

PID · STI & Pelvic Inflammatory Disease

A plain-English guide for you and your family

WHAT IS HAPPENING

Normally, thick mucus in the cervix (the neck of the womb) and tiny sweeping hairs called cilia in the fallopian tubes (the tubes that carry eggs from the ovaries to the uterus) keep the inside of the uterus and tubes clean and germ-free. Hormones like estrogen and progesterone (chemicals that guide your monthly cycle) and your immune system tune this barrier throughout the month. In pelvic inflammatory disease (PID), bacteria—most often chlamydia or gonorrhea from sex, or sometimes a mix of germs—break through the cervix and travel upward. They plant themselves in the lining of the uterus (endometrium), then climb into the fallopian tubes, and sometimes spill into the belly lining. The infection causes swelling and kills or damages the sweeping cilia, even after antibiotics clear the germs. That damage scars the tubes forever. You feel pain low in the belly, and when the doctor moves the cervix or presses near the ovaries during an exam, it hurts a lot (called cervical motion tenderness and adnexal tenderness). Fever and vaginal discharge can happen but do not always. Even mild cases leave scars that can block the tubes and make it hard to get pregnant or raise the risk of a pregnancy stuck in the tube (ectopic pregnancy). Every finding—pain, tenderness, discharge—traces back to germs breaking the cervix barrier and climbing up. Your body floods the area with white blood cells and fluid to wall off the infection, which is why it hurts and swells, but only antibiotics can actually kill the bacteria and stop the spread.

What you might feel

- Lower belly pain that gets worse when the doctor pushes on the cervix or ovary area during an exam (cervical motion tenderness or adnexal tenderness)
- Cervix that bleeds easily when touched (friable cervix)
- Abnormal vaginal discharge—often cloudy, yellowish, or foul-smelling
- Bleeding after sex (post-coital bleeding)
- Fever (often low-grade, sometimes higher)
- Pain during sex (dyspareunia)
- No symptoms at all in many cases—silent infection that only shows up years later as trouble getting pregnant (infertility)

- Severe lower belly pain, high fever, and feeling very sick

Call the doctor right away if...

- Severe lower belly pain with high fever and vomiting—may signal a tubo-ovarian abscess (a pus-filled pocket near the ovary) or peritonitis (infection spreading into the belly)
- Unable to walk or stand upright because of pain—suggests very swollen, inflamed pelvic organs or an abscess
- Signs of sepsis: racing heart, very low blood pressure, confusion, or extremely high or very low body temperature—bacteria may be spilling into the bloodstream

What the care team will do

- Give ceftriaxone 250 mg intramuscular injection in first visit and watch patient take first doses of doxycycline 100 mg and metronidazole 500 mg by mouth
- Teach patient to take doxycycline 100 mg twice daily and metronidazole 500 mg twice daily for full 14 days even when pain stops
- Explain that patient and all sexual partners from last 60 days must get tested and treated with same antibiotics before any sex happens again
- Schedule follow-up visit in 72 hours to check if belly pain and tenderness are improving
- Tell patient no alcohol while taking metronidazole and for 24 hours after last dose
- Educate patient that condoms for every sex act prevent re-infection and future PID episodes
- Teach warning signs to return immediately: fever over 101, vomiting, severe pain, dizziness, or fainting
- Offer HIV and hepatitis testing because STI exposure risk is same for all bloodborne infections

Medicines you may be given — and why

Ceftriaxone 500 mg intramuscular (IM) once

Ceftriaxone kills *Neisseria gonorrhoeae* (the germ that causes gonorrhea) by punching holes in its outer wall. Without a sturdy wall, the germ bursts and dies. This stops the gonorrhea bacteria from multiplying inside the pelvis and helps clear the infection.

Doxycycline 100 mg by mouth twice a day for 14 days

Doxycycline kills *Chlamydia trachomatis* (the germ that causes chlamydia) and some other bacteria by blocking their ability to make proteins. Without proteins, the germs cannot grow, repair themselves, or multiply, so the infection dies out over two weeks.

Metronidazole 500 mg by mouth twice a day for 14 days

Metronidazole kills anaerobic bacteria (germs that live without oxygen, like *Bacteroides* and *Prevotella* species) and some other pathogens by breaking their DNA. Once inside the germ, the drug gets activated and then cuts up the germ's genetic instructions. Without working DNA, the bacteria die. This is important because anaerobes from the vagina often travel up and join the PID infection.

Inpatient regimen (if admitted to the hospital): Cefoxitin 2 g IV every 6 hours OR Cefotetan 2 g IV every 12 hours PLUS Doxycycline 100 mg IV or by mouth every 12 hours, then switch to doxycycline 100 mg by mouth twice a day plus metronidazole 500 mg by mouth twice a day to finish 14 days total

When PID is severe—meaning high fever, a tubo-ovarian abscess (a pocket of pus on the tube or ovary), pregnancy, inability to take pills, or no improvement after 72 hours of outpatient treatment—doctors admit you to the hospital and give antibiotics through an IV (a tiny tube in your vein). Cefoxitin or cefotetan kill gonorrhea and many anaerobes by breaking their cell walls. Doxycycline kills chlamydia by blocking protein-making. Together they cover all the germs quickly and at high doses. Once you are better (no fever, less pain, eating normally), you switch to pills and finish 14 days total at home. Metronidazole is often added to make sure anaerobes are fully covered.

Alternative oral outpatient regimen (if ceftriaxone is not available): Cefixime 800 mg by mouth once (or levofloxacin 500 mg by mouth once daily for 14 days if severe penicillin allergy), PLUS Doxycycline 100 mg by mouth twice a day for 14 days, PLUS Metronidazole 500 mg by mouth twice a day for 14 days

If the ceftriaxone shot is not available or you have a severe penicillin allergy, doctors may use cefixime (a pill form of cephalosporin) or levofloxacin (a fluoroquinolone antibiotic) instead. Cefixime works like ceftriaxone—it breaks gonorrhea's cell wall. Levofloxacin works by cutting the DNA inside gonorrhea and other bacteria so they cannot copy themselves. HOWEVER, gonorrhea is becoming resistant to fluoroquinolones in many places, so levofloxacin is used ONLY if you are truly allergic to cephalosporins and local resistance rates are low. You still take doxycycline for chlamydia and metronidazole for anaerobes, just as in the standard regimen.

Where this information comes from

- CDC Sexually Transmitted Infections Treatment Guidelines 2021
- American College of Obstetricians and Gynecologists (ACOG)
- Infectious Diseases Society of America (IDSA)
- Cochrane

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