

# The SAGE Encyclopedia of Cancer and Society

## Costa Rica

Contributors: Narketta Sparkman & Hope Comer  
Editors: Graham A. Colditz  
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Across the world, cancer is the second-leading cause of death and disability. It has moved beyond high-income countries to low-income, developing countries. In developing countries, there is a silence that surrounds the disease that results from [p. 317 ↓ ] a lack of knowledge and meaningful information on causes and treatment. Many cultures never use the word *cancer* and rarely discuss the illness. The prevalence of cancer is on the rise in Costa Rica, claiming on average 2,559 deaths among men and 2,035 deaths among women per year. In 2009, there were 7,163 new cases of cancer in Costa Rica, and there is expected growth of 10,627 by 2020. There are many risk factors that contribute to the high rates of cancer. These include tobacco use, fruit and vegetable intake, alcohol consumption, obesity, and low physical activity. However, there are environmental and occupational risk factors that also lead to high incidents of cancer among Costa Ricans. Risk factors include agriculture occupations and the use of pesticides.

There are 14 regions in Costa Rica, and geographically, there are differences in the occurrence of cancer and types of cancers among Costa Ricans. The cancer registry was developed to help keep track of newly diagnosed cancer cases regionally as well as persisting cancer cases. The functioning and quality of the information in these registries is unknown. The cancer registry has catalogued many forms of cancer visible in Costa Ricans. In urban areas of the country, lung, colorectal, breast, uterus, ovary, prostate, testis, kidney, and bladder cancers were more visible. In rural regions, gastric, cervical, penile, and skin cancer were more prevalent. In excessive coffee-growing areas, skin cancer was diagnosed at a higher rate.

The growth of cancer in Costa Rica has been contributed to geographical and environmental differences such as the use of pesticides and occupational exposure to pesticides. Agriculture is the principal economic activity, and it has been this way for decades. In urban areas of Costa Rica, such as the Central Valley, Southern Central Valley, and Northern Central Valley, coffee is the main crop. In these areas, there is a high usage of pesticides, paraquat, lead arsenate, and copper. In rural areas of Costa Rica, noted as the northern mountain chain of Central Valley, Western Central Valley, southern mountain chain of Central Valley, Eastern Central Valley, east mountain chain, mid-north Costa Rica, Northern Central Pacific Region, Southern Central Pacific and South Pacific Region, northwest Costa Rica, mid-south Costa Rica, and east

Costa Rica, the main crops are coffee, sugarcane, corn, beans, rice and bananas. The use of pesticides is high in these areas, with many utilizing more than three or more combinations of pesticides. In these areas, pyrethroids, phenoxyacids, propanil, and fungicides are used, and formaldehyde is frequently used in addition to paraquat, lead arsenate, and copper. In fact, the excessive use of paraquat and lead arsenate in coffee-growing areas has been linked to skin cancer. Lung cancer and female hormone-related cancers have been linked to heavy pesticide use in rural areas among Costa Ricans. Cancer has also been linked to banana plantation workers, where there is use of formaldehyde and fungicides along with the more common pesticides.

High cancer risk has been declared among agricultural workers in Costa Rica. Skin and lip malignancies have been associated with ultraviolet radiation exposure during farming. Leukemia also has been linked to agriculture workers' exposure to viral zoonosis. Additionally, leukemia in children has been linked to mothers' occupational exposure to pesticides a year before conception and during the first and second trimesters. It was also found to link with fathers' exposure to pesticides during the first year of conception and the first trimester. Paraquat, benomyl, and picloram have been noted specifically as pesticides that contribute to childhood leukemia by parental exposure.

Researchers also have found that there were elevated risk estimates among banana plantation workers. Banana production, considered to be labor, and related work has been linked to excessive pesticide use for decades. Researchers have found that, among male banana plantation workers, there was an increase in melanoma and penile cancer. Among female banana plantation workers, there was an increase in cervix cancer and leukemia. Additionally, men's risk for lung cancer was elevated among those with longer lengths of employment.

Breast cancer has also become an increasing concern among women in Costa Rica. There has been an increase in occurrences between 1995 and 2003 from 32.3 to 40.07 percent per 100, 000 women. In 2006, there were 13.14 per 100, 000 women breast cancer-related deaths in Costa Rica, the highest occurring in malignant neoplasm. Self-exams and mammography have been the primary intervention focus for decades in Costa Rica, yielding really low coverage. Most are diagnosed at the hospital with [p. 318 ↓ ] advanced stages of breast cancer. Research has identified a need for early

interventions, which includes screening that extends beyond mammography and self-exams to combat diagnosis in advance stages.

The lack of control over work conditions and the lack of attention to environmental emissions from traffic, industry, and agriculture have led to the advancement of cancer regionally in Costa Rica. In fact, attention to the issues recently has become a concern in the country, causing Costa Rica to be behind in addressing these work and environmental issues. Furthermore, this country's developing status and reliability on agriculture to sustain the economy puts the country in a difficult position in addressing the use of pesticides. The new cases of cancer are expected to grow, and researchers offer the country limited alternatives in addressing the issues of cancer while maintaining its position in the agriculture production. Furthermore, there is a need for improvement in early detection of cancers, which include comprehensive advance screenings of breast cancer and cancers prevalent in areas of high pesticide usage as well as a need for cost-effective interventions for all types of cancer.

**See Also:** [Developing Countries](#); [Pesticides](#); [Screening, Access to](#).

NarkettaSparkmanHopeComer

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Further Readings

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