  An abnormal condition in a woman’s menstrual cycle.
  Learn more at: [www.fertilitypedia.org/therapy/diag/menstrual-cycle-disorders](http://www.fertilitypedia.org/therapy/diag/menstrual-cycle-disorders)

- **Fallopian tube blockage**
  An obstruction prevents the egg or sperm from traveling down the tube, thus making fertilization impossible.
  Learn more at: [www.fertilitypedia.org/therapy/diag/fallopian-tube-blockage](http://www.fertilitypedia.org/therapy/diag/fallopian-tube-blockage)

- **Vaginismus**
  A physical or psychological condition in which woman cannot engage in any form of vaginal penetration.
  Learn more at: [www.fertilitypedia.org/therapy/diag/vaginismus](http://www.fertilitypedia.org/therapy/diag/vaginismus)

- **Hydrosalpinx**
  A hydrosalpinx is an abnormal pouch containing liquid in a fallopian tube.
  Learn more at: [www.fertilitypedia.org/therapy/diag/hydrosalpinx](http://www.fertilitypedia.org/therapy/diag/hydrosalpinx)

- **Pyosalpinx**
  A distally blocked Fallopian tube filled with pus.
  Learn more at: [www.fertilitypedia.org/therapy/diag/pyosalpinx-do-rf](http://www.fertilitypedia.org/therapy/diag/pyosalpinx-do-rf)

- **Endometrial cancer**
  Cancer that arises from the endometrium, the lining of the uterus.
  Learn more at: [www.fertilitypedia.org/therapy/diag/endometrial-cancer](http://www.fertilitypedia.org/therapy/diag/endometrial-cancer)

- **Luteinised unruptured follicle syndrome**
  The luteinisation of ovulatory follicle without a release of an oocyte.
  Learn more at: [www.fertilitypedia.org/therapy/diag/luteinised-unruptured-follicle-syndrome](http://www.fertilitypedia.org/therapy/diag/luteinised-unruptured-follicle-syndrome)
**Tubal phimosis**
The type of blockage that affects the part of the fallopian tube end towards the ovary.
Learn more at: [www.fertilitypedia.org/therapy/diag/tubal-phimosis](http://www.fertilitypedia.org/therapy/diag/tubal-phimosis)

**Chlamydia infection**
A common sexually transmitted disease (STD) caused by the Chlamydia trachomatis bacteria that can lead to serious reproductive morbidity.
Learn more at: [www.fertilitypedia.org/therapy/diag/chlamydia-infection](http://www.fertilitypedia.org/therapy/diag/chlamydia-infection)

**Gonorrhoea infection**
A sexually transmitted infection caused by the bacterium Neisseria gonorrhoeae.
Learn more at: [www.fertilitypedia.org/therapy/diag/gonorrhoea-infection](http://www.fertilitypedia.org/therapy/diag/gonorrhoea-infection)

**Organs**

**Fallopian tubes**
Two very fine tubes that transport sperm toward the egg, and allow passage of the fertilized egg back to the uterus for implantation.
Learn more at: [www.fertilitypedia.org/edu/organs/fallopian-tubes](http://www.fertilitypedia.org/edu/organs/fallopian-tubes)

**Ovary**
The ovum-producing organs of the internal female reproductive system
Learn more at: [www.fertilitypedia.org/edu/organs/ovary](http://www.fertilitypedia.org/edu/organs/ovary)

**Uterus**
The uterus is the largest and major organ of the female reproductive tract that is the site of fetal growth and is hormonally responsive
Learn more at: [www.fertilitypedia.org/edu/organs/uterus](http://www.fertilitypedia.org/edu/organs/uterus)

**Reproductive cells**

**Oocyte**
A female germ cell involved in reproduction.
Learn more at: [www.fertilitypedia.org/edu/reproductive-cells/oocyte](http://www.fertilitypedia.org/edu/reproductive-cells/oocyte)

**Zygote**
The cell formed by the union of a sperm and an oocyte.
Learn more at: [www.fertilitypedia.org/edu/reproductive-cells/zygote](http://www.fertilitypedia.org/edu/reproductive-cells/zygote)

**Reproductive functions**

**Fertilization**
The fusion of an ovum with a sperm to initiate the development of a new individual organism.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/fertilization](http://www.fertilitypedia.org/edu/reproductive-functions/fertilization)

**Implantation**
The very early stage of pregnancy at which the embryo adheres to the wall of the uterus.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/implantation](http://www.fertilitypedia.org/edu/reproductive-functions/implantation)

**Oogenesis**
The process of the maturation of the female gametes through the meiotic division.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/oogenesis](http://www.fertilitypedia.org/edu/reproductive-functions/oogenesis)
Risk factors

Abortion
The ending of pregnancy by removing a fetus or embryo before it can survive outside the uterus.
Learn more at: www.fertilitypedia.org/therapy/rf/abortion

Ectopic pregnancy
A complication of pregnancy in which the embryo attaches outside the uterus.
Learn more at: www.fertilitypedia.org/therapy/rf/ectopic-pregnancy

Intrauterine device
A small birth control device that is inserted into a woman's uterus to avoid unintended pregnancy.
Learn more at: www.fertilitypedia.org/therapy/rf/intrauterine-device

Miscarriage
Pregnancy loss is the natural death of an embryo or fetus before it is able to survive independently.
Learn more at: www.fertilitypedia.org/therapy/rf/miscarriage

Sexually transmitted diseases
Illnesses that have a significant probability of transmission between humans by means of human sexual behavior and that may impact fertility.
Learn more at: www.fertilitypedia.org/therapy/rf/sexually-transmitted-diseases

Symptoms

Chronic pelvic pain
Pain in the area of the pelvis, that lasts more than six months.
Learn more at: www.fertilitypedia.org/edu/symptoms/chronic-pelvic-pain-1

Fever
A temperature above the normal range due to an increase in the body's temperature set-point.
Learn more at: www.fertilitypedia.org/edu/symptoms/fever

Infertility
The failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.
Learn more at: www.fertilitypedia.org/edu/symptoms/infertility

Lower abdominal pain
Pain that occurs in low area of abdomen, below the umbilicus.
Learn more at: www.fertilitypedia.org/edu/symptoms/lower-abdominal-pain

Painful sexual intercourse
The painful feelings during sexual intercourse.
Learn more at: www.fertilitypedia.org/edu/symptoms/painful-sexual-intercourse

Painful urination
A burning or stinging sensation during urination.
Learn more at: www.fertilitypedia.org/edu/symptoms/painful-urination-1
Vaginal discharge
The biological fluid secreted from the vagina.
Learn more at: www.fertilitypedia.org/edu/symptoms/vaginal-discharge

Therapies

Acupuncture
A form of alternative medicine and a key component of traditional Chinese medicine involving thin needles inserted into the body at acupuncture points.
Learn more at: www.fertilitypedia.org/edu/therapies/acupuncture

Adhesiolysis
Surgery used to remove adhesions.
Learn more at: www.fertilitypedia.org/edu/therapies/adhesiolysis

Adnexectomy
The removal of the fallopian tube and ovary on one side, or ovaries and tubes on both sides.
Learn more at: www.fertilitypedia.org/edu/therapies/adnexectomy

Egg donation
Process by which a woman donates eggs for purposes of assisted reproduction or biomedical research.
Learn more at: www.fertilitypedia.org/edu/therapies/egg-donation

ICSI
A micromanipulative fertilization technique in which a single sperm is injected directly into an egg.
Learn more at: www.fertilitypedia.org/edu/therapies/icsi

Pharmacotherapy of infections
Antibiotics or antibacterials are a type of antimicrobial used in the treatment and prevention of bacterial infections.
Learn more at: www.fertilitypedia.org/edu/therapies/pharmacotherapy-of-infections

Sperm donation
The procedure in which a man (sperm donor) provides his sperm for fertility treatment.
Learn more at: www.fertilitypedia.org/edu/therapies/sperm-donation

Standard IVF
A process in which an egg is fertilised by sperm outside the body: in vitro. Own or donated gametes may be used.
Learn more at: www.fertilitypedia.org/edu/therapies/standard-ivf

Traditional Chinese medicine
A broad range of medicine practices sharing common concepts which have been developed in China and are based on a tradition of more than 2000 years.
Learn more at: www.fertilitypedia.org/edu/therapies/traditional-chinese-medicine

Gallery
Illustration of pelvic inflammatory disease
An inflammation in the fallopian tube.

Micrograph of salpingitis – a component of pelvic inflammatory disease
Low magnification micrograph of acute and chronic salpingitis.

Typical Sites for Pelvic Inflammatory Disease
Drawing showing the usual sites of infection in pelvic inflammatory disease.

Sources

“Pelvic inflammatory disease” —sourced from Wikipedia licensed under CC BY-SA 3.0

“Pelvic inflammatory disease” —sourced from World Heritage Encyclopedia licensed under CC BY-SA 3.0

“Sexually transmitted infections: a guide for lesbian and bisexual women” —by Order of Perpetual Indulgence of Perpetual Indu licensed under CC BY-SA 2.0 UK

“Uterine and pelvic infections” —sourced from MedRevise licensed under CC BY-NC 3.0

“Pelvic inflammatory disease (PID): Complications” —sourced from LifeHugger licensed under CC BY-SA 3.0

“Reynolds’ pentad” —sourced from Wikipedia licensed under CC BY-SA 3.0

“Chlamydia trachomatis and Genital Mycoplasmas: Pathogens with an Impact on Human Reproductive Health” —by Ljubin-Sternak and Meštrović licensed under CC BY 3.0

“Fallopian tube obstruction” —sourced from Wikipedia licensed under CC BY-SA 3.0

“Stimulated intrauterine insemination in women with unilateral tubal occlusion” —by Yi et al. licensed under CC BY-NC 3.0

“Sexually transmitted infection” —sourced from Wikipedia licensed under CC BY-SA 3.0
"Acupuncture for chronic pelvic inflammatory disease: a qualitative study of patients' insistence on treatment"  — by Liang and Gong
licensed under CC BY 2.0

"Pelvic inflammatory Disease"  — by BruceBlaus
licensed under CC BY 3.0

"Salpingitis - low mag"  — by Nephron
licensed under CC BY-SA 3.0

"Blausen 0732 PID - Sites"  — by BruceBlaus
licensed under CC BY 3.0