

OVERVIEW OF RISK FACTORS

Many of the known risk factors for cancer can be prevented.

Tobacco use, infectious agents, unhealthy diet, excess body weight, physical inactivity, and alcohol consumption account for the majority of cancer deaths caused by known risk factors.

Smoking causes multiple cancer types (see 03, *Tobacco*), and smokeless tobacco causes cancers of the oral cavity, esophagus, and pancreas. In 2017, smoking was responsible for an estimated 2.3 million cancer deaths globally (24% of all cancer deaths), with an additional 190,000 cancer deaths due to smokeless tobacco and secondhand smoke.

FIGURE 2.1 Types of cancer caused by infectious agents

INFECTIOUS AGENT	CANCER TYPE
<i>Helicobacter pylori</i>	Stomach
Human papillomavirus (HPV)	Genital organs (cervix, vulva, vagina, penis), anus, oral cavity, oropharynx, tonsil
Hepatitis B virus (HBV)	Hepatocellular carcinoma (liver)
Hepatitis C virus (HCV)	Hepatocellular carcinoma (liver), non-Hodgkin lymphoma
Epstein-Barr virus (EBV)	Nasopharynx, some types of lymphoma
Kaposi sarcoma herpes virus (KSHV)	Kaposi sarcoma, primary effusion lymphoma
<i>Schistosoma haematobium</i>	Urinary bladder
<i>Clonorchis sinensis</i> , <i>Opisthorchis viverrini</i>	Cholangiocarcinoma (bile ducts)
Human T-cell lymphotropic virus, type 1	Adult T-cell leukemia (blood) and lymphoma
Human immunodeficiency virus (HIV)*	Kaposi sarcoma, lymphoma, cervix, anus, conjunctiva of the eye

*Due to increased replication of oncogenic viruses (e.g., EBV and KSHV), mainly through immunosuppression.

Infectious agents can cause a wide range of cancer types. **FIGURE 2.1** However, there is large variation across countries in the proportion of cancers caused by infectious agents, ranging from around 4% in many very high-income countries to more than 50% in several sub-Saharan African countries. As such, in many low-income countries infection-related cancers are a leading cause of cancer deaths (see 04, *Infection*). **FIGURE 2.2**

Unhealthy diet, excess body weight, and physical inactivity cause multiple types of cancer (see 05, *Diet and Nutrition*) and are emerging risk factors for cancer worldwide. The cancer burden associated with these risk factors is expected to grow in most parts of the world, particularly in parts of the Middle East and several other low- and middle-income countries in parts of Asia and Oceania because of the obesity epidemic. Further, alcohol drinking is responsible for 4.2% of all cancer deaths globally, with marked variation across countries. **MAP 2.1**

Other risk factors known to cause cancer include excessive exposure to ultraviolet radiation from the sun and indoor tanning, which cause skin cancer (see 06, *UV Radiation*); some reproductive and hormonal factors (see 07, *Reproductive and Hormonal Factors*); and occupational exposures to hazardous substances and environmental pollutants such as air pollution, arsenic, and aflatoxin. **FIGURE 2.3, 2.4** (see 08, *Environmental Pollutants and Occupational Exposures*) The risk factors for cancer, however, are not limited to the above; for example, medical radiation and radiation from naturally-occurring high radon levels in residential places can cause cancer.

Infectious agents such as *H. pylori*, HPV, and hepatitis B and C viruses are responsible for a substantial proportion of cases for some cancer sites.

FIGURE 2.2 Prevalence (%) of human papillomavirus (HPV) infection (all ages) and HPV vaccination (ages 10–20 years) among females by continent

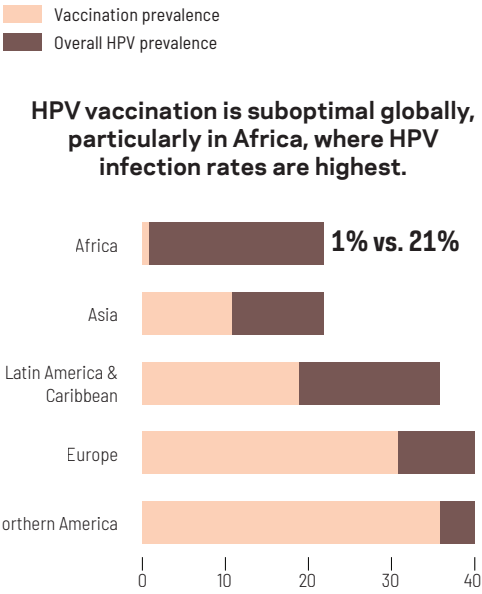
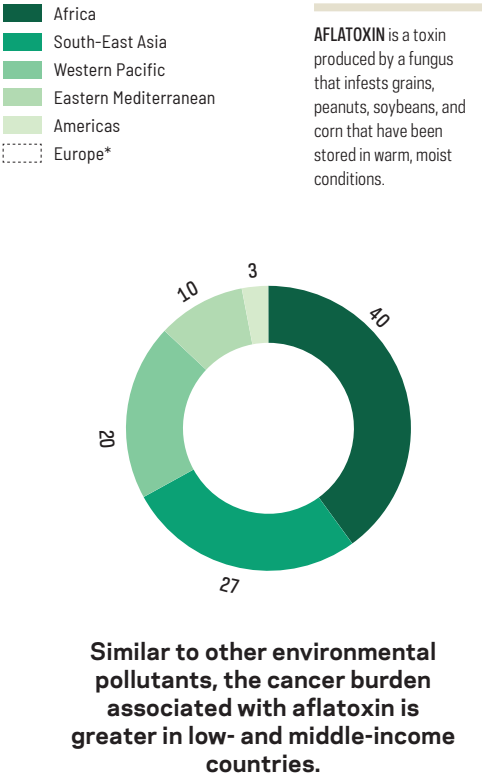


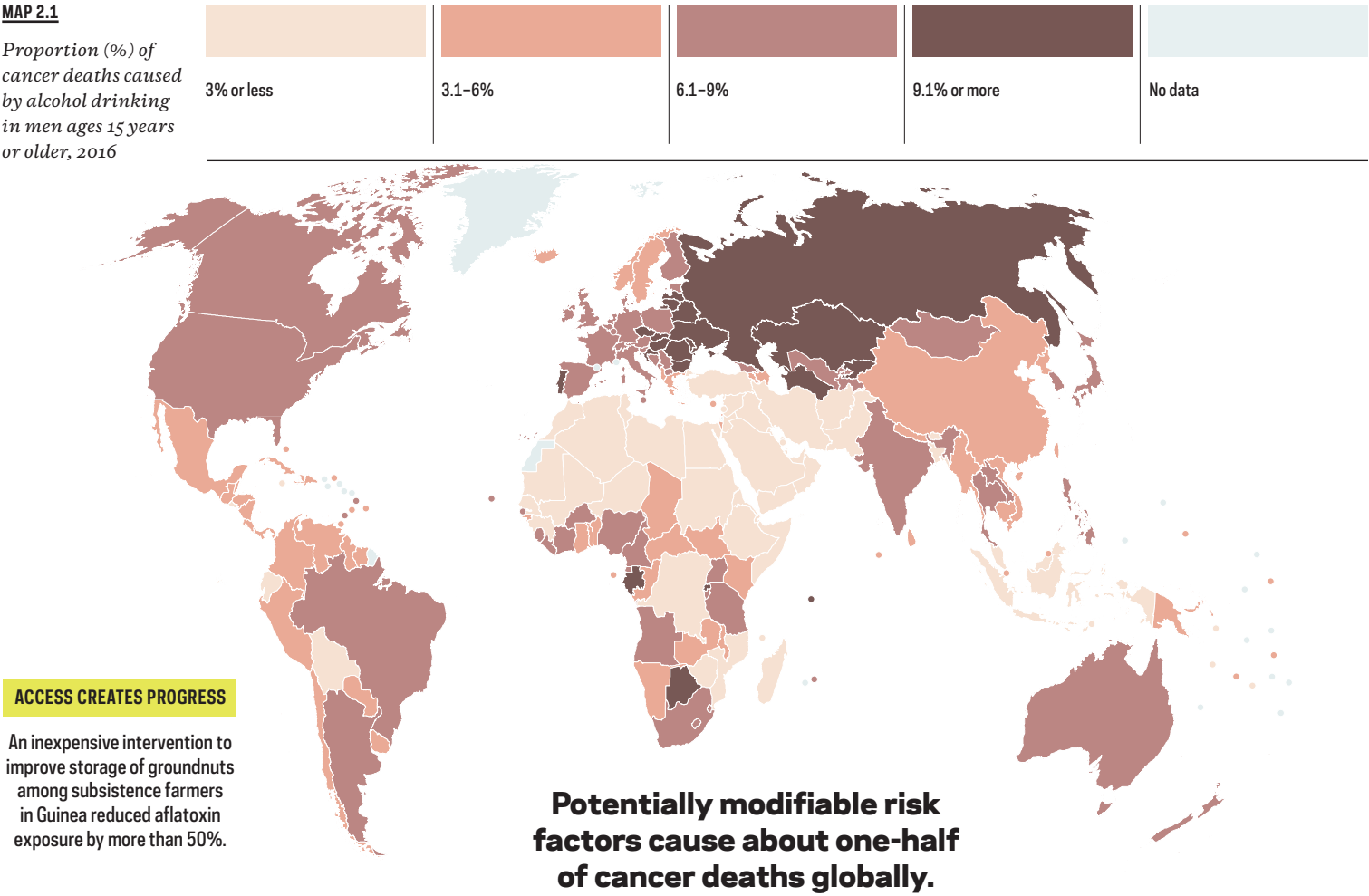
FIGURE 2.3 Distribution (%) of global aflatoxin-related liver cancer by WHO region



*Zero percent of aflatoxin-related liver cancer in Europe

MAP 2.1

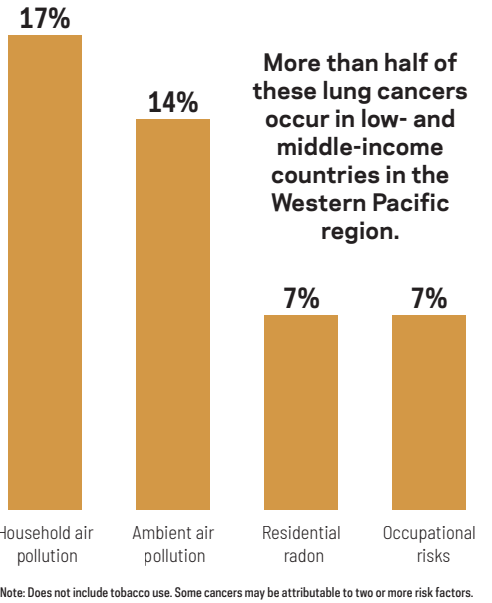
Proportion (%) of cancer deaths caused by alcohol drinking in men ages 15 years or older, 2016



ACCESS CREATES PROGRESS

An inexpensive intervention to improve storage of groundnuts among subsistence farmers in Guinea reduced aflatoxin exposure by more than 50%.

FIGURE 2.4 Proportion (%) of lung cancers caused by select environmental and occupational factors other than tobacco use worldwide



THE EUROPEAN CODE AGAINST CANCER

ECAC is an initiative of the European Commission, developed by the World Health Organization's International Agency for Research on Cancer (IARC). The ECAC aims to inform people about actions they can take for themselves or their families to reduce their risk of cancer.

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Ways To Reduce Your Cancer Risk

- 1** Do not smoke or use any form of tobacco.

2 Make your home smoke free. Support smoke-free policies in your workplace.

3 Take action to be a healthy body weight.

4 Be physically active. Limit the time you spend sitting.

5 Have a healthy diet:
-Eat plenty of whole grains, pulses, vegetables and fruits.
-Limit foods high in sugar or fat (high-calorie) and avoid sugary drinks.
-Avoid processed meat; limit red meat and foods high in salt.
- 6** Limit alcohol consumption. Not drinking is better for cancer prevention.

7 Avoid too much sun. Use sun protection. Do not use sunbeds.

8 In the workplace, follow health and safety instructions to protect yourself from harmful substances.

9 Know if you are exposed to radiation from naturally high radon levels in your home. Take action to reduce high radon levels.
- 10** For women:
-If you can, breastfeed your baby.
-Limit use of hormone replacement therapy.

11 Ensure your children take part in vaccination programs for hepatitis B virus and human papillomavirus.

12 Take part in organized cancer screening programs for cancers of the bowel, female breast, and cervix.