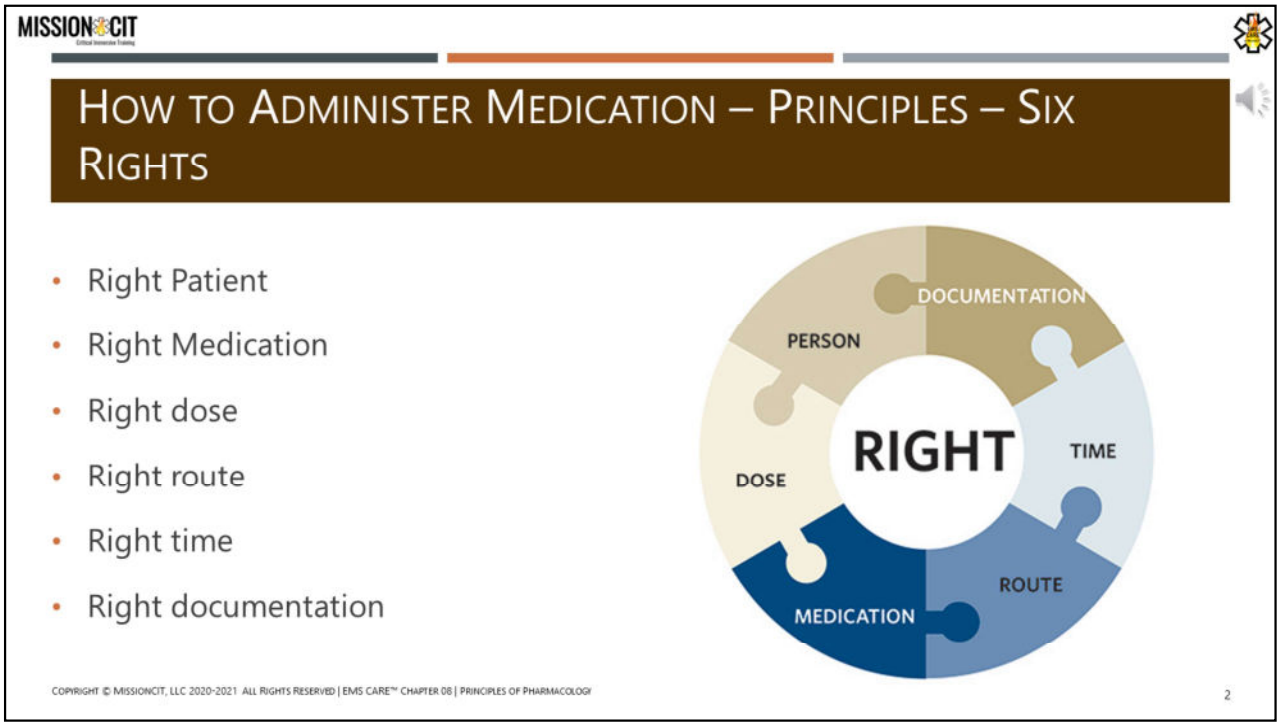
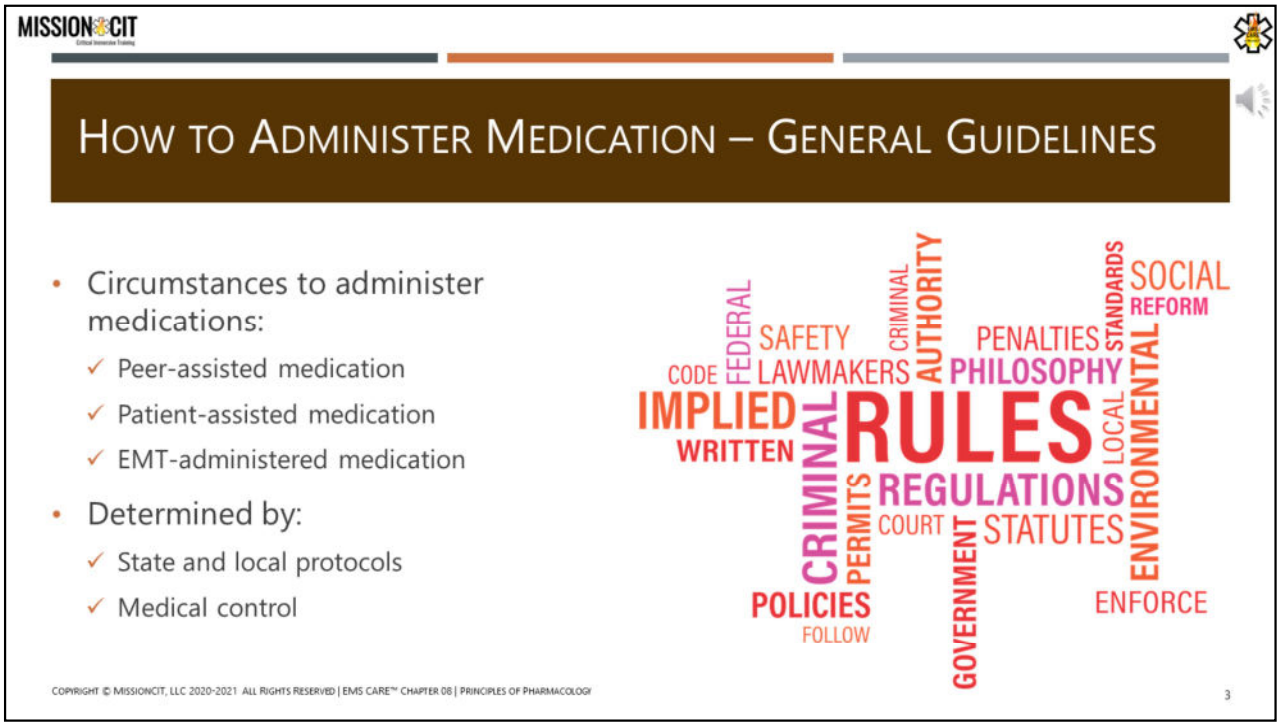


Thanks, Missah, for providing information on the different types of medicine. Now, moving on, we will discuss on how to administer the same. The six rights of medication administration should always be kept in mind. We will also discuss the general guidelines, oral medicines, types like intramuscular, auto-injectors, naloxone, administering oxygen, and MDIs. Good studying.



In this lesson, we will take a hands-on look at how you should administer different types of medications.
As a rule, there are six principles you should keep in mind before administering medication, and they are: Right patient, Right medication, Right dose, Right route, Right time, and Right documentation.
Let us take a brief look at what each of these means.
As a first step, confirm if you are talking to the right patient. Check the first and last name and see if the name on the order matches with the answer given by the patient.

Next, check if the medication you are going to administer is the right one. Check if the medication label matches the order. Double-check again for look-alike and sound-alike medications to ensure that you administer the right medication that matches what the order says.
The third principle is the right dose. The amount of medication you administer must match the order. Watch out for instructions on half, whole, and even multiple tablets.
The fourth principle is the right time. Ask yourself if the specified time interval between doses has passed. Also, check for times and intervals in the patient order and follow it diligently.
The fifth principle is the right route. As we saw in lesson two, there are different routes for medication, so you have to administer medicines in the route prescribed in the order. Before that, check if any transdermal patches have been removed or if the medication should be mixed or crushed with other substances. Following the orders correctly can make a big difference to the patient's health.
The last principle is the right documentation. Right after you administer, note down your action including the date and time when it was administered. This can help other EMTs to take over when you are not around.



Over the years, EMTs have been given greater responsibility to administer medications to patients. Still, you must abide by the general guidelines laid down by apex bodies and specific guidelines of the organization you work for.

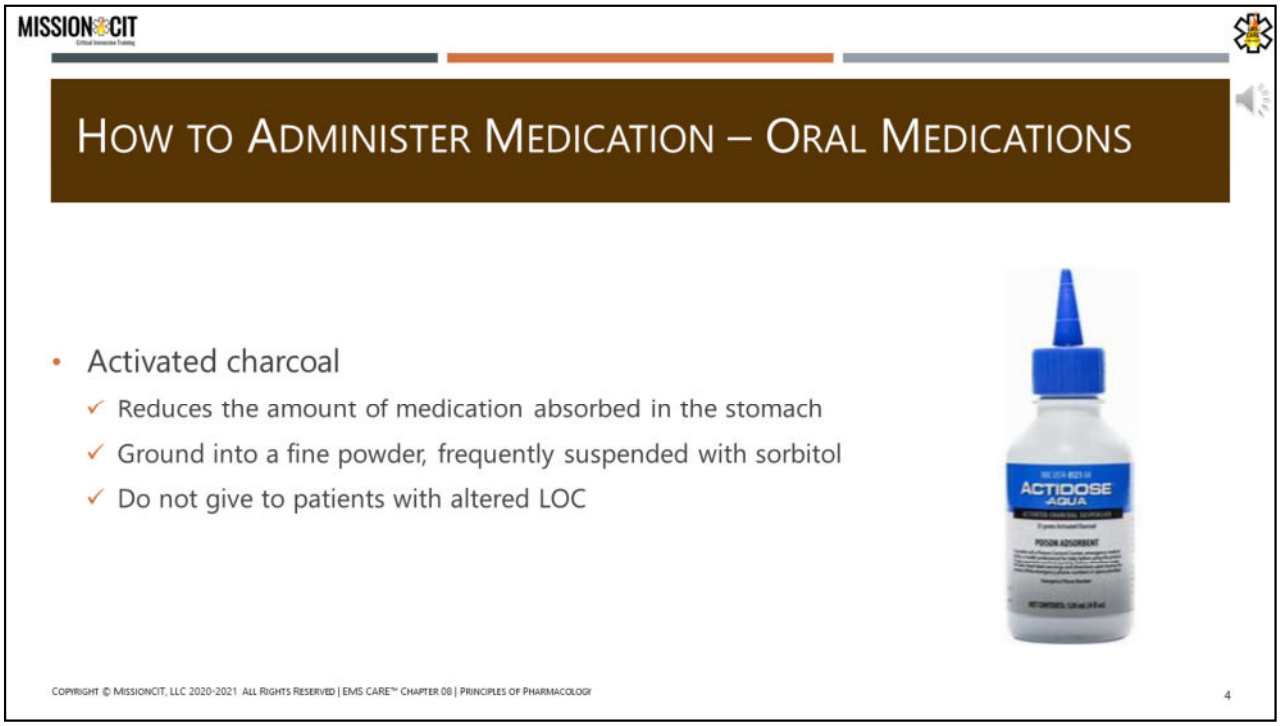
There are only a bunch of circumstances when you can administer medications. Let's look at these scenarios.

The first situation is a peer-assisted medication where you administer medication to yourself or your partner for protection. A good example of such a scenario is when you have been exposed to a toxic agent.

The second scenario is a patient-assisted medication where you help a patient to administer medication by himself or herself. In such scenarios, you will most likely guide through the administration of epinephrine auto-injector, nitroglycerin, and metered dose inhaler.

The third likely scenario is when you will administer medication to a patient. This situation will arise when a patient is utterly confused or is unable to process or follow the instructions for medication administration. Typical medicines you will administer in this scenario are oxygen, oral glucose, and aspirin.

Now, before you administer medication, understand the state and local protocols pertaining to medication administration by an EMT. You must read through the state medical control policies, state guidelines, and local standards and protocols as these could vary from state to state.



Now that you know the general guidelines, let us get into some of the medicines commonly administered by EMTs. First off, we will talk about oral medications. These are one of the most used kinds of medication since they are easy to use, and readily available most times. The other advantages include fewer drug reactions and greater acceptability from patients, when compared to parenteral routes.

It requires only minimal training to use and can be extended to post-treatment as well.

That said, there are some disadvantages as well. Since it

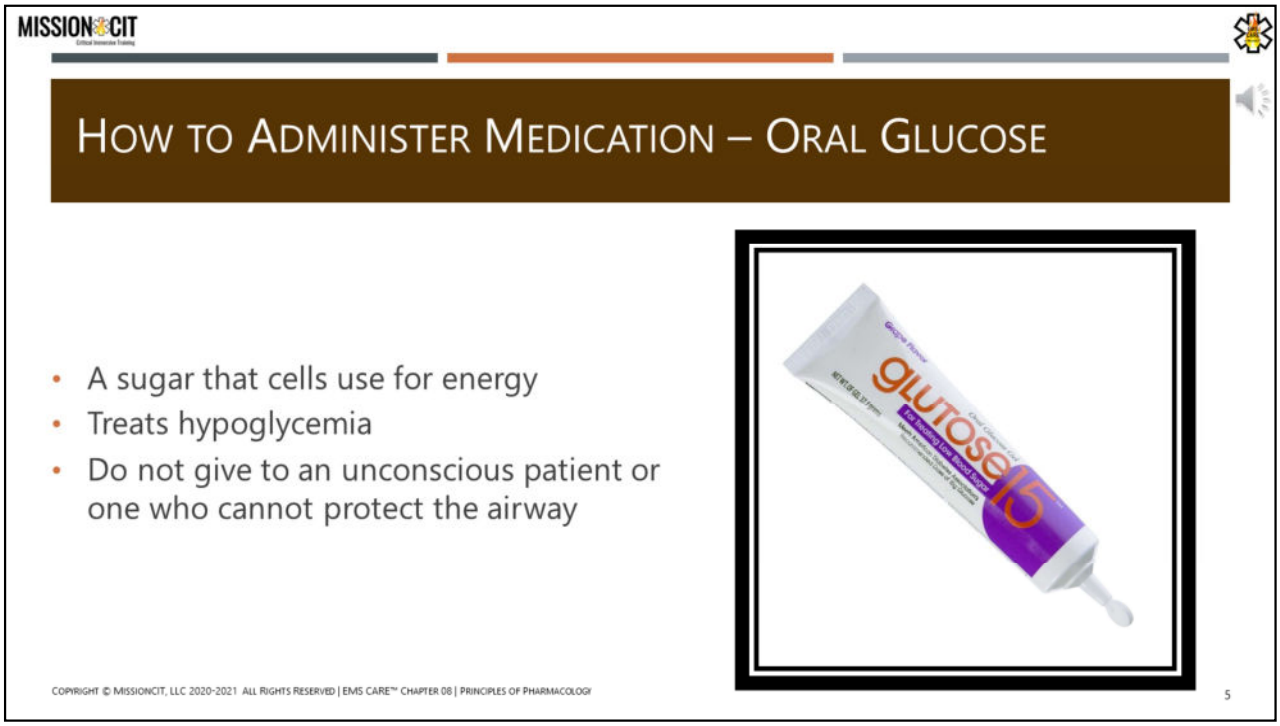
goes through the digestive tract, the rate of absorption can vary based on stress, illness, and other factors. Also, the dosages tend to be empirical and the reaction will be delayed as well.

With this understanding, let us learn about some specific types of oral medications that you'll most likely administer as an EMT.

The first kind of oral medicine is activated charcoal. It is used to handle poisonings and overdoses through the mouth. In this medication, charcoal is ground to a fine powder and is suspended with sorbitol to prevent the body from absorbing the poison. It works by binding the poison to its surface, so the body is unable to absorb it while the sorbitol acts as a laxative to move the charcoal quickly through the digestive system.

This activated charcoal must be administered through the mouth and this could be unappealing to some patients. In such cases, put the medication in a container and ask the patient to drink it with a straw. While doing so, the clothes can get stained, so take the necessary precautions if needed.

Now, this medication must not be administered to patients who have an altered level of consciousness or if they have ingested acid, alkali, or any petroleum-based product. It may not be ideal for those who are pregnant or nursing.



Another kind of oral medicine that you may administer is oral glucose.

Glucose is a simple sugar that gives energy to all living beings. It is used by cells to produce energy and is most essential for brain cells. When your cells do not get enough glucose, it leads to a condition called hypoglycemia or extremely low blood sugar, a potentially dangerous condition.

The best way to quickly handle such patients is to administer glucose that can quickly counter the impact of hypoglycemia, stabilize the patient, and send blood

sugar to the brain cells.
As an EMT, you can administer glucose only through the mouth in the form of a gel or glucose tablet. To administer a gel, apply it on the mucous membranes between the cheek and gum for fast absorption. If the patient can follow instructions, give oral glucose tablets. An important rule is you should never give an oral glucose tablet to a patient who is unconscious or is unable to swallow to ensure that the airway doesn't get choked.



Aspirin is a common medication used to relieve fever, inflammations, common cold, and moderate pain such as toothaches and headaches. It is also useful during a potential heart attack to inhibit the aggregation of platelets.

Though this is a commonly used medication, it's not for everyone. Never give it to children and to patients who have pre-existing kidney and liver diseases, diabetes, stomach ulcers, and bleeding disorders. Some people are hypersensitive to aspirin, so check this aspect as well before administering it.



Sublingual medications are those that are placed under the tongue, so they quickly dissolve and are absorbed by the blood through the tissues.

This medication route is chosen when you want the drug to get into a patient's system quickly or when the patient has problems swallowing. This route can be particularly useful during a heart attack or in other situations when the drug must be absorbed quickly.

The other advantage is these drugs do not go through the digestive system, so you can get the same effect

even with lower dosages.

Of course, sublingual medications come with its share of disadvantages too and may not be ideal in all situations. For starters, it's absorption rate can vary depending on the food you eat or drink. Also, smoking can lower the absorption rate of this drug. It also requires constant evaluation to ensure that the airways are not constricted.

This drug is not ideal for patients with mouth sores, and for drugs that need to be processed slowly by the body. Never administer it if the patient is unconscious or uncooperative.

The most common sublingual medication is nitroglycerine as it is used to provide immediate relief for angina pain in people who have coronary heart disease. It is also used just before an episode of angina to prevent it from occurring.

This medication is so critical because it relieves spasms by increasing the blood flow and hence, dilates the coronary arteries and veins. When the arteries dilate, the chances of a heart attack reduce greatly.

Similarly, it relaxes the veins in the body, so less blood is returned to the heart, thereby decreasing its load.

administering this drug. First off, the patient's blood pressure is checked, and if the patient's systolic pressure is less than 100mm Hg, it should not be administered as it can have a negative effect. If the patient has a systolic pressure of more than 100mm Hg, make sure the patient sits or lies down with his or her head elevated before taking the medication as sudden changes can cause fainting.

Make sure you follow the local protocols and understand your assisting role.

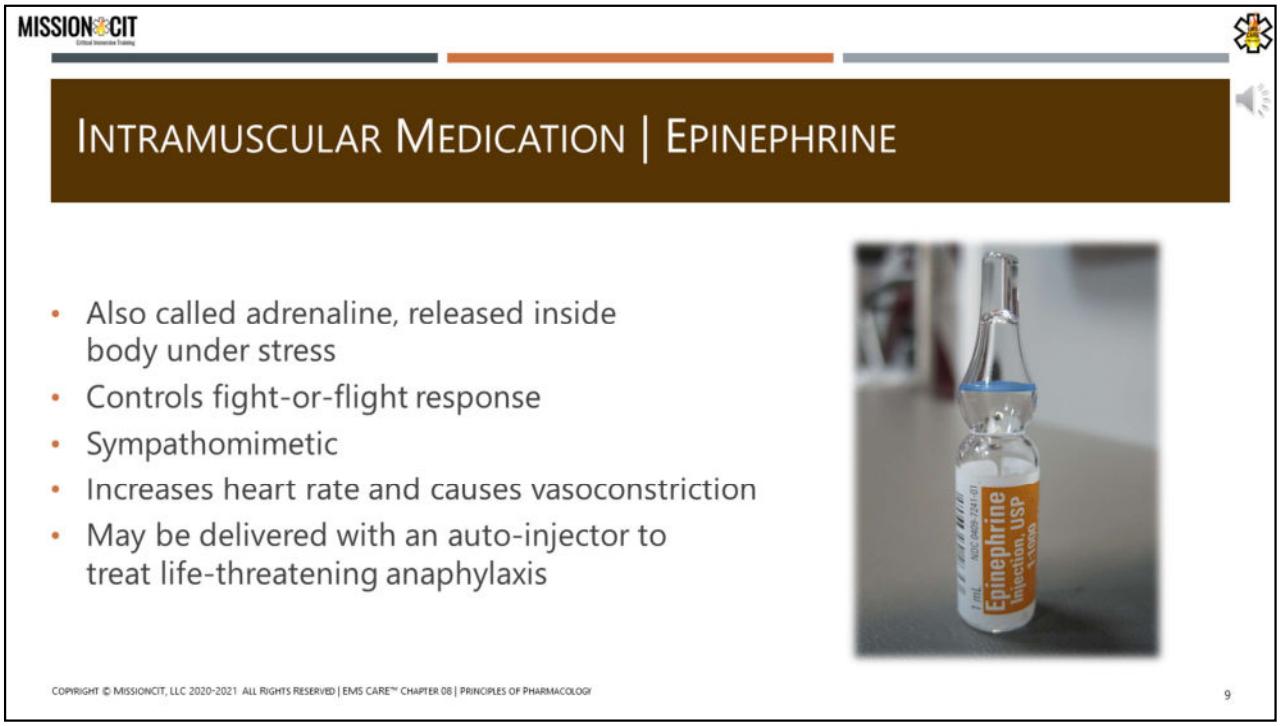
This medication is not for those who have had erectile dysfunction medications such as Sildenafil or Viagra, Tadalafil or Cialis, and Vardenafil or Levitra in the past 24 hours. Never administer it to patients who have known allergies to nitroglycerine patches, capsules, ointments, or tablets.



There are two ways to administer sublingual medications like nitroglycerine. The first way is sublingually through a tablet. Never crush the tablet before administering it, and, tell your patient not to chew or swallow it. Follow the exact dosage as extra doses can have a counter effect on the body. Tell the patient that it is perfectly normal to feel a tingling or burning sensation in the mouth. Make sure he or she is seated or lying down while administering this tablet.

After giving the tablet, store the remaining in its original glass container with the cap screwed on tightly.

The second way to administer nitroglycerine is through a metered-dose spray. If you choose this option, remember one spray equals one tablet. Make sure you spray on or under the tongue to facilitate sublingual absorption. Before administering, check your local protocols and make sure you follow it perfectly.



The next type of medication administration we will be covering is intramuscular medication. This is a technique where the medication is delivered deep into the muscles, so it can be absorbed into the bloodstream quickly.

The advantage with this administration route is that it is simple and easy, doesn't require a lot of training, and sends the medicine quickly to the circulatory system without having to place a needle in the veins. The disadvantage is that it can be a bit painful for the patient, and can be ineffective if the chosen site for

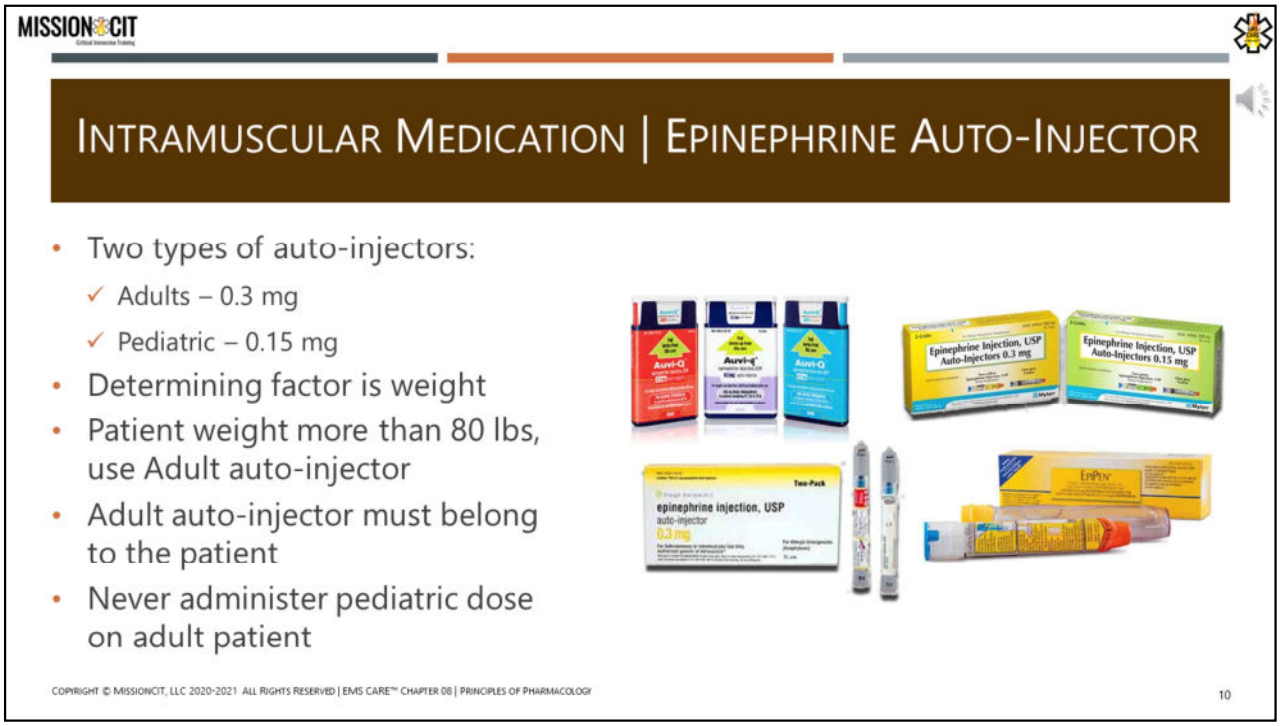
administration is not conducive enough to facilitate absorption.

A common medication administered through this route is Epinephrine. This medication is also called adrenaline, and it is both a hormone and a medication. This hormone is released by the body when it is under stress and evokes a fight or flight response.

When administered as a medicine, it mimics the same behavior. Typically, epinephrine increases heart rate, constricts blood vessels to increase pressure, and dilates passages in the lungs. It is given to patients who are experiencing life-threatening conditions such as anaphylaxis, cardiac arrest, allergic conditions, and asthma.

Most times, this medication is delivered through an auto-injector, as it automatically delivers a pre-set amount, typically 0.3 mg.

Since this is a critical drug, many local protocols don't allow EMTs to deliver them without supervision. You are only allowed to assist in the administration of epinephrine. Make sure to check these protocols.

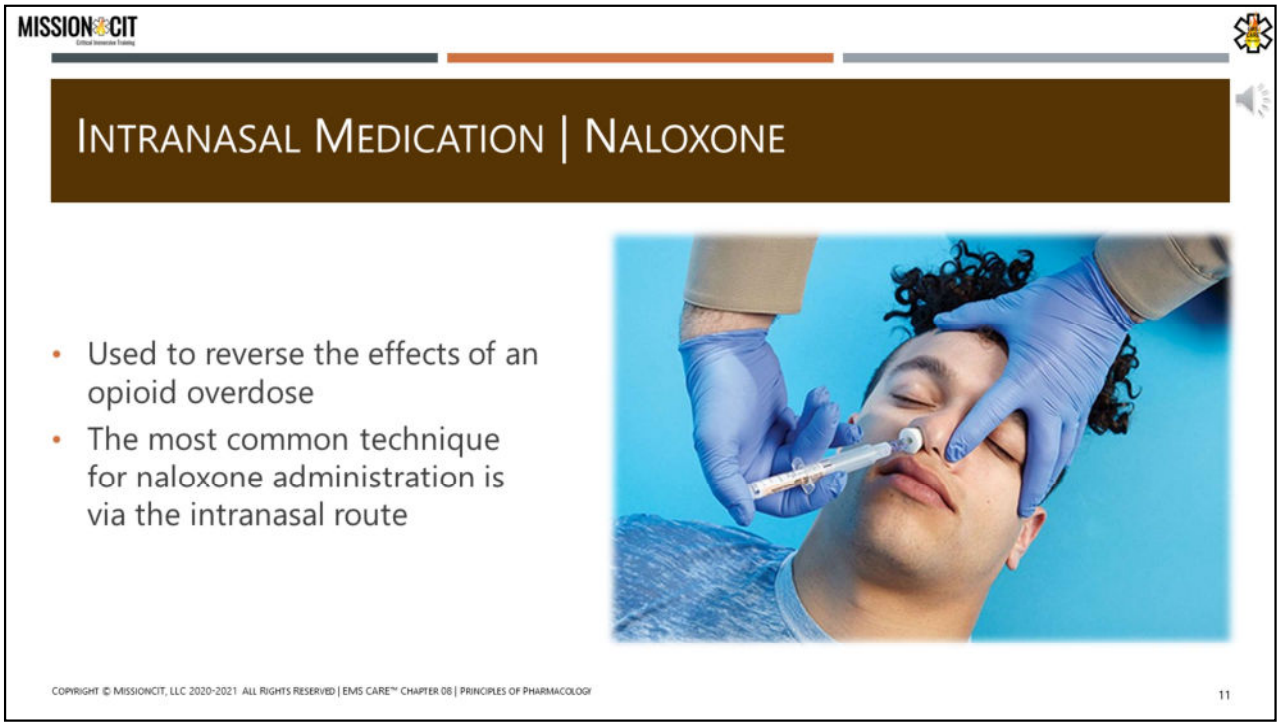


Since Epi auto-injector is something that you're likely to use a lot, here are some things to note about it. Broadly speaking, there are two types of auto-injectors, one for adults, and the other is pediatric. The adult dose is 0.3mg, while the pediatric dose is 0.15mg.

Now, you might wonder when to use an adult auto-injector and a pediatric one. Well, your determining factor is the weight. If a patient weighs more than 80lbs, you can use the adult auto-injector, otherwise, stick with the pediatric one. Another important aspect to note is that the auto-injector must belong to the adult who is

over 80lbs in weight. In other words, you can only inject the medicine, but the adult auto-injector must belong to the patient.

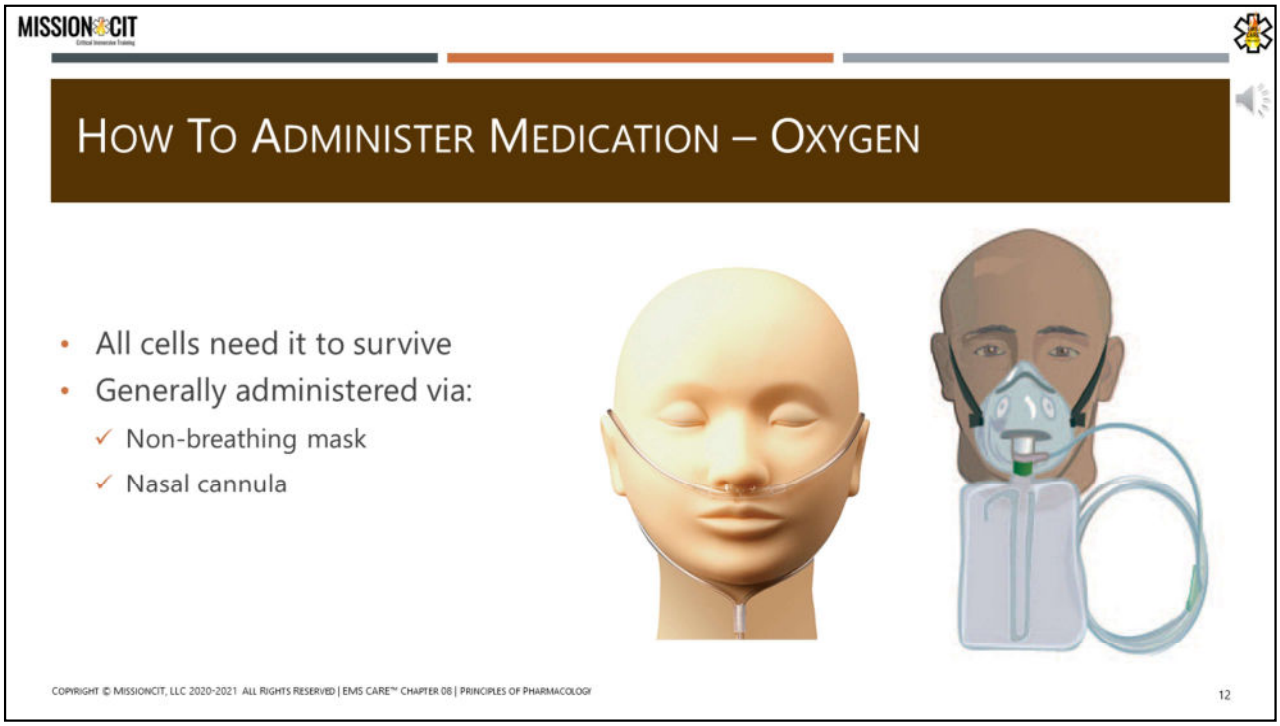
And never administer the pediatric dose on an adult patient as the medication dosage is not enough to reverse the patient’s condition.



Intranasal medications, as the name suggests, are administered through the nasal cavity. The advantages of this route are that it is a non-invasive and safe method, avoids degradation in the GI tract, reduces the chances of side effects, and increases the rate of absorption. The disadvantages include ineffectiveness due to nasal congestion, ideal for small dosages only, and frequent use can lead to mucosal damage.

A common drug that's administered as an intranasal medicine is Naloxone and it is used to treat known or suspected opioid overdose.

To inject this medicine through the intranasal route, keep the atomizer in one nostril and make sure it is pointed and slightly upward facing. Administer half a dose, which is equal to about 1ml. This is the maximum dosage you can give. Repeat the same procedure in the other nostril too. This should provide immediate relief for opioid overdose.



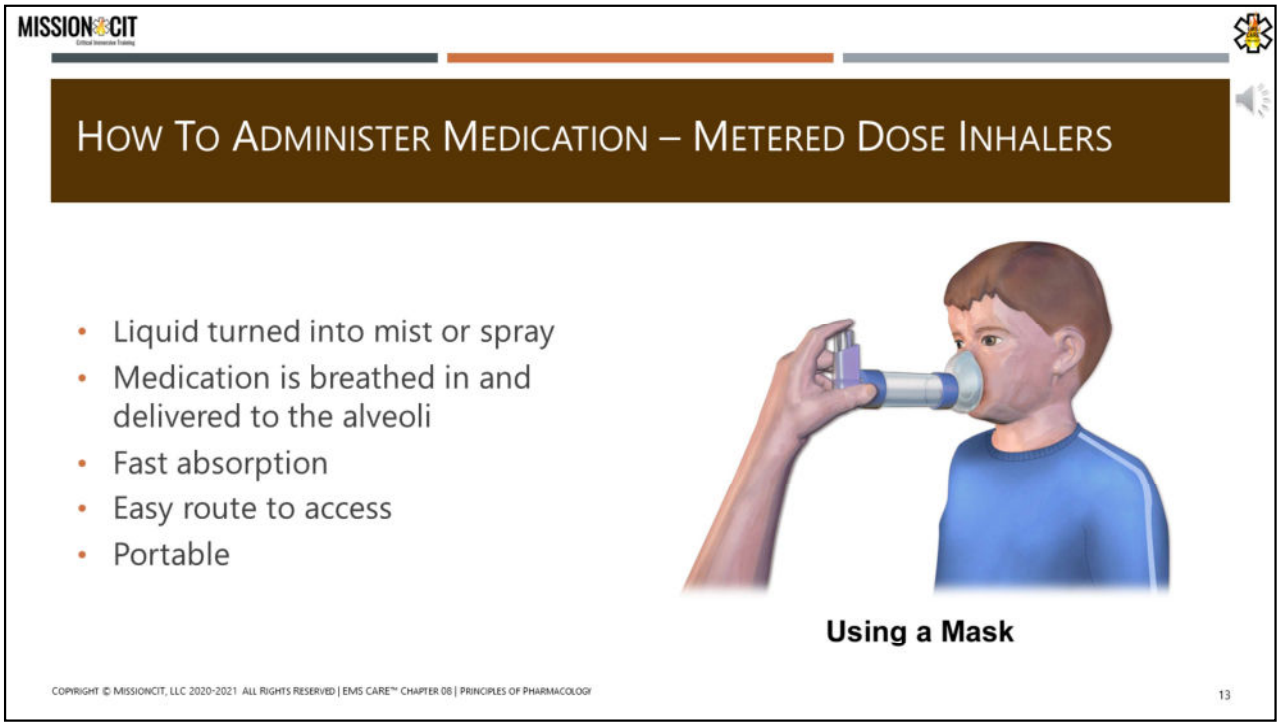
Inhalation medications send the required dosage directly to your lungs and they tend to be an important part of the treatment of any lung-related disease.

Oxygen is the most common medication administered in this way as all cells in the body require considerable amounts of oxygen to function properly.

You can administer oxygen through a non-breathing mask at the rate of 10 to 15 L per minute or through a nasal cannula at the rate of 2 to 6 L per minute The choice depends on the condition of the patient and the amount of oxygen required. Sometimes, you may also

have to provide artificial ventilation, especially if the patient is not breathing well. In such cases, use a bag valve mask that supplies oxygen at the rate of 15 L per minute.

While administering oxygen, ensure that there are no open flames, lit cigarettes, or sparks.



Besides oxygen, other medicines can also be administered through inhalation, and this requires the use of metered-dose inhalers and nebulizers. These devices convert liquid medications into a fine mist, so the required dosage is atomized, breathed into the lungs, and delivered to the alveoli.

As you have guessed, the biggest advantage is it is easy to administer and is relatively fast. But the disadvantage is that the patient must be breathing and should be cooperative. Also, using a metered dose inhaler may not be easy as it requires high levels of coordination and will

be difficult to administer when a person is having breathing troubles.

While assisting in the administration of medicines through inhalation, consider using a spacer or adapter to avoid misdirected spraying. This spacer fits over the inhaler like a sleeve and comes with an opening at both the ends, one for the inhaler and the other for the patient's mouth. With this spacer, all that you have to do is insert the medication and spray it into the patient's mouth. Check if the mist is completely inhaled. This method is best used for fast-acting rescue inhalers such as Proventil or Ventolin.

Remember, you can only assist in using metered dose inhalers, and can’t administer medications through it.

With this, we come to the end of this lesson. And Missah will take you through the next lesson.