



**Ectopic pregnancy**, or tubal pregnancy, occurs when a fertilized egg implants somewhere outside of the uterus, most often in one of the fallopian tubes, but occasionally on an ovary or in the abdominal cavity. If not treated, the growth of the embryo may rupture the fallopian tube, causing internal hemorrhage, infection, and possible death for the woman.

Ectopic pregnancies happen when the fertilized egg is stopped on its journey from the ovaries to the uterus via the fallopian tube. Scars in the tubes from infection, tubal surgery, endometriosis, and tubal abnormalities may block the passage of the egg. Ectopic pregnancy always results in the loss of the fetus and is now the leading cause of pregnancy-related death during the first trimester in this country.

According to the Centers for Disease Control and Prevention, 10-15 percent of all pregnancy related deaths are attributed to ectopic pregnancy. Ectopic pregnancies account for about 2 percent of all pregnancies; this rate is up 600 percent since 1970. Health experts attribute this rise to an increase in the incidence of sexually transmitted infections (which can scar the fallopian tubes) and induction of ovulation (an infertility treatment that involves the stimulation of ovaries with drugs to promote the release of eggs). Although pregnancy is rare after tubal sterilization, or while using an intrauterine device (IUD), there is an increased chance that such a pregnancy will be ectopic.

## Risk

Ectopic pregnancy cannot be prevented, but there are some elements that predispose certain women to the condition. Risk factors include:

- a history of pelvic inflammatory disease or endometriosis
- an age of 30 years or more
- previous ectopic pregnancy
- abdominal surgery
- smoking
- prior fallopian tube surgery. Some 3 to 20 percent of women who have had fallopian tube surgery will have an ectopic pregnancy. However, the greater the success of the tubal surgery in fully restoring the normal function of the tubes, the lower the chance of an ectopic pregnancy.

- use of gamete intrafallopian transfer (GIFT), an infertility procedure that surgically places an egg fertilized outside the body into the fallopian tube.

The egg generally implants in the uterus, but in rare cases may implant in the tube.

Although women cannot prevent or avoid an ectopic pregnancy, they should discuss the risk factors with their practitioner before they become pregnant. A very thorough medical history in the prepregnancy planning stage should raise the red flags associated with increased risk.

## Symptoms

There may be no symptoms of an ectopic pregnancy during the first few weeks after conception-some women may not even know that they are pregnant. Often the condition goes undetected until the pregnancy ruptures, or breaks through, the walls of the fallopian tube.

Symptoms include:

- cramps and spotting early in the pregnancy
- vaginal bleeding
- severe lower abdominal pains on one side of the body
- nausea
- vomiting
- fainting spells
- dizziness

Pain can radiate along a nerve pathway to areas other than the site of the disorder. In ectopic pregnancies that cause bleeding in the abdomen, the pain often appears in the shoulder. Shoulder pain in women who are known to be, or who may be, pregnant can be a sign of a ruptured ectopic pregnancy.



## Diagnosis

Because symptoms vary and often do not appear until the pregnancy has progressed, ectopic pregnancy is difficult to diagnose. Ultrasound, a procedure that uses sound waves to create an image of the pelvic cavity, may be used to diagnose ectopic pregnancy. The change in the blood levels of the hormone human chorionic gonadotropin (HCG) may also be measured to aid diagnosis—lower than normal levels may suggest ectopic pregnancy.

Laparoscopy, a procedure in which a thin viewing scope is inserted into the abdomen, may be used to allow practitioners to actually see the presence of an ectopic pregnancy. Earlier detection of ectopic pregnancy (through ultrasound studies or laparoscopic examination) has reduced rates of complications and death.

## Treatment

Ectopic pregnancies must be diagnosed as soon as possible in order to prevent the fallopian tube from rupturing. Delicate microsurgery performed before the tube ruptures may save the tube if the pregnancy is diagnosed early. An ectopic pregnancy may be surgically removed or eased out of an end of a tube that has not yet ruptured. The drug methotrexate is now used to medically terminate an ectopic pregnancy.

If there is a normal second tube, a salpingectomy (removal of the fallopian tube) may be performed on the one containing the pregnancy. The tube may be removed through an opening in the abdomen (called an open procedure) or through a small incision near the navel, using laparoscopy. The aim of the recently developed conservative surgeries is to preserve the tube and maintain fertility.

If the tube has ruptured, there may be severe hemorrhaging, making the woman's health a priority over saving the fallopian tube. In such cases, the tube is removed, sparing the adjacent ovary if possible. Antibiotics are also administered, since accumulated blood in the abdomen puts the woman at risk for peritonitis, an infection of the lining of the abdominal cavity, for which the mortality rate ranges between 12 and 57 percent (depending on the type of infection present). Improved antibiotics have lowered the mortality rate of peritonitis, but it still remains high.

Surgery to restore reproductive function after an ectopic pregnancy can be done with lasers or with an electrocautery device. Rates of pregnancy following laser surgery are slightly higher (53.3 percent) than the rates after electrocautery surgery, but the difference is not statistically significant.

## Fertility After Ectopic Pregnancy

Depending upon the degree of scarring of the fallopian tubes and the functioning of the remaining tube (if one was removed), fertility may be impaired. Among women who want to get pregnant again after an ectopic pregnancy, success rates vary from 61 to 100 percent depending on the amount of damage to the tubes. Both the rate of fertilizations and the rate of pregnancies carried to term have been reported to be about 89 percent, with 10.9 percent of the pregnancies failing because of repeat ectopic pregnancy.

Scarring, which can interfere with the chances of future pregnancy, occurs by the eighth day after surgery in more than 50 percent of women operated on for ectopic pregnancy. Scars can be repaired by laparoscopy and tend not to recur following such surgery.

In addition, the newer techniques for in vitro fertilization increase the chances of pregnancy in women who are missing fallopian tubes or who have scarring.