



OVARIAN CANCER begins in the ovaries. Ovaries are reproductive glands found only in women. The ovaries are made up of three main kinds of cells. Each type of cell can develop into a different type of tumor. Most of these tumors are benign (non-cancerous) and never spread beyond the ovary. Malignant (cancerous) or low malignant potential ovarian tumors can spread (metastasize) to other parts of the body and can be fatal. Ovarian cancer is the fifth leading cause of cancer death among women in Indiana. In Indiana, during 2014, there were 419 new cases of ovarian cancer diagnosed, and 313 ovarian cancer related deaths [See Table 1]. Ovarian cancer causes more deaths than any other cancer of the female reproductive system.¹

Table 1. Burden of Ovarian Cancer—Indiana, 2010–2014

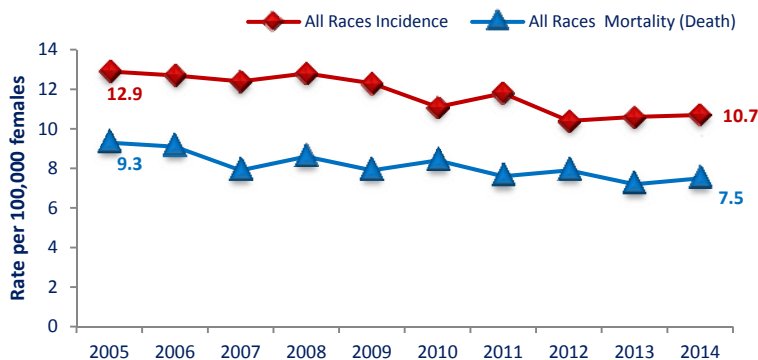
	Average number of cases per year (2010–2014)	Rate per 100,000* (2010–2014)	Number of cases (2014)	Rate per 100,000* 2014
Indiana Incidence	423	10.9	419	10.7
Indiana Deaths	313	7.8	313	7.6

*Age-adjusted.

Source: Indiana State Cancer Registry.

Indiana’s ovarian cancer incidence rate was 10.7 per 100,000 females in 2014, down from 12.9 in 2005. Mortality also decreased from 2005 to 2014 (9.3 to 7.5 per 100,000 females). However, neither decrease was statistically significant.

Figure 1. Ovarian Cancer Incidence and Mortality (Death) Rates*, Indiana, 2005–2014



*Age-adjusted.

Source: Indiana State Cancer Registry.

Who Gets Ovarian Cancer Most Often?

The most important risk factor is a strong family history of breast or ovarian cancer. Women who have had breast cancer, or who have tested positive for inherited mutations in *BRCA1* or *BRCA2* genes are at increased risk. Studies indicate that preventive surgery to remove the ovaries and fallopian tubes in these women can decrease the risk of ovarian cancer.¹

Some additional risk factors include:

- ❑ **Age.** Ovarian cancer is rare in women younger than 40. Most ovarian cancers develop after menopause. In Indiana during 2010 to 2014, 61 percent of all ovarian cancers were found in women 60 years of age or older.
- ❑ **Smoking.** Tobacco smoking increases risk of mucinous ovarian cancer (cancer that begins in the outer lining of the ovary).
- ❑ **Other medical conditions.** Other conditions, such as pelvic inflammatory disease and a genetic condition called hereditary nonpolyposis colorectal cancer (also called Lynch syndrome), may increase risk for ovarian cancer.
- ❑ **History of hormone replacement therapy (HRT).** Studies have shown that the use of menopausal hormone therapy (estrogen alone and estrogen combined with progesterone) can increase risk.
- ❑ **Obesity.** Women with a body mass index of at least 30 may have a higher risk of developing ovarian cancer.
- ❑ **Reproductive history.** Women who have been pregnant and carried to term before age 26 have a lower risk of ovarian cancer than women who have not. The risk decreases with each full-term pregnancy. Women who have their first full-term pregnancy after age 35 or who never carried a pregnancy to term have a higher risk of ovarian cancer. Breastfeeding may lower the risk even further.



Common Signs and Symptoms

Early stages of ovarian cancer usually have no obvious symptoms. Some women may experience persistent, nonspecific symptoms including:

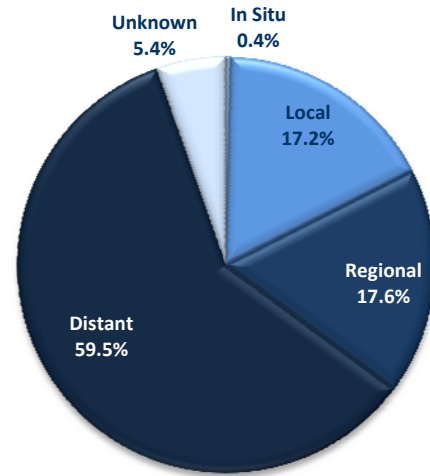
- ❑ Bloating
- ❑ Pelvic or abdominal pain
- ❑ Difficulty eating or feeling full quickly
- ❑ Urinary urgency or frequency

The American Cancer Society suggests that women who experience these types of symptoms on a daily basis for more than a few weeks should seek prompt medical evaluation. The most common sign of ovarian cancer is swelling of the abdomen, which is caused by the accumulation of fluid.

Early Detection

In Indiana, 17.6 percent of ovarian cancers are found at an early stage. When ovarian cancer is found early at an *in situ* stage (meaning the cancer is at the earliest stage) or *localized* stage (meaning the cancer has not spread), about 92 percent of patients live longer than five years after diagnosis. Currently, there is no accurate test for early detection. Often, ovarian cancer detected during a routine pelvic examination is at an advanced stage (a *regional* or *distant* stage, meaning the tumor has spread to other parts of the body) [See Figure 2]. For women at high risk of ovarian cancer, or women with symptoms, a thorough pelvic examination in combination with a transvaginal ultrasound may be used. A blood test for the tumor marker CA125 may be offered, though this strategy has not yet been proven effective in reducing ovarian cancer mortality.

Figure 2. Percent of Ovarian Cancer Cases Diagnosed During Each Stage* — Indiana, 2010 – 2014



*Age-adjusted.

Source: Indiana State Cancer Registry.

Numbers were rounded to the nearest tenth. Due to this, percentages add up to more than 100%.

GET INVOLVED: Join the Indiana Cancer Consortium (ICC)

- ❑ The ICC is a statewide network of over 100 agencies including the Indiana State Department of Health.
- ❑ ICC seeks to reduce the cancer burden in Indiana through the development, implementation and evaluation of a comprehensive plan that addresses cancer across the continuum from prevention through palliation.
- ❑ Become a member at www.indianacancer.org.

Community Resources

- ❑ For an ovarian cancer toolkit with resources and information, visit the ICC at www.indianacancer.org/ovarian-cancer-toolkit/.
- ❑ Visit the ICC website at www.indianacancer.org/survivorship/ for survivorship information and resources.
- ❑ To get help with tobacco cessation, call the [Indiana Tobacco Quitline](http://www.IndianaTobaccoQuitline.com) at 1-800-QUIT-NOW (1-800-784-8669), or visit www.QuitNowIndiana.com.
- ❑ To learn more about how to support healthy eating and physical activity throughout Indiana, visit the Indiana Healthy Weight Initiative at www.inhealthyweight.org.
- ❑ For resources and educational materials, contact Ovar'coming Together at 317-925-6643, or visit them online at www.ovariancancerIN.org.

References

1. American Cancer Society. Cancer Facts and Figures 2016. Atlanta: American Cancer Society, 2016. Available online at <http://www.cancer.org/research/cancerfactsstatistics/cancerfactsfigures2016/index>.