## Anesthesia

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**Summary:**
This lesson covers the three main types of anesthesia: local, regional, and general. Characteristics of each type are covered in detail, including administration methods, examples of surgeries which utilize which anesthetic, monitoring, risks associated, and other important aspects.

**Keywords:** local anesthesia, topical anesthetic, regional anesthesia, peripheral regional anesthesia, central anesthesia, epidural, spinal block, general anesthesia

**Grade Level:** 9th-12th

**Learning Objectives:**

The learner will:

* Differentiate between the three types of anesthesia with respect to administration methods, types of surgeries/operations used for, and other basics characteristics
* List criteria for choosing between the different types of anesthesia.
* Identify the purpose of an anesthesiologist and what he/she monitors.

**Time Required:** 2 – 45 minute class periods (1 for presentation and quiz, 1 for activity)

**Materials:**

* Associates files for Presentation, Quiz, and Activity

**Background and Concepts for Teachers:**

* Basic knowledge of the different types of anesthetic
* Ability to differentiate between the types, how they are administered, general characteristics of each, during which surgeries you would use them

**Vocabulary / Definitions:**

* **local anesthesia**: anesthetic is given in the form of spray, shot or ointment to numb a small area of the body; patient remains awake and conscious, insensitive to pain yet can still feel pressure and sensation
* **topical anesthesic**: applied to the surface of the body to numb that area, esp. before injection of a needle
* **regional anesthesia**: numbs a wider region of the body by interacting with the nerves or central nervous system
* **peripheral regional anesthesia**: block a nerve or nerve bundle to numb a limb
* **central anesthesia**: anesthetic is injected into cerebrospinal fluid or into space outside spinal canal
* **epidural**: anesthetic feed via catheter into epidural space for loss of sensation from the waist down
* **spinal block**: injection into cerebrospinal fluid for waist-down paralysis
* **general anesthesia**: anesthetic administered via IV or gas to render patient unconscious and immobile

**Lesson Introduction / Motivation:**
Get students excited about learning about anesthesia by showing the funny YouTube clip at the beginning of the PowerPoint presentation. The clip is a little long, so feel free to stop it whenever you wish.

**Presentation/Explanation:**
The Anesthesia Power point presentation aids in teaching students about the different types of anesthesia, how they’re administered, their effects, etc. Encourage students to take notes, because there will be a quiz following the presentation.

Slide 2: As previously mentioned, there is a video here to get students excited for this anesthesia lesson. It’s a funny video of a brother and sister who are driving home after getting their wisdom teeth out.

Slide 3: General Meaning/Three Types

Slides 4-7: Local Anesthesia

Slides 8-11: Regional Anesthesia

Slides 12-20: General Anesthesia

Slide 21: Determining Factors

**Activity/Application:**

For the activity, students will be grouped into two or more teams and will compete in a game of Quiz-O-Rama. The game is similar to jeopardy with questions in different categories; the points for each question increases with its difficulty. For detailed instructions on how to play the Quiz-O-Rama, begin the presentation in Slide Show mode and click on instructions.

When you are ready to play the game click on ‘return to main menu’ and begin by following the instructions to enter the number of teams, team names, and whether you’d like scores displayed after every entry – best to select N.

In order for Quiz-O-Rama to work macros must be enabled: Settings under Tools > Macros > Security set to medium.

After the team has had a chance to decide their answer, they may give their answer by writing them down on note cards (including team name/number) and passing them to you read aloud or just holding up their answer on a piece of paper.

When the answer is correct you click the top gray + row for each team that is correct, if the answer is incorrect you click the bottom black – row for each team that is wrong

Play around with this PowerPoint beforehand to get a feel for it.

**Lesson Closure:**

To close the lesson, have students write a paragraph scenario of a hypothetical situation in which they would need a certain procedure or operation and therefore anesthesia. They should explain which type of anesthesia they think should be used on them, the characteristics of that type of anesthesia, and any associated side effects they might experience.

**Assessment/Evaluation:**

Use the “Anesthesia quiz” to test students’ comprehension of anesthesia. It addresses the concepts of monitoring, general characteristics of each type, medications, administration methods, operations associated with each, side effects, and how to determine which type to use.

**Resources:**

* <http://youtu.be/Ig-pZ4OyidY>

**References:**

* <http://science.howstuffworks.com/anesthesia.htm>
* [http://kidshealth.org/teen/your\_body/medical\_care/anesthesia\_types.html#](http://kidshealth.org/teen/your_body/medical_care/anesthesia_types.html)

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