

Grades: 9-12

NOVA: “Cuba’s Cancer Hope”

When the U.S. trade embargo left Cuba isolated from medical resources, Cuban scientists developed their own biotech industry - and promising lung cancer vaccines. Can they now team up with U.S. partners to make the treatments available to all?

After watching this episode, choose from the following questions and/or tasks to extend your learning

Question Box 1

- Can Cuba's innovative lung cancer vaccines give new hope to patients across the world?
- How did Cuba become a work player in fighting cancer?
- How are Cuban researchers working with U.S. partners to make the cancer medicines more widely available in the U.S.?
- What is the lung cancer vaccine?
- Why are some Americans defying the embargo and traveling to Cuba for cancer treatments?
- How does the impoverished little country of Cuba afford free health care for all of its people?
- What contributed to Cuba’s high lung cancer rates?
- How do the doctors describe how cancer begins in the body?
- What is CIMAvaxEGF? How does it help cancer patients?
- Explain what immunotherapy is according to the doctors and the narrator in the program.
- Can these cancer fighting drugs in Cuba become available in the United States?

Question Box 2

- What would a vaccine for lung cancer mean to the United States?
- Is Cuba obligated to share their research? Why or why not?
- What title might you choose for this episode? Why?
- What is this program “saying”?
- What more do you want to learn about this topic, and why?
- What in the program made you curious? Explain.

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Box 3 (Tasks)

- Discuss what is different about this type of cancer therapy.
- Discuss whether or not this type of treatment will affect other types of cancers.
- Discuss Innate Immunity with regards to cancer in humans.
- Design an Infographic about “Cuba’s Cancer Hope”.
- In 2016, 50 Americans went to Cuba for treatment. In 2017, 47 Americans were treated in the first eight months. Since then, the numbers have plateaued. Construct a graph depicting these numbers.
- What would a graph look like if the rate of Americans going to Cuba for treatment grew in a linear fashion? An exponential fashion?
- At the La Pradera clinic, patients stay for four days to receive several doses of the vaccine. They receive several doses which consist of 4 injections. One dose costs \$860. How much would a trip cost a patient looking for treatment? Justify your answer using mathematics.

Box 4 (Enrichment)

- What is cancer and how does it attack the body? Create a presentation to demonstrate this.
- Research and discuss a successful cancer treatment in the United States. (ELD)
Present your findings to someone.
- In what ways was Cuba’s isolation responsible for their “cancer vaccine?”
- Compare and contrast Cuba’s method of cancer research as compared to the United States.

Box 5 (Extend/Real-Life)

- Think like a Community Organizer.
- Go to <https://nbcnews.to/2WlyBJ> and look at the list of preventable cancers.
- Choose 1 of the causes and create a plan to organize and educate your school community on how to avoid this type of cancer. First you need a plan!
- Use the prompts below to lay out your plan.
 - Who: Who will benefit? Who will take part?
 - What: What will you do?
 - When: When will this take place?
 - Where: Where will this take place?
 - Why: Why is this project necessary?