



Virtual Learning

Medical Interventions Chemotherapy

April 21, 2020



Medical Interventions

Lesson: April 21, 2020

Objective/Learning Target:

Describe how specific chemotherapy drugs interact with and destroy cancer cells. (3.3.1)



Let's Get Started:

1. Watch this introductory video on [chemotherapy](#).
2. Why does chemotherapy result in hair loss?



Let's Get Started: - Answer

1. Watch this introductory video on [chemotherapy](#).
2. Why does chemotherapy result in hair loss?
 - a. Chemo drugs target all rapidly dividing cells



Lesson Activity

Using the information on the [ACS website](#), identify the main types of chemotherapy drugs and how they work.

1. Alkylating agents
2. Antimetabolites
3. Antitumor antibiotics
4. Topoisomerase inhibitors
5. Mitotic inhibitors



Lesson Activity - **Answers**

Using the information on the [ACS website](#), identify the main types of chemotherapy drugs and how they work.

1. Alkylating agents - drugs that bind to specific DNA cells and stop their replication
2. Antimetabolites - drugs that block the use of nutrients essential to the growth of cancer cells
3. Antitumor antibiotics - special types of antibiotics formulated to inhibit RNA synthesis as well as slowing down/preventing mitosis
4. Topoisomerase inhibitors - interfere with enzymes that separate DNA strands
5. Mitotic inhibitors - stops the cells from undergoing mitosis



Practice

Indicate which class of chemotherapy drug matches the description.

1. Topotecan prevents cancer cell DNA from separating.
2. Cabazitaxel prevents microtubules in cancer cells from forming.
3. Busulfan works by destroying the DNA of the cancer cell.
4. Valrubicin binds directly to the DNA to prevent it from being copied.
5. Pentostatin blocks a much needed nutrient for the cell.



Practice - **Answers**

Indicate which class of chemotherapy drug matches the description.

1. Topoisomerase inhibitor
2. Mitotic inhibitors
3. Alkylating agents
4. Antitumor antibiotics
5. Antimetabolites



Additional Practice/Resources

1. Review the different ways in which chemotherapy drugs work by creating a visual aid or graphic illustrating each major type.
2. Check your understanding by completing this [case study](#) (part 3 and 4) over chemotherapy.
3. Read [this article](#) to learn more about chemotherapy drug resistance and the challenges it provides.