

## **TECHNICAL NOTES**

Relative survival is commonly used to calculate survival for cancer, particularly when using population-based cancer registry data due to a variety of reasons. Some of the reasons are lack of detailed medical comorbidities, concerns about the accuracy of cause of death, and the concept of relative survival being simple. In this report, the calculation of relative survival is similar to that described in the National Program of Cancer Registries (NPCR) and Surveillance, Epidemiology, and End Results (SEER) reports.

All newly diagnosed Kansans with cancers that are included in the Kansas Cancer Registry (KCR) database are eligible for inclusion in the analysis. For relative survival analysis all invasive cancers (including bladder in situ) diagnosed between 2003 and 2022 with known age at diagnosis (0-99 years old), sex, race, and date of diagnosis are included in the analysis. Patients with multiple primary cancers are included in the dataset, but each patient only contributes one tumor diagnosis to each analysis. In other words, only the first eligible primary cancer (or the first primary cancer type if a specific cancer is being addressed) in the study time period is used for the calculation of survival rates. Cases that are identified solely on the basis of a death certificate or autopsy were excluded from the analysis.

Two study time periods are considered for the analysis: 2003-2012 with follow-up through 2013 (study cutoff date 12/31/2013) and 2013-2022 with follow-up through 2023 (study cutoff date 12/31/2023). Survival time in months for each case is calculated using date of diagnosis as the starting date and the end date being date of death (if the patient was deceased) or the study time cutoff date (12/31/2013 and 12/31/2023, respectively for the two time periods) if the subjects have no evidence of death and are presumed alive. The evidence of death is based on the state death files and the National Death Index (NDI). Survivors that exceeded the maximum age (99 years) were considered as being censored at age 99. Life tables for expected all-cause survival for the general population were obtained from National Center for Health Statistics (NCHS). A SAS program provided by Paul Dickman was modified and employed to calculate the cumulative 5-year relative survival.

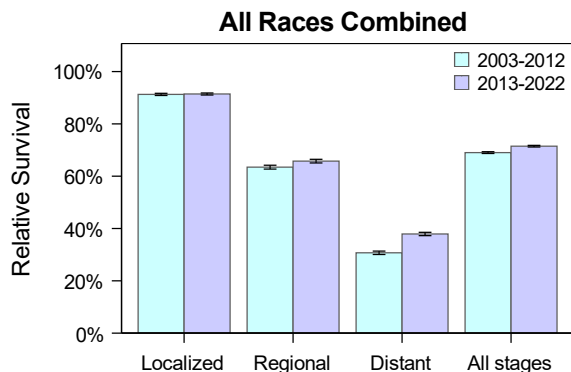
Note: Due to the COVID-19 pandemic, reductions in cancer diagnosis and delayed reporting may have affected cancer incidence rates and trends when using 2020 diagnosed cases.

## **References:**

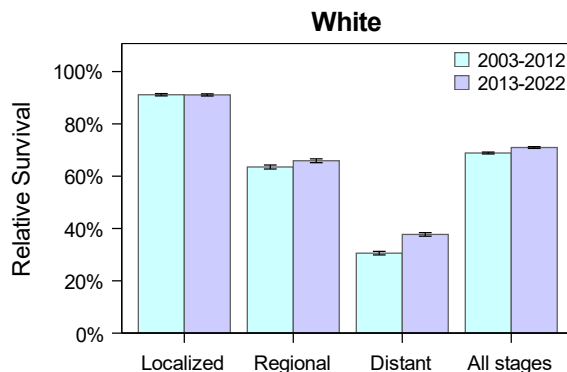
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- Surveillance, Epidemiology and End Results Program (SEER). Cancer statistics review 1975-2018: technical notes. Available from: [https://seer.cancer.gov/archive/csr/1975\\_2018/results\\_figure/sect\\_01\\_intro2\\_25pgs.pdf](https://seer.cancer.gov/archive/csr/1975_2018/results_figure/sect_01_intro2_25pgs.pdf)

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- National Center for Health Statistics (NCHS). United States Life Tables. Available from: [https://www.cdc.gov/nchs/products/life\\_tables.htm](https://www.cdc.gov/nchs/products/life_tables.htm)
- Cho, H., Howlader, N., Mariotto, A. B., and Cronin, K. A. Estimating relative survival for cancer patients from the SEER Program using expected rates based on Ederer I versus Ederer II method. Surveillance Research Program, National Cancer Institute; 2011, Technical Report #2011-01. Available from: <https://surveillance.cancer.gov/reports/>

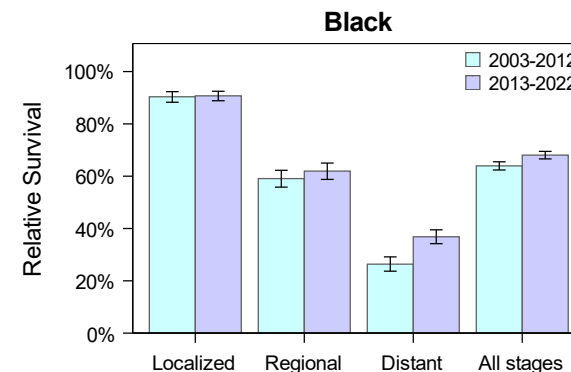
# 5-year Relative Survival for All Sites by stages



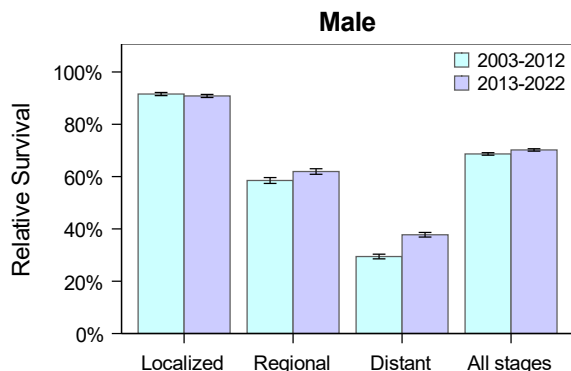
	Localized	Regional	Distant	All stages
Cases involved 2003-2012	60,340	26,316	28,443	127,439
Cases involved 2013-2022	65,987	29,126	32,386	140,812



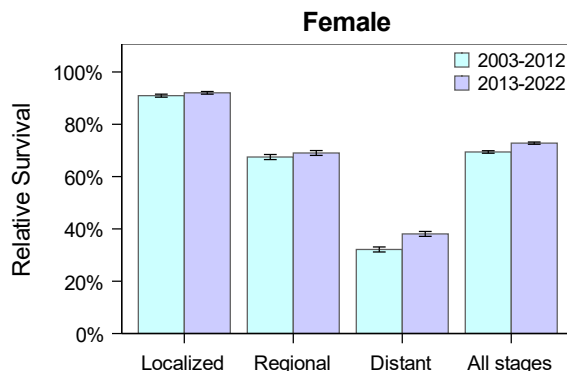
	Localized	Regional	Distant	All stages
Cases involved 2003-2012	55,987	24,418	26,434	118,096
Cases involved 2013-2022	59,698	26,859	29,697	128,023



	Localized	Regional	Distant	All stages
Cases involved 2003-2012	2,609	1,384	1,467	6,035
Cases involved 2013-2022	3,100	1,485	1,827	6,898



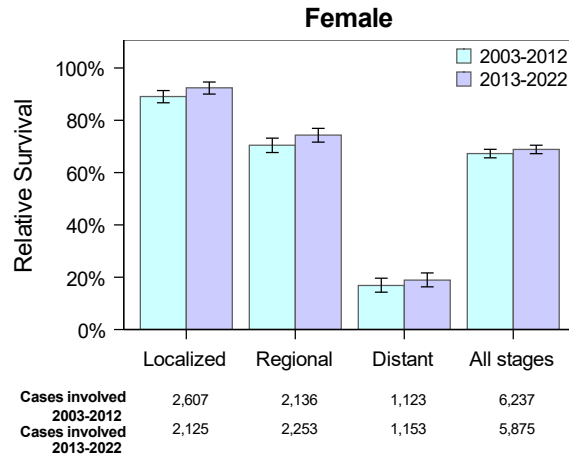
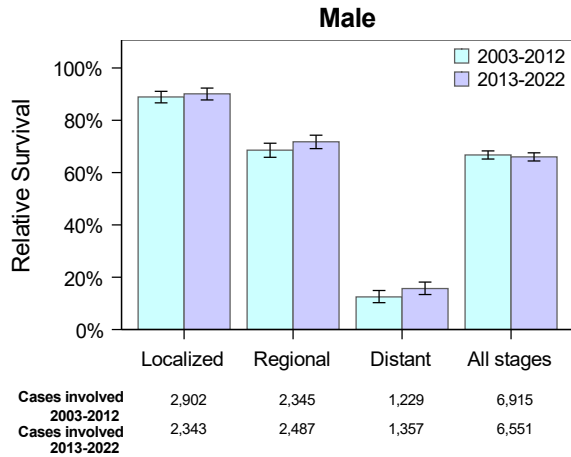
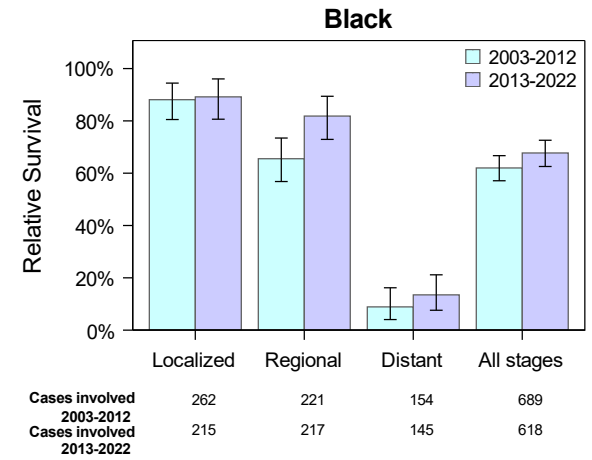
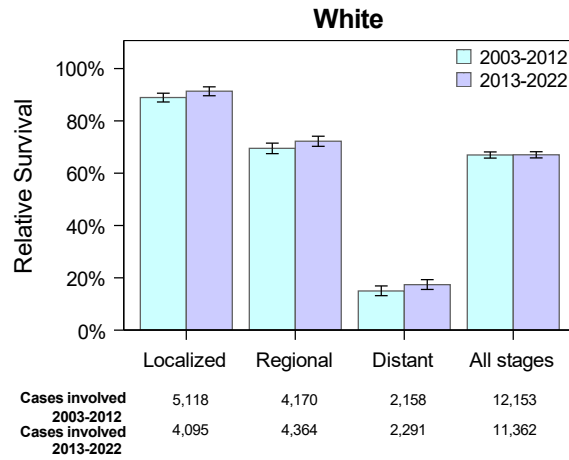
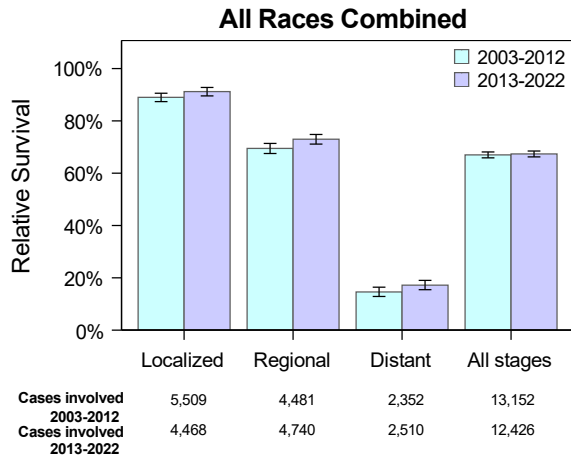
	Localized	Regional	Distant	All stages
Cases involved 2003-2012	32,447	11,909	15,067	66,542
Cases involved 2013-2022	32,839	13,571	17,536	71,998



	Localized	Regional	Distant	All stages
Cases involved 2003-2012	27,893	14,407	13,376	60,897
Cases involved 2013-2022	33,148	15,555	14,850	68,814

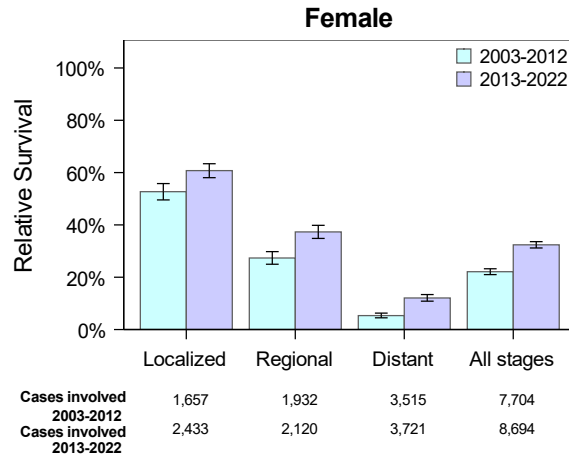
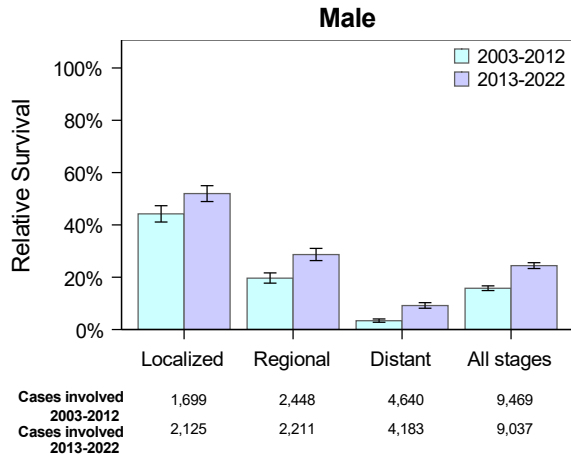
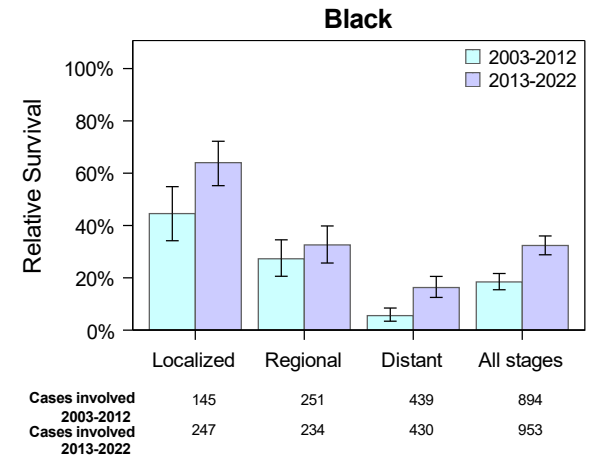
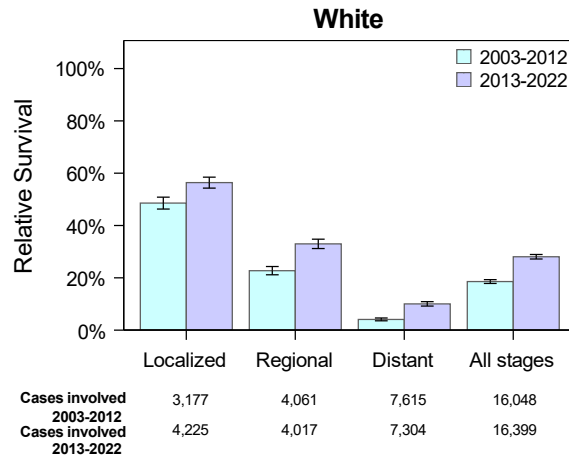
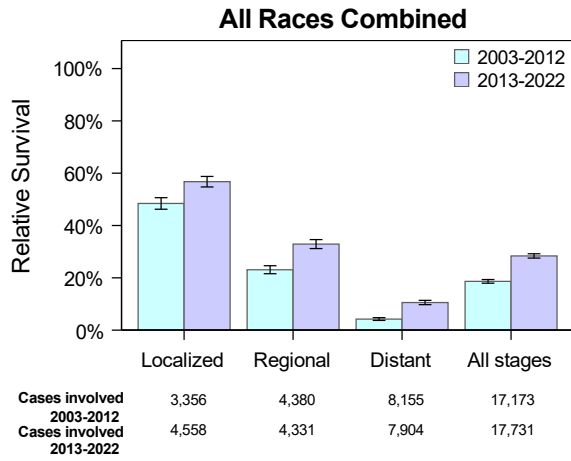
Data source: Kansas Cancer Registry.  
Last updated date: July 9, 2025.

# 5-year Relative Survival for Colorectal Cancer by stages



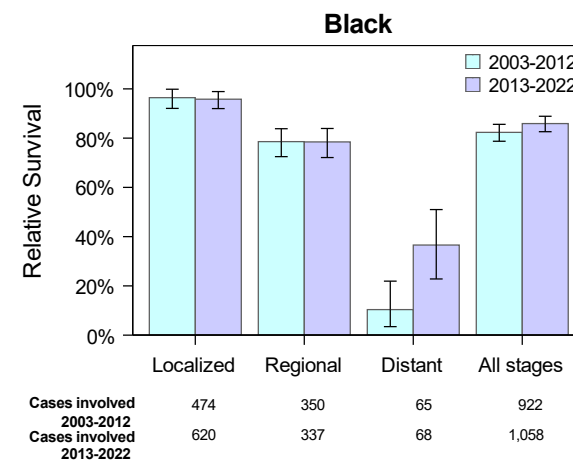
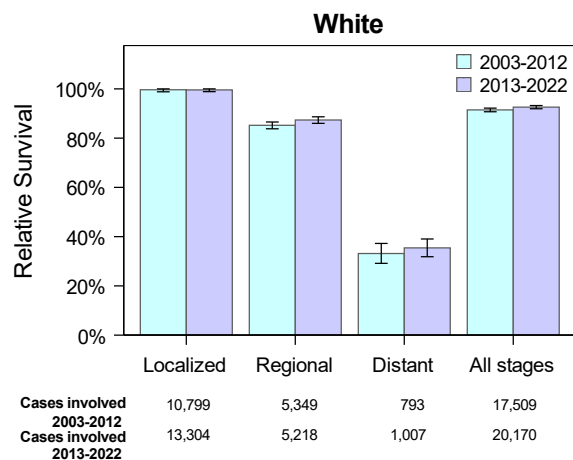
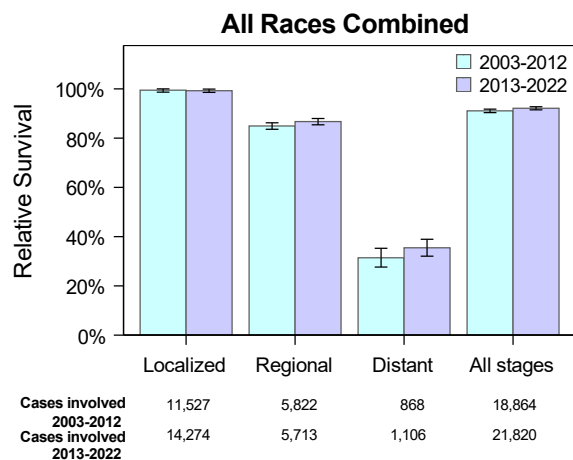
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Last updated date: July 9, 2025.

# 5-year Relative Survival for Lung Cancer by stages



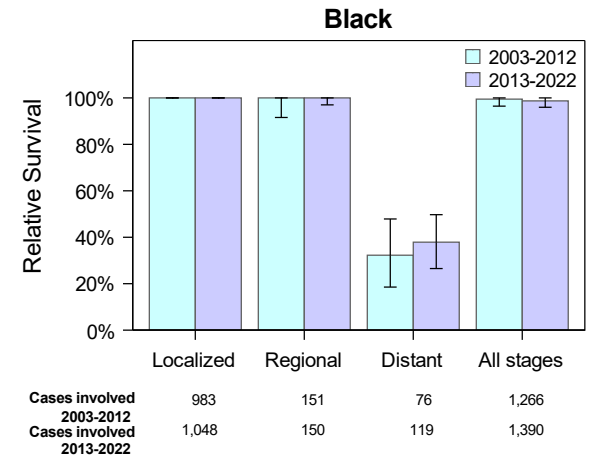
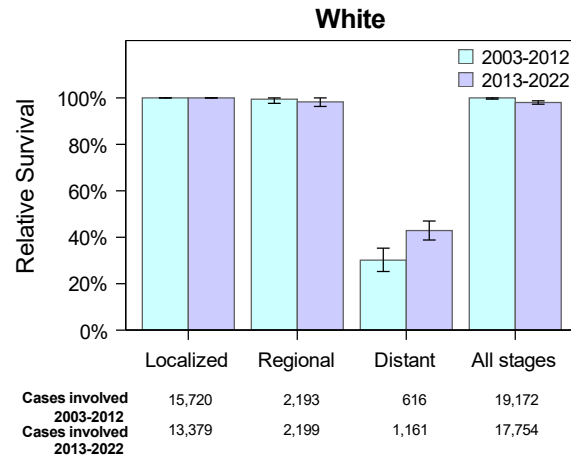
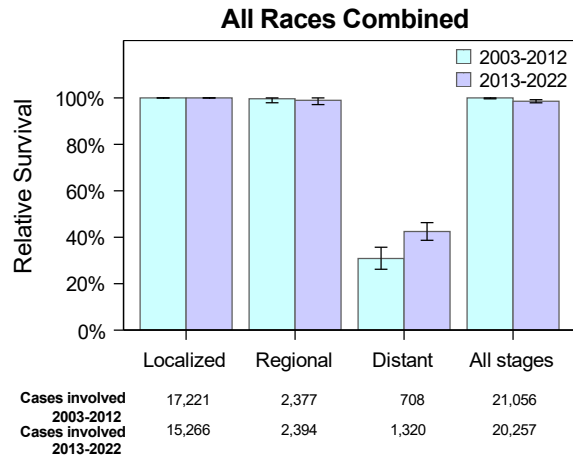
Data source: Kansas Cancer Registry.  
Last updated date: July 9, 2025.

# 5-year Relative Survival for Female Breast Cancer by stages



Data source: Kansas Cancer Registry.  
 Last updated date: July 9, 2025.

# 5-year Relative Survival for Prostate Cancer by stages



Data source: Kansas Cancer Registry.  
 Last updated date: July 9, 2025.