



# YALE NATIONAL INITIATIVE

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Curriculum Units by Fellows of the National Initiative  
2015 Volume VI: Physiological Determinants of Global Health

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## **Towards an Understanding of Disease Burdens in Developing and Developed Nations**

Guide for Curriculum Unit 15.06.02, published September 2015  
by Cristobal Carambo

The effect of carcinogens and pathogens on human health is a central theme in all environmental science classes. Our health depends on an array of chemical, physical and biological processes that maintain homeostasis. These internal mechanisms are directed by codes stored in our DNA: our genotype. Health is however determined by the complex interaction of our genotype with the external environment as pathogens and toxins can invade our bodies and occasion disease and / or death.

Recent health crises have proven that health must be viewed from a global perspective.

This unit will explore the physiological determinants of global health in two distinct phases. Students will first study the cellular and genetic systems that maintain and safeguard their health. The second phase will require them to evaluate data sets from the 2015 WHO global health summary and explain how demography influences health outcomes.

The common core standards suggest that teachers provide students the opportunity to evaluate and critique the assumptions and theories that inform science phenomena in their everyday lives. Engaging students in the analysis of complex sociocultural issues that affect global health will help improve these vital analytical skills.

(Developed for Environmental Science, grade 11; recommended for Biology, grades 10-11)

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