

An Educator's Guide to the Breast Biologues

What is the Breast Biologues?

The Breast Biologues is an educational toolkit consisting of a 15-minute award-winning animated video and narrative comic book (available in English, Spanish and now in Vietnamese) The Breast Biologues incorporates time-lapse microscopic images to explain how the normal breast develops and how exposure to potential cancer-causing chemicals at specific times during development may influence future breast cancer risk. It was developed by the Bay Area Breast Cancer and the Environment Research Center (BABCERC). In 2010, the Centers transitioned to the Breast Cancer and the Environment Research Program, a nationwide network of grants jointly funded by the National Institute of Environmental Health Sciences and the National Cancer Institute.

Basic Science researchers in the Program study normal breast development and how it responds to environmental exposures. The information learned from basic science research is later applied to research aimed at developing new ways of preventing breast cancer as well as new therapies for treating patients. To achieve these goals, we need to understand the basic normal and abnormal processes in the body.

The Breast Biologues was developed to serve as an educational tool for high school teachers, college instructors and community members to facilitate a greater understanding of the biology of the breast and how specific exposures at certain times in development might affect future breast cancer risk.

What thoughts should students keep in mind when watching the video and/or reading the comic book?

- Why do we study breast cancer?
- How does the breast develop?
- How do exposures to potential cancer-causing chemicals at specific times during development influence future breast cancer risk?
- Why do researchers study puberty to learn about breast cancer risk?
- What did researchers observe during World War II that influenced what we know about breast cancer today?
- How long does it take for a normal cell to turn into a cancer cell?
- What's the difference between a normal cell and a cancer cell?
- How does radiation affect DNA in cells?
- What is the point of a project like the Breast Biologues?

What will students learn from the Breast Biologues?

After viewing the movie and/or reading the comic book students will be able to:

- Explain why breast cancer is important to study and understand.
- List two ways that basic science research is conducted.
- Discuss how basic science research advances prevention, detection and treatment of breast cancer.
- Describe what researchers involved in the Bay Area Breast Cancer and the Environment Research program are studying and why.
- Discuss why basic scientists focus on normal breast development to understand how cancer occurs.
- Describe how the breast develops.
- Identify a period of development when the breast may be more sensitive to environmental exposures.
- Explain what causes a normal cell to turn into a cancer cell.
- Explain how normal and tumor cells behave in the breast.
- Name the best documented environmental exposure known to cause cancer.