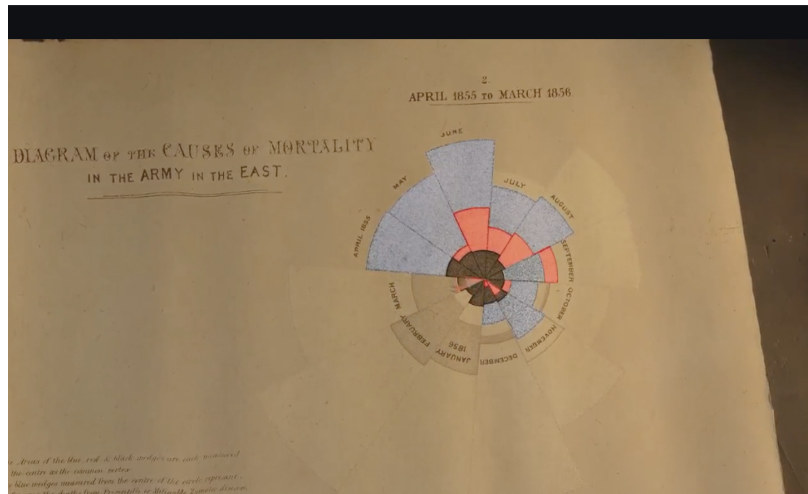


Extra Life: A Short History of Living Longer  
 Episode 4 - Human Behavior  
 Handwashing



In the fourth episode of *Extra Life*, Science Author Steven Johnson and historian David Olusoga discuss how the role that human behavior has played in extending human life spans across the globe.

**Warm-up:**

1. What is **hygiene**? Create a definition. Then, compare the definition you created to the definition below from the Merriam-Webster dictionary:

**hygiene** noun

Save Word

hygiene | \ 'hī-jēn \ also hī-'jēn \

**Definition of hygiene**

- 1 : a science of the establishment and maintenance of health
- 2 : conditions or practices (as of cleanliness) conducive to health  
 // has poor personal hygiene  
 // Brushing your teeth regularly is an important part of good oral hygiene.

2. When you think of **hygiene**, what products and practices come to mind? What do those products and practices do to help the maintenance of health?

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3. One important hygienic practice explored in this lesson is handwashing. Make a list in response to each of the following:
  - When should a person wash their hands?
  - What are the steps to properly washing your hands?
4. Discuss: What are some of the reasons people might not wash their hands when and how they should for their hygiene?

**Key Vocabulary:**

Aristocrat  
 Hygiene  
 Life expectancy

**Introducing the Video Clip:** [Extra Life | Episode 4: Handwashing](#)

[In this video clip](#), Johnson and Olusaga explore how different hygienic practices were developed, and how those practices led to increased life expectancy. They also explore the role that human behavior played in increasing how often people employed these practices.

The clip starts just after Johnson explains how Hungarian physician Ignaz Semmelweis advanced the importance of handwashing in medical facilities in the 19th century. Johnson explains how Semmelweis conducted research that proved how increased handwashing by medical professionals can decrease the number of deaths in medical facilities. He then explains that many medical professionals did not initially change their behaviors in response to Semmelweis’s research. This clip explores how Florence Nightingale, considered by many to be the founder of modern nursing, was able to further handwashing among medical professionals. It also explains the role that soap, and several medical innovations, played in increasing life expectancy over the course of the 19th century.

Watch the clip (8 minutes and 43 seconds) and answer the comprehension questions below.

**Comprehension Questions:**

<p>Describe the rose diagram created by Florence Nightingale. What data does it communicate about the causes of death in British military hospitals during the war with Crimea? How does it communicate that data? What is the impact of this diagram?</p>	
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According to Johnson and Olusoga, what other factors helped Nightingale’s ideas about hygiene spread gain traction among the larger public? How?	
What factors led doctors to change their hygienic practices in the 19th century? What impact did these changes have on the average human life expectancy?	
How does soap reduce the spread of disease?	
What does Johnson suggest is the science that could help people change their behaviors? How?	

**Discussion Questions:**

1. Historian David Olusoga describes soap as an innovation that “holds society together.” What do you think he means by that? What other innovations, practices and systems hold society together, and how?
2. The episode closes with a question about why practices like handwashing, which over time have continued to prove effective, have not been more widely accepted by the public. Johnson asks, “How do you persuade people to change their behavior, even if the behavior in question is something so easy to do, so familiar as washing your hands?” Why do you think some medical innovations and hygienic practices are adopted more than others?

**Extension Activities:**

**Create a rose diagram to communicate important health data about your community.**

Example: Conduct a survey in your class and/or community that communicates how often people are engaging with the following hygienic practices every month:

- Handwashing
- Flossing
- Brushing teeth
- Washing dishes
- Cleaning your bedroom

**Create a graphic that encourages a hygienic practice that prevents the spread of disease.**

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1. Identify a hygienic practice that you think is especially important for preventing the spread of disease.
2. Identify an audience for your graphic that you think especially needs to increase how often they are engaging with this hygienic practice.
3. Create a graphic for this audience that encourages the hygienic practice you have selected and explains why this practice is important.