

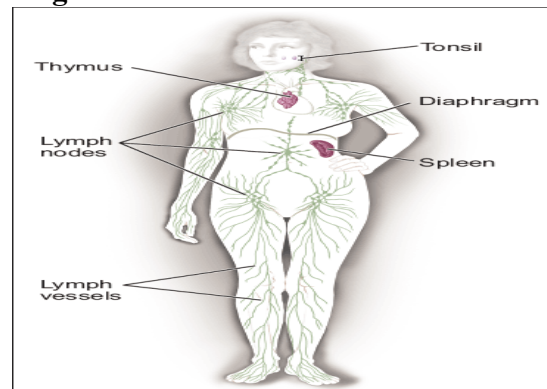
Non-Hodgkin's Lymphoma

Definition: Non-Hodgkin's Lymphoma (NHL) starts in cells called lymphocytes.¹ These cells reside in lymph nodes and lymphoid tissues that are part of the immune system.¹

Background: From 2002 to 2006, there was a yearly average of approximately **2,338** newly diagnosed cases of non-Hodgkin's lymphoma in Ohio.² During this same time period, Ohio experienced approximately **921** deaths each year due to non-Hodgkin's lymphoma.²

NHL can have several different forms. The two most common forms are diffuse large B-cell lymphoma and follicular lymphoma.¹ Diffuse large B-cell lymphoma grows quickly and accounts for 1 out of every 3 cases of lymphoma.¹ Follicular lymphoma is a slower growing cancer and is most often found in older people.¹ Follicular lymphoma accounts for 1 out of every 5 cases of lymphoma.¹

Figure 17



Cuyahoga County Data:

- The average annual number of newly diagnosed non-Hodgkin's lymphoma cases from 2002-2006 was **304**, with an age-adjusted incidence rate of **19.1** per 100,000 people.
- This is **lower** than the **19.2** incidence rate for Ohio and **lower** than the **19.5** incidence rate for the Nation.
- The average annual number of non-Hodgkin's lymphoma deaths from 2002-2006 was **122**, with an age-adjusted mortality rate of **7.2** per 100,000 people.
- This is **lower** than the **7.5** mortality rate for Ohio and **higher** than the **7.1** mortality rate for the Nation.

Table 17a Non-Hodgkin's Lymphoma

Average Annual Number of Cancer Cases and Age-Adjusted Incidence Rates* for 2002-2006

Incidence	Male		Female		Total	
	Cases	Rate	Cases	Rate	Cases	Rate
Cuyahoga County	155	23.6	149	15.9	304	19.1
Ohio	1,227	23.0	1,111	16.2	2,338	19.2
National SEER		23.5		16.4		19.5

* Rate is calculated per 100,000 people.

Table 17b Non-Hodgkin's Lymphoma

Average Annual Number of Cancer Deaths and Age-Adjusted Mortality Rates* for 2002-2006

Mortality	Male		Female		Total	
	Cases	Rate	Cases	Rate	Cases	Rate
Cuyahoga County	61	9.4	61	5.8	122	7.2
Ohio	487	9.6	434	5.9	921	7.5
National SEER		9.0		5.7		7.1

* Rate is calculated per 100,000 people.

Figure 17a

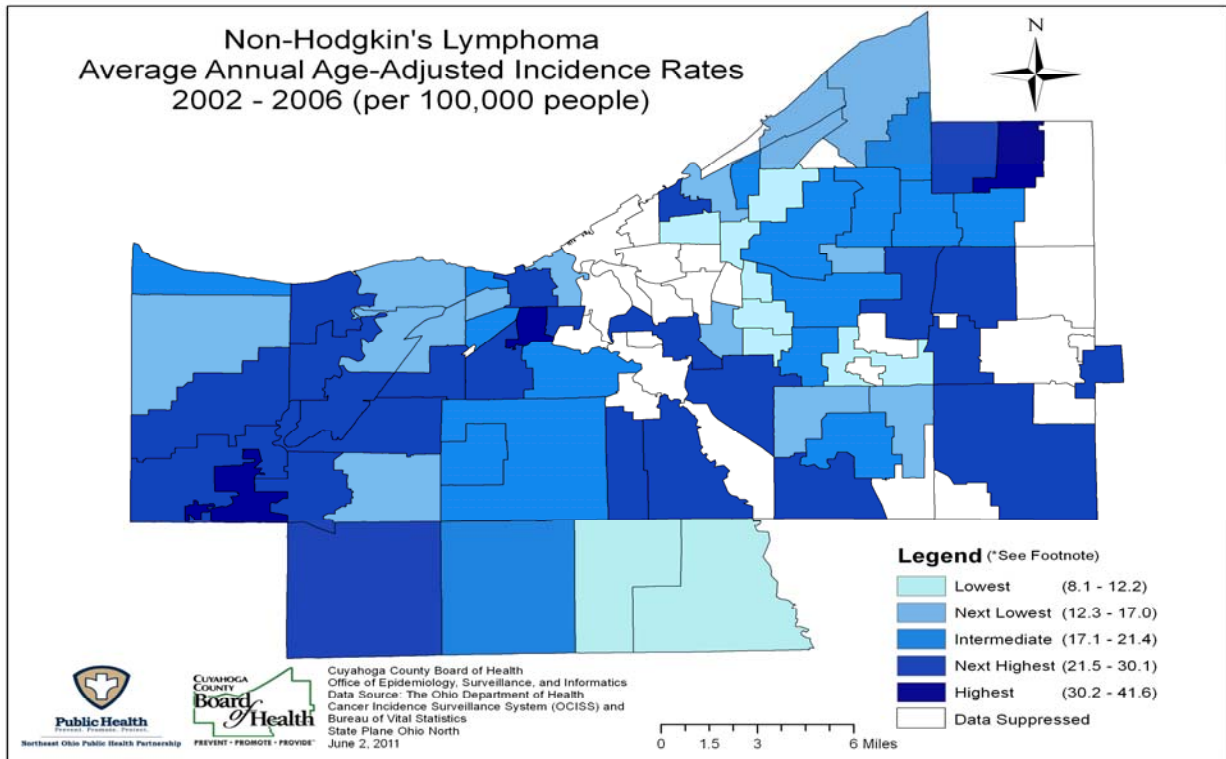
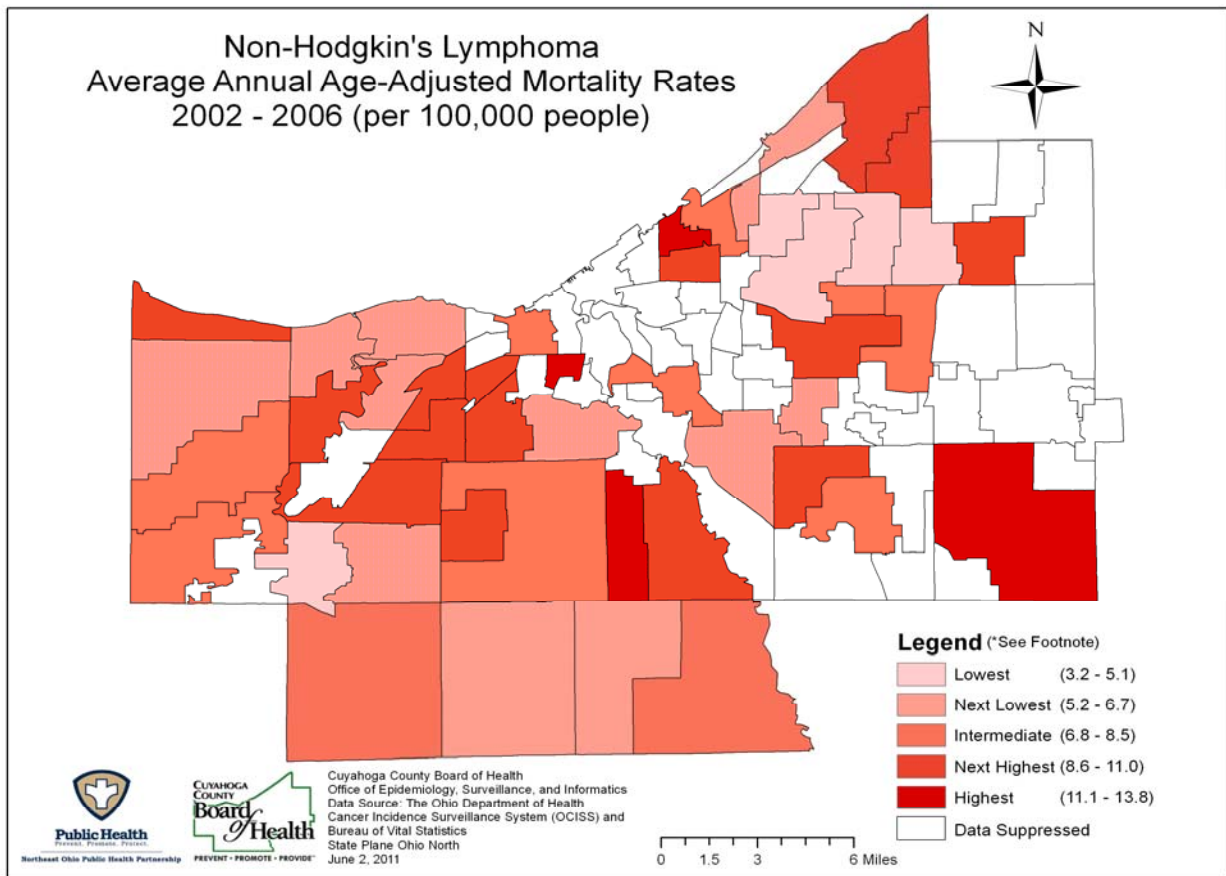


Figure 17b



*Data were suppressed to help maintain confidentiality and /or due to concerns over unstable numbers. See methods/limitations section for additional details.

Chart 17a

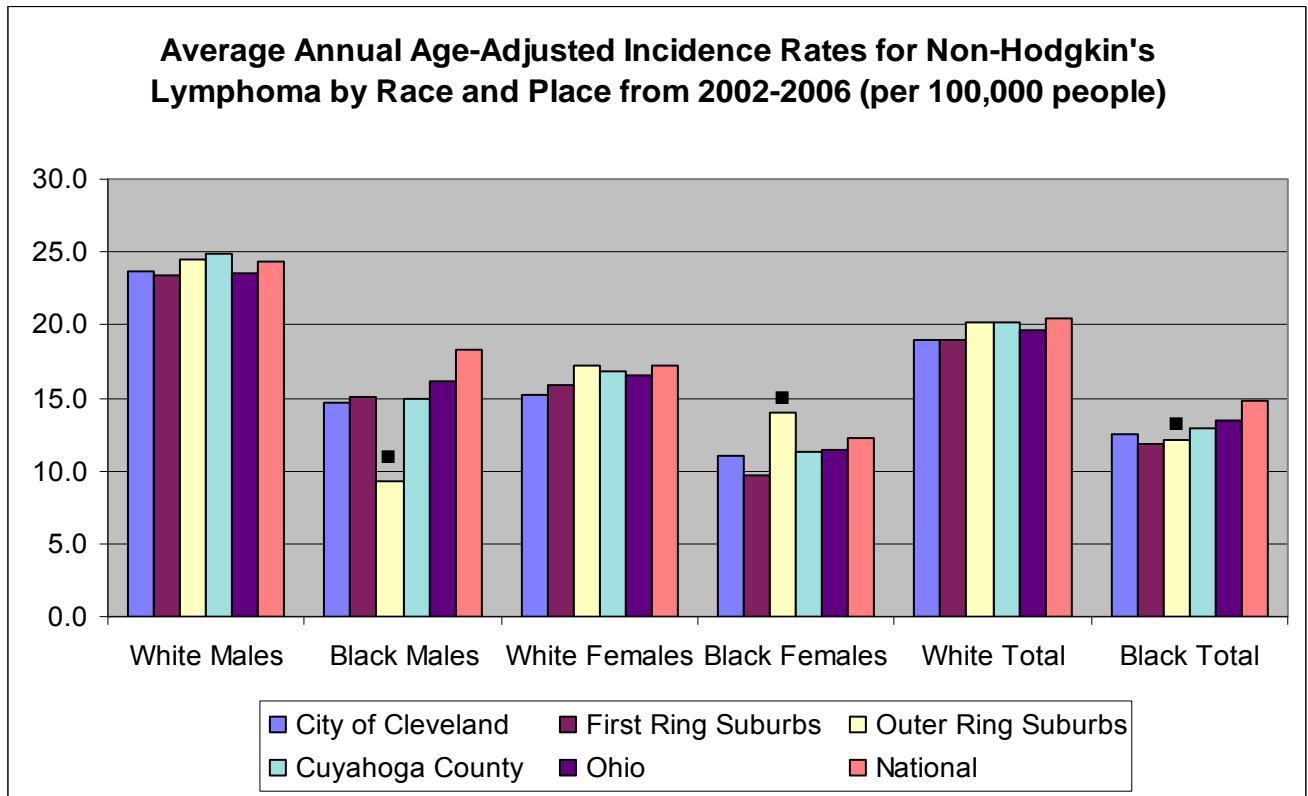
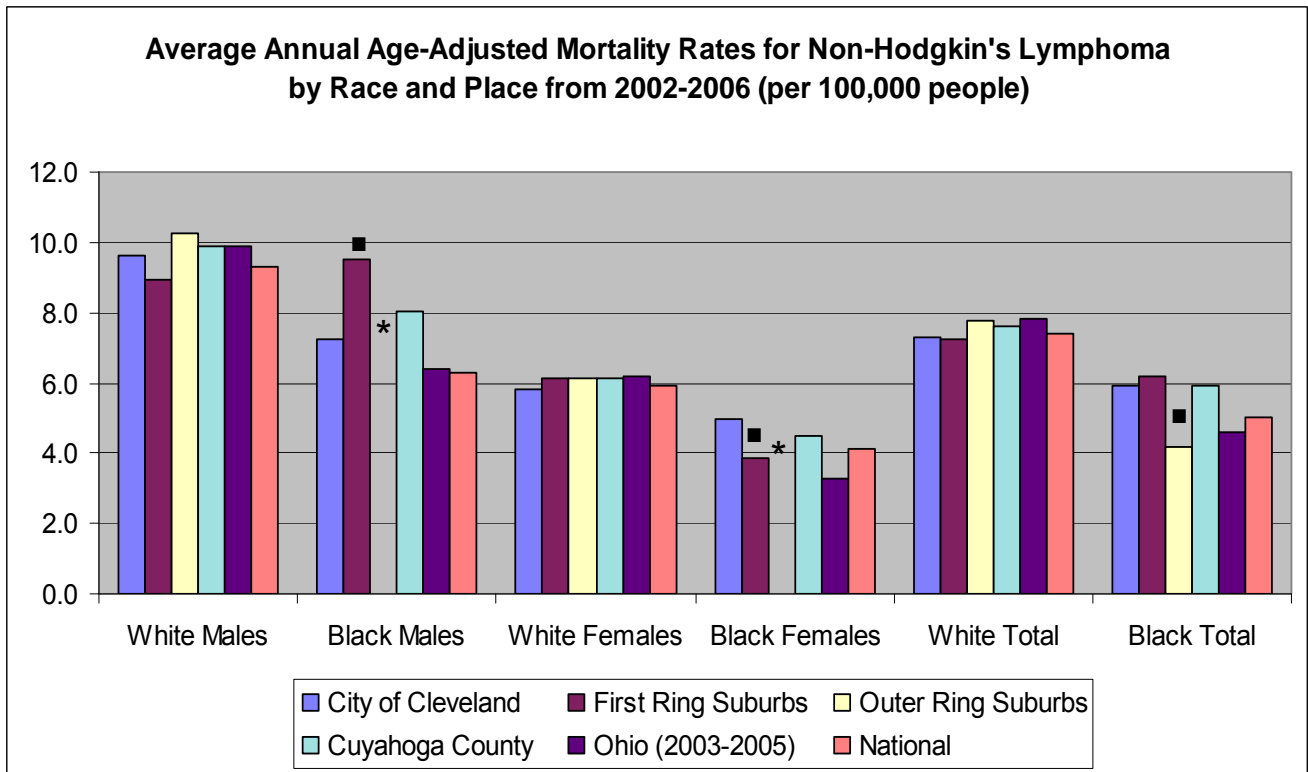


Chart 17b



▲ Rates are statistically significantly higher when compared to Cuyahoga County.
 ▼ Rates are statistically significantly lower when compared to Cuyahoga County.
 ■ Rates are not compared to Cuyahoga County when there are <20 cases total for 2002-2006 due to instability.
 *Data were suppressed to help maintain confidentiality and /or due to concerns over unstable numbers. See methods/limitations section for additional details.

Risk Factors

Males: In the United States, 1 in 43 males will develop non-Hodgkin's lymphoma and 1 in 114 males will die from non-Hodgkin's lymphoma.³

Females: In the United States, 1 in 52 females will develop non-Hodgkin's lymphoma and 1 in 137 females will die from non-Hodgkin's lymphoma.³

Several risk factors may contribute to the development of non-Hodgkin's lymphoma. They include:¹

- **Age-** Most people diagnosed with non-Hodgkin's lymphoma are over 60 years old.
- **Gender-** Non-Hodgkin's lymphoma is generally higher in men than women.
- **Race-** Whites have a higher risk of non-Hodgkin's lymphoma than African Americans and Asian Americans.
- **Exposure to certain chemicals,** including benzene and some weed or insect killers.
- **Radiation exposure**
- **Weakened immune system**
- **Autoimmune diseases**
- **Certain infections,** including HTLV-1 and EBV
- **Obesity**

Symptoms⁴

- Swollen lymph nodes in the neck, underarms, or groin
- Weight loss
- Fever
- Night sweats
- Coughing, chest pain, trouble breathing
- Weakness and fatigue
- Pain, swelling, or a feeling of fullness in the abdomen

Screening, Prevention and Early Detection

Screening:¹

There are no known recommended blood tests or screening tests available to detect non-Hodgkin's lymphoma. Knowing the signs and symptoms and discussing them with a physician may be the best way to find these cancers at an early stage.

Prevention:¹

The best way to attempt to prevent non-Hodgkin's lymphoma is to decrease known risk factors. This includes preventing a weakened immune system, avoiding HIV infection, and treating *Helicobacter pylori* infections (this is still under investigation).

Staging

Stage at Diagnosis describes the severity of a person’s cancer and the extent to which it has or has not spread throughout the body.⁵ Cancer staging is important in helping physicians plan appropriate treatment, as well as to estimate a patient’s prognosis.⁵ Cancer diagnosed in the *in situ* and localized stages are generally referred to as early-stage tumors, whereas regional and distant tumors are referred to as late-stage tumors.² Detecting cancers at an early stage may increase long-term survival and can lead to a reduction in mortality.²

The National Cancer Institute groups staging into five main categories:⁵

- ***In situ***: Abnormal cells are present only in the layer of cells in which they developed. In this report, *in situ* cases are only included for bladder cancer.
- **Localized**: Cancer is limited to the organ in which it began, without evidence of spread.
- **Regional**: Cancer has spread beyond the primary site to nearby lymph nodes or organs and tissues.
- **Distant**: Cancer has spread from the primary site to distant organs or distant lymph nodes.
- **Unstaged/Unknown**: There is not enough information to determine the stage.

Chart 17c

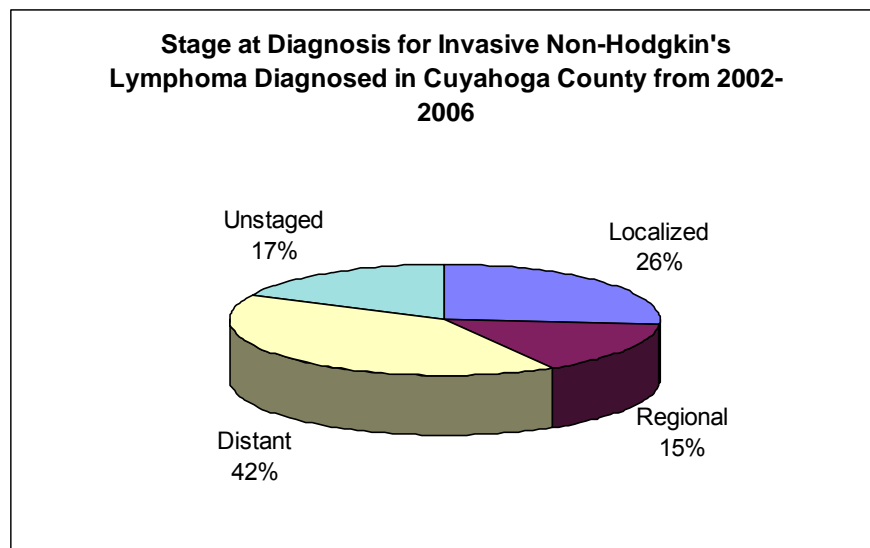


Table 17c

Stage at Diagnosis	5-year Relative Survival (%)
Localized (confined to primary site)	81.0
Regional (spread to regional lymph nodes)	70.6
Distant (cancer has metastasized)	58.0
Unknown/Unstaged	65.8

*Relative survival compares observed survival for those with cancer to the expected survival for those without cancer.

More Information

National Cancer Institute <http://www.cancer.gov/>

American Cancer Society <http://www.cancer.org>

Ohio Department of Health <http://www.odh.ohio.gov/>

Resources

1. The American Cancer Society. Non-Hodgkin Lymphoma Cancer Detailed Guide. <http://www.cancer.org/cancer/non-hodgkinlymphoma/detailedguide/non-hodgkin-lymphoma-what-is-non-hodgkin-lymphoma>. (Accessed December 19, 2010).
2. *Cancer Incidence and Mortality among Ohio Residents, 2002-2006*. Ohio Cancer Incidence Surveillance System, Ohio Department of Health and The Ohio State University, Columbus, Ohio, December 2009. http://www.odh.ohio.gov/ASSETS/79F9E92E210F477D885F8EAC864E2F27/0206Monograph_Final.pdf.
3. The American Cancer Society. Lifetime Risk of Developing or Dying From Cancer. <http://www.cancer.org/Cancer/CancerBasics/lifetime-probability-of-developing-or-dying-from-cancer>. (Accessed January 10, 2011).
4. National Cancer Institute. What you need to know about Non-Hodgkin Lymphoma. <http://www.cancer.gov/cancertopics/wyntk/non-hodgkin-lymphoma>. (Accessed December 19, 2010).
5. National Cancer Institute. Cancer Staging. <http://www.cancer.gov/cancertopics/factsheet/Detection/staging>. (Accessed December 23, 2010).
6. Surveillance Epidemiology and End Results. SEER Stat Fact Sheets: Non-Hodgkin Lymphoma. <http://seer.cancer.gov/statfacts/html/nhl.html>. (Accessed December 19, 2010).
7. National Cancer Institute. What you need to know about Non-Hodgkin Lymphoma. Lymphoma image from <http://www.cancer.gov/cancertopics/wyntk/hodgkin/page2>. (Accessed December 19, 2010).