Climate Change and Patterns of Disease

Global climate has changed dramatically over the past 150 years. The primary cause: human-associated activity, particularly the burning of fossil fuels. This raises carbon dioxide (CO₂) levels in the atmosphere and leads to higher average global temperatures and extreme weather events. Increasingly, climate change is affecting how diseases spread, especially those transmitted by insects.

Other factors that affect the spread of insect-borne diseases include seasonal weather patterns, global trade and travel, and socioeconomic conditions.

Climate Change—It’s Not Just Global Warming

- Higher Temperatures
- More Precipitation
- Drought

Among global temperature increases, some parts of the world—like Africa—will experience increased agriculture and increased disease risk.

Rising precipitation can also cause more waterborne diseases, which can be mitigated with better water management and hygiene.

Drought can lead to water scarcity, which can increase the risk of waterborne diseases.

The Toll of Disease

Better public health infrastructures in the United States and other developed countries will continue to mitigate malaria transmission, even if the climate becomes more suitable for the disease. Insect-borne diseases have decreased in developed countries because of advances in eradication, insect surveillance and control, vaccinations, and disease prevention and treatment.

Consequences of these climate changes will be felt more greatly in tropical areas of the world, where insect-borne diseases such as malaria continue to threaten half of the world’s population. Problems with social and medical infrastructures permit greater risk of disease transmission. Climate change will complicate and intensify these global health issues.