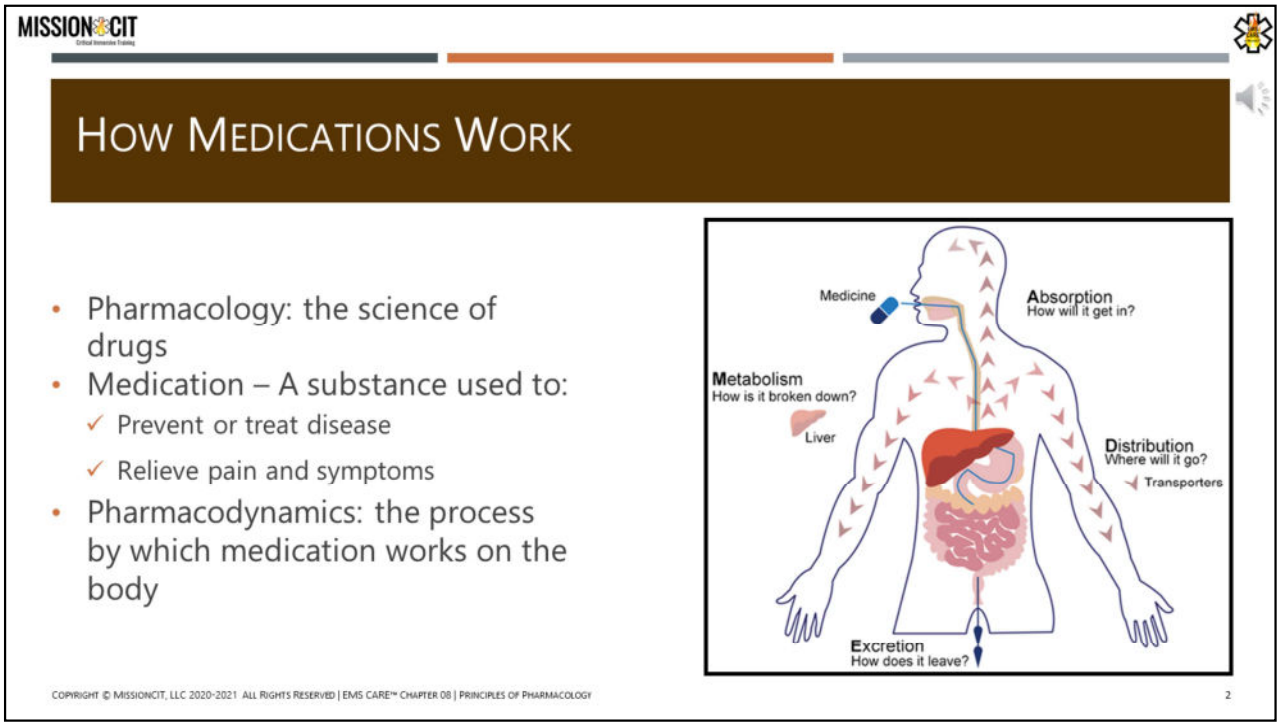


Thank you Justin. Let's begin with Medication safety where we talk about the need for medications and how they work. In this chapter, we talk about how medicines perform, basic terminology you should know, drug names, contraindications, and side effects.



The Merriam Webster dictionary defines pharmacology as the science of drugs or medications that includes their origin, composition, use, physiological effect, and toxicology. Medication, on the other hand, is a specific drug that is taken orally or placed in the body. Medications do one of the following:

- It cures a disease. For example, antibiotics cure an infection.
- It prevents certain conditions. For example, a rotavirus vaccine prevents health complications that can come from rotavirus infection.

- It relieves symptoms. For example, pain relievers reduce pain.
- It is used to treat health conditions. For example, antidepressants treat depression.

Now, it's important to know the effect of different drugs on the body and that's where Pharmacodynamics comes into play. It is the branch of medicine that explains the biochemical, physiological, and molecular effects of a medication on the human body.



As an EMT, you've got to be familiar with some terminologies.

- Agonist: ScienceDirect states that an agonist is a compound that binds itself to a receptor and activates it.
- Antagonist - An antagonist, on the other hand, is a drug that binds to a receptor, but dampens its biological response or blocks the response. As you have guessed, an antagonist is the opposite of an agonist.
- Dose: Dose is the measured quantity of medicine

that is injected into the body depending on the patient's weight, age, and the desired action of the medication.

- Action: An action or a drug action is the pharmacodynamic process of a drug. In other words, it is the impact a drug produces on a body.
- Indication: An indication is a valid reason to use a certain medication or perform a test, procedure or surgery. In terms of medication, an indication is the use of a drug to treat a condition
- Contraindication: As the name suggests, a contraindication is the opposite of indication and is a reason to withhold treatment or medication as it could harm the individual.
- Side effects: Side effects are the outcome or effect of a drug that's different from its intended therapeutic effect.



An important part of medication safety is to be able to identify the type of medication.

The good news is you can know it all from the name, as manufacturers adhere to a certain naming standard for easy identification.

Broadly speaking, there are two types of medications. The generic, and the trade or proprietary name.

Generic names are simple, clear, and have non-proprietary names. That is, you won't know the company that manufactured it. Your best example is acetaminophen. These drugs have simple names that

aren't associated with any specific company.
On the other hand, medications that are associated with a particular manufacturer have a trade name and this drug is identified as the exclusive property of the company making it. And this drug can have more than one trade name. A good example of a trade name is Tylenol.
Another example to make it clear for you. Phenytoin is the generic name and Dilantin is the trade name of a class of drugs used for seizures.



You can know a lot about a medication from its name. Based on the name, you can know if a medicine is a prescription one, as this will have a brand name associated with it.

Over-the-Counter medications are mostly the generic name we saw earlier.

Recreational drugs include analgesics, depressants, stimulants, and hallucinogens that are taken for fun and to get a high. Unfortunately, this can be dangerous.

These drugs have scientific names or local street names. For example, cocaine is commercially known as Cocaine

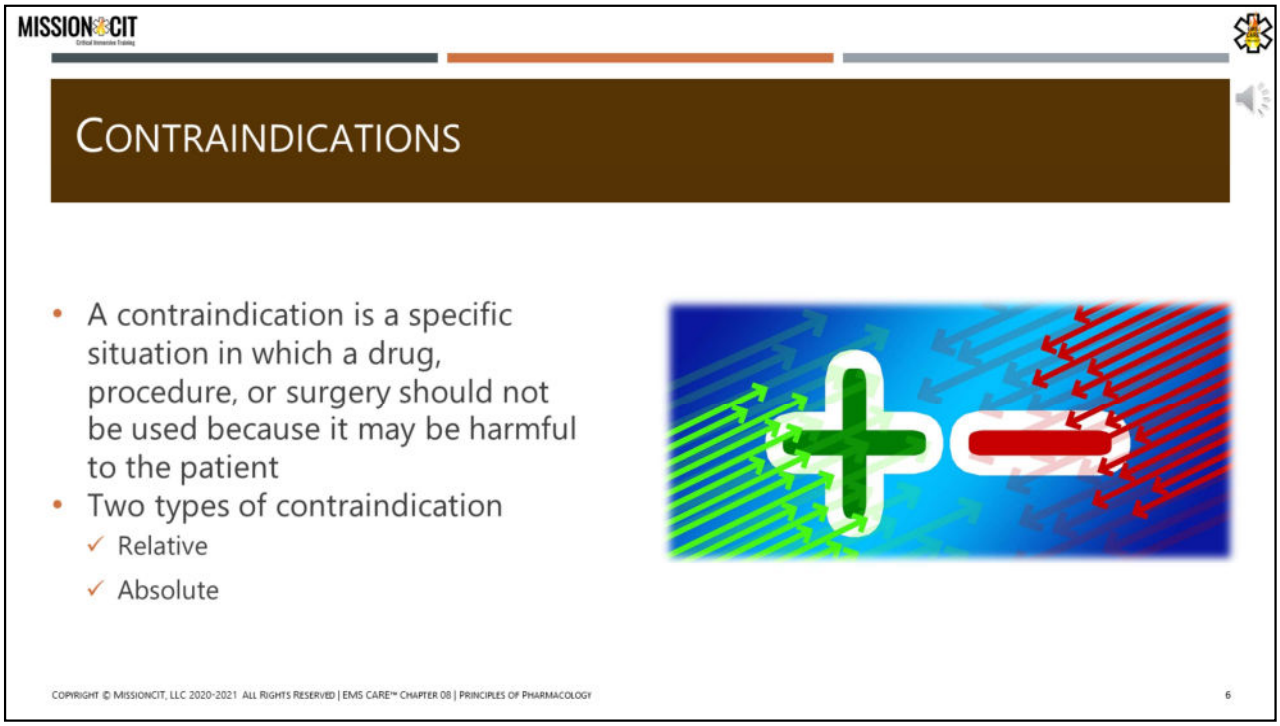
hydrochloride but is more commonly known by its street names such as white powder, candy, rock, coke, crack, and more.

Herbal remedies tend to have the name of a herb or a plant in its name. Some examples are ginseng, elderberry, turmeric, and more.

Enhancement drugs are those drugs used to enhance the performance or activity in humans. These drugs have the names of common stimulants such as caffeine, creatine, etc. or have the words steroids or stimulants in its name.

Finally, we have the vitamin supplements that will have the name of a vitamin or mineral, so that should be easy to identify.

These are the intended effects of each of these drugs.



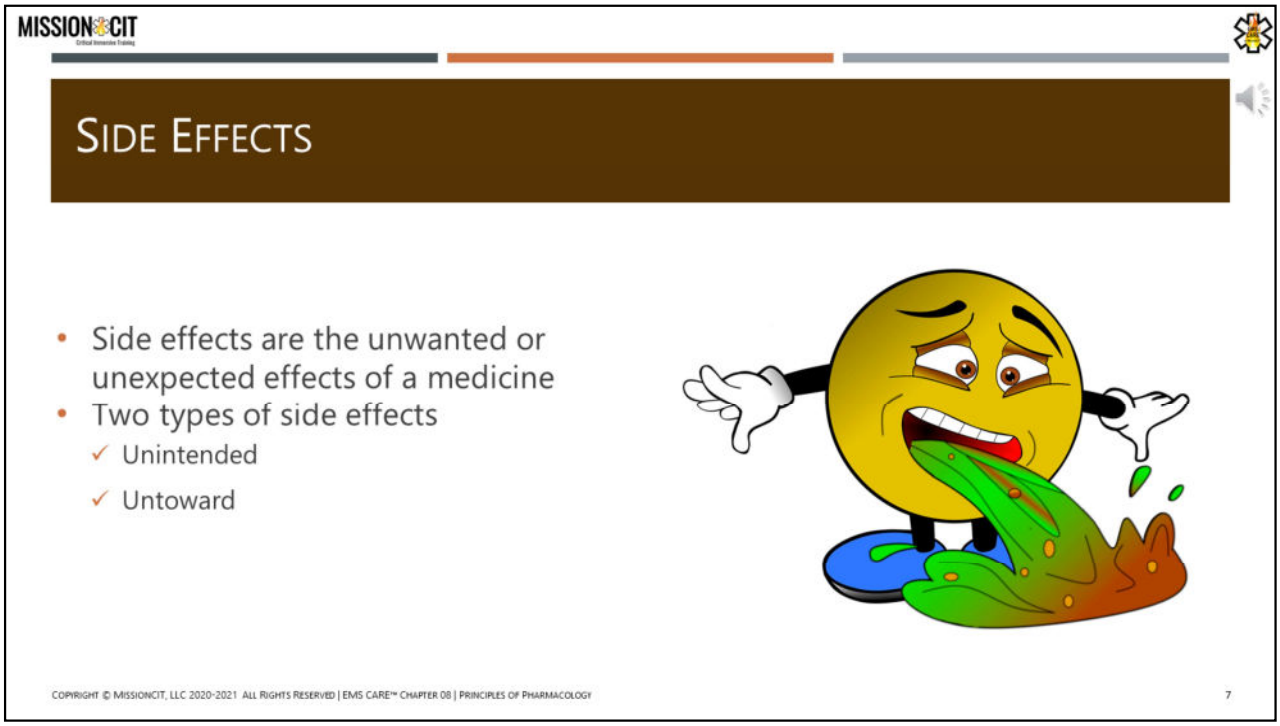
Contraindication is a situation in which two drugs, surgeries, or procedures should not be used together on a person as it can be harmful.

There are two types of contraindications, and they are, relative and absolute contraindications.

A relative contraindication means you have to use caution when using two drugs or procedures as they can contradict with each other. That said, it may be acceptable to use these drugs together if the benefits outweigh the risks.

An absolute contraindication, on the other hand, means

that two substances or procedures should never be used together as it can lead to a life-threatening situation. This combination must be avoided at all costs.



Side effects are the unwanted or unexpected effects of a medicine. All medicines may have side-effects, but they are mild for the most part and get better over time.
There are two types of side effects, and they are, unintended and untoward.
According to the World Health Organization, unintended effects occur when medicines are administered properly at the normal dose. These effects are related to the pharmacological properties of the drug and are mostly mild.
Untoward effects, on the other hand, is a serious

adverse effect or reaction that is life threatening and may require immediate hospitalization. It results from the intervention related to the use of a product.
With this, we come to the end of this lesson.
Next, Justin will introduce you to the different routes of medication.