

Hi, I'm Deboki Chakravarti, I'm a science educator, and today we're going to talk about how chronic illness impacts public health.

If someone from two thousand years ago could see a 21st-century hospital, they'd be completely baffled. Even someone from two hundred years ago might wonder why there are so few people with smallpox scars, or why the Bubonic plague isn't still raging across Europe and Asia.

Historically, infectious diseases that spread through person-to-person contact – like smallpox and the Bubonic plague – have been the biggest threat to human health, killing millions of people around the world.

But thanks to advances in science and medicine, most infectious diseases are less deadly today than they've ever been. The World Health Organization reported that in 2019, only 3 of the top 10 causes of death worldwide were infectious diseases.

Instead, chronic illnesses have become more common. These are illnesses that last for an extended time, and usually don't get passed through person-to-person contact. When infectious diseases decline and populations start living longer, people typically die from chronic illnesses that are more common in older populations – like cancer, heart disease and stroke.

This shift from more people dying of infectious disease to more people dying of chronic disease is called the epidemiological transition. And although it is a victory for public health that massive numbers of people aren't still dying of smallpox, it means there's a new challenge at hand: addressing the impact of chronic illnesses, and why they happen.

Now, people often develop a chronic disease because of their genetics, but lifestyle also plays a role. Take tobacco use, which the Centers for Disease Control and Prevention considers to be the number one preventable cause of death worldwide. We're talking about 7 million deaths each year.

And then there's nutrition. A diet that's high in cholesterol, saturated fats and added sugars can seriously damage our organs, and may lead to chronic conditions like hypertension or diabetes. Aspects of our lifestyle that we can change – like tobacco use and poor diet – are called modifiable risk factors. And although modifying them doesn't rule out the possibility of chronic disease entirely, it can make a difference.

The CDC reports that making changes such as quitting smoking or eating more nutritious foods can lower the likelihood of experiencing a chronic illness by as much as 80 percent.

But our lifestyles don't exist in a vacuum, so making the best choices for our health isn't always easy.

Research shows that changing the social norms around smoking is the most effective way to reduce tobacco use and improve people's health. So instead of simply telling everyone to quit smoking, public health efforts try to encourage behavior changes, by including taxes on tobacco products and warning labels on cigarette packaging.

Meanwhile, external influences like food ads and portion sizes at restaurants have strong subliminal effects on how we eat. Food ads, for instance, may use persuasive techniques to make highly-processed, low-nutrition foods look irresistible. But regulations on food and drink advertising might help shape people's dietary preferences for the better.

But even with such measures, not everyone can simply make the choice to eat nutritious foods if there aren't a lot of options nearby. The U.S. Department of Agriculture estimates that 40 million Americans live in areas without any nearby supermarkets, or without the transportation they need to get to supermarkets. Most of these communities are rural, low-income or home to racial and ethnic minorities.

So public health experts are working to increase access to healthy foods in areas where they're hard to find – by expanding public transportation in rural areas where many people live 20 miles away from the nearest supermarket. Or by supporting local communities in their initiatives to grow their own food.

Back in 2016, for instance, one-third of the Indigenous Ho-Chunk reservation in Nebraska lacked access to healthy food. So in 2020, the Centers for Disease Control and Prevention's Healthy Tribes program helped them establish 80 family gardens and a farmers market, which made weekly deliveries of fresh produce across the reservation.

So to sum up: yes, our lifestyle choices can have a negative impact on our health – and may even be killing us! But improving public health is much more than telling people to make better choices. It's making those choices possible by removing barriers to well-being, and nudging people towards a healthier day to day.

Thanks for watching! This video is part of a series created by Complexly and the American Public Health Association to shed a little light on the important work that public health does. To learn more, visit [apha.org](http://apha.org).

### Sources

<https://www.sciencealert.com/these-15-wild-sci-fi-predictions-about-future-tech-actually-came-true>

<https://www.amnh.org/explore/science-topics/disease-eradication/countdown-to-zero/smallpox>

<https://www.nationalgeographic.com/science/article/smallpox>

<https://origins.osu.edu/connecting-history/covid-black-death-plague-lessons>

<https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4038769>

<https://www.un.org/en/chronicle/article/lifestyle-diseases-economic-burden-health-services>  
<https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>  
<https://www.americanactionforum.org/research/chronic-disease-in-the-united-states-a-worsening-health-and-economic-crisis/>  
[https://www.cdc.gov/pcd/issues/2020/20\\_0130.htm](https://www.cdc.gov/pcd/issues/2020/20_0130.htm)  
<https://www.un.org/en/chronicle/article/lifestyle-diseases-economic-burden-health-services>  
<https://www.ncbi.nlm.nih.gov/pubmed/25703111>  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5740998/>  
[https://www.cdc.gov/pcd/issues/2021/21\\_0193.htm](https://www.cdc.gov/pcd/issues/2021/21_0193.htm)  
[https://academic.oup.com/cdn/article/3/Supplement\\_2/12/5497919](https://academic.oup.com/cdn/article/3/Supplement_2/12/5497919)  
<https://www.cdc.gov/chronicdisease/programs-impact/sdoh.htm>  
<https://apps.who.int/iris/bitstream/handle/10665/260253/WHO-NMH-PND-16.5Rev.1-eng.pdf;sequence=1>  
<https://www.cdc.gov/chronicdisease/center/nccdphp/how.htm>  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5740998/>  
<https://www.ams.usda.gov/services/grants/fmpp/awards>  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5104348/>  
<https://kidshealth.org/en/teens/high-blood-sugar.html>  
<https://www.kidney.org/news/kidneyCare/Summer10/HighCholesterol>