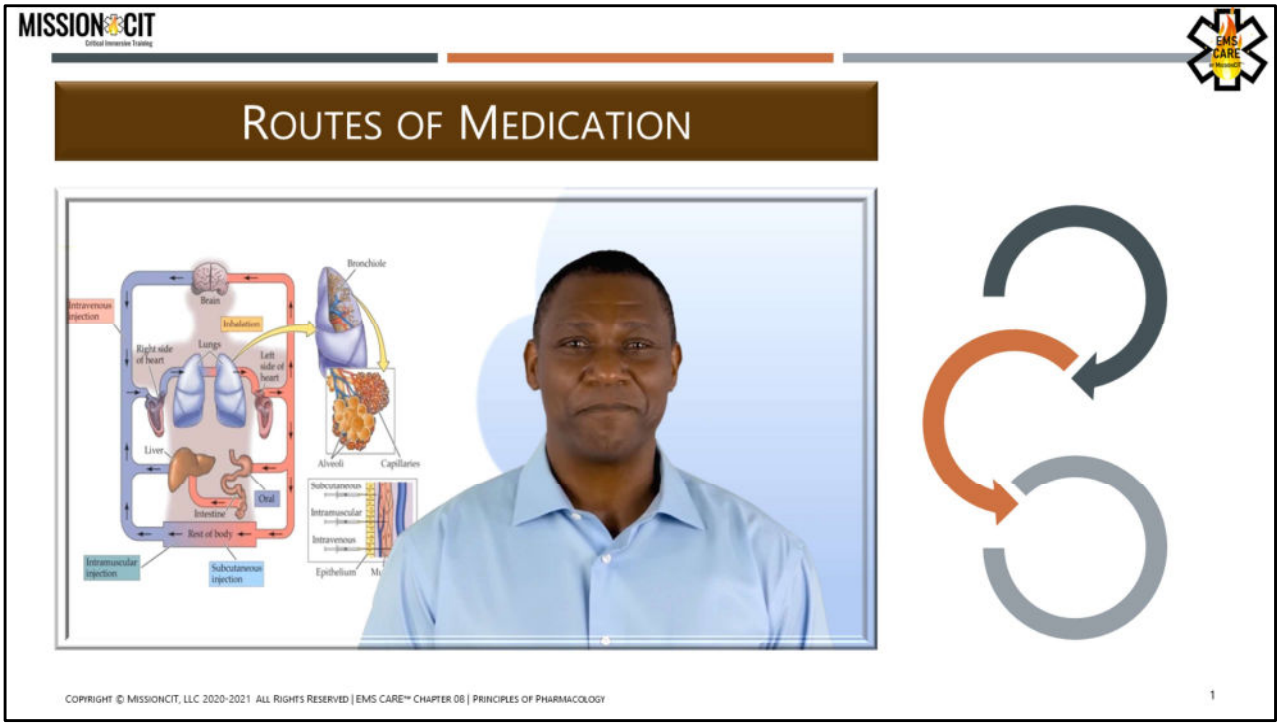
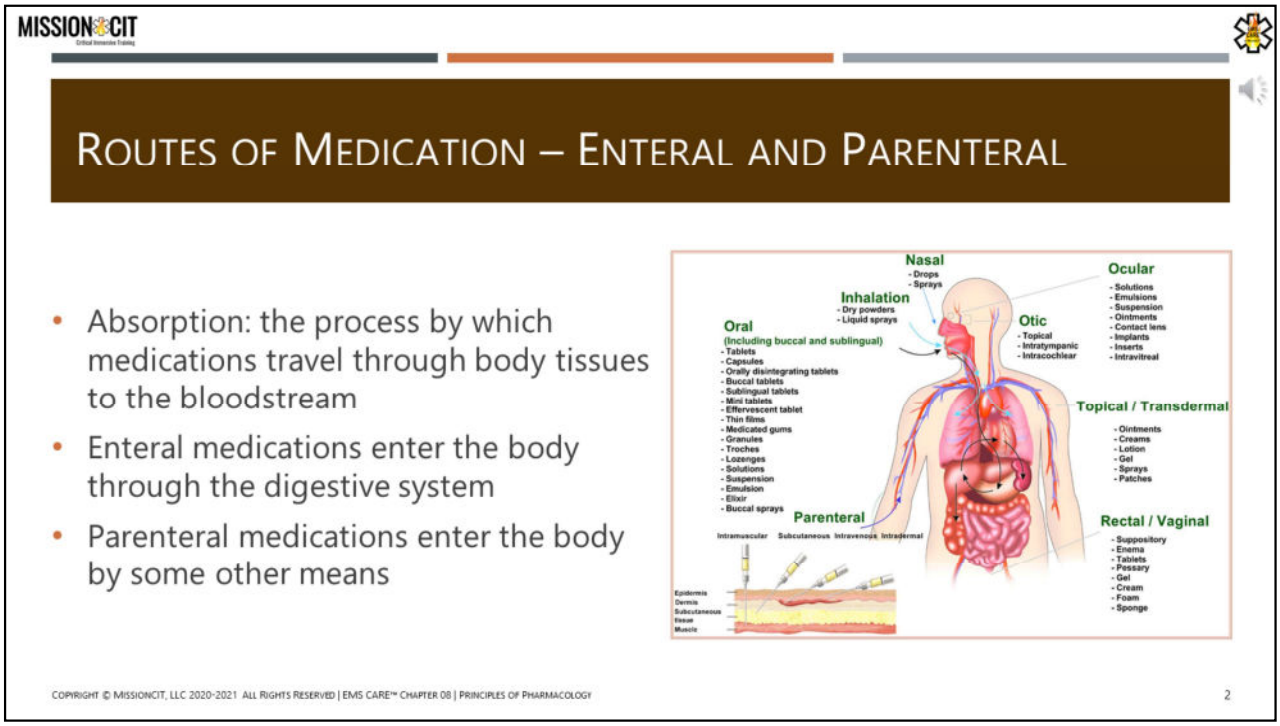


Thanks Missah.

In this lesson, we'll first touch upon the ways or routes of medication and the absorption rate associated with each of these medication routes. We then take a detailed look into the different forms of medications, and their route of administration.

Good studying.

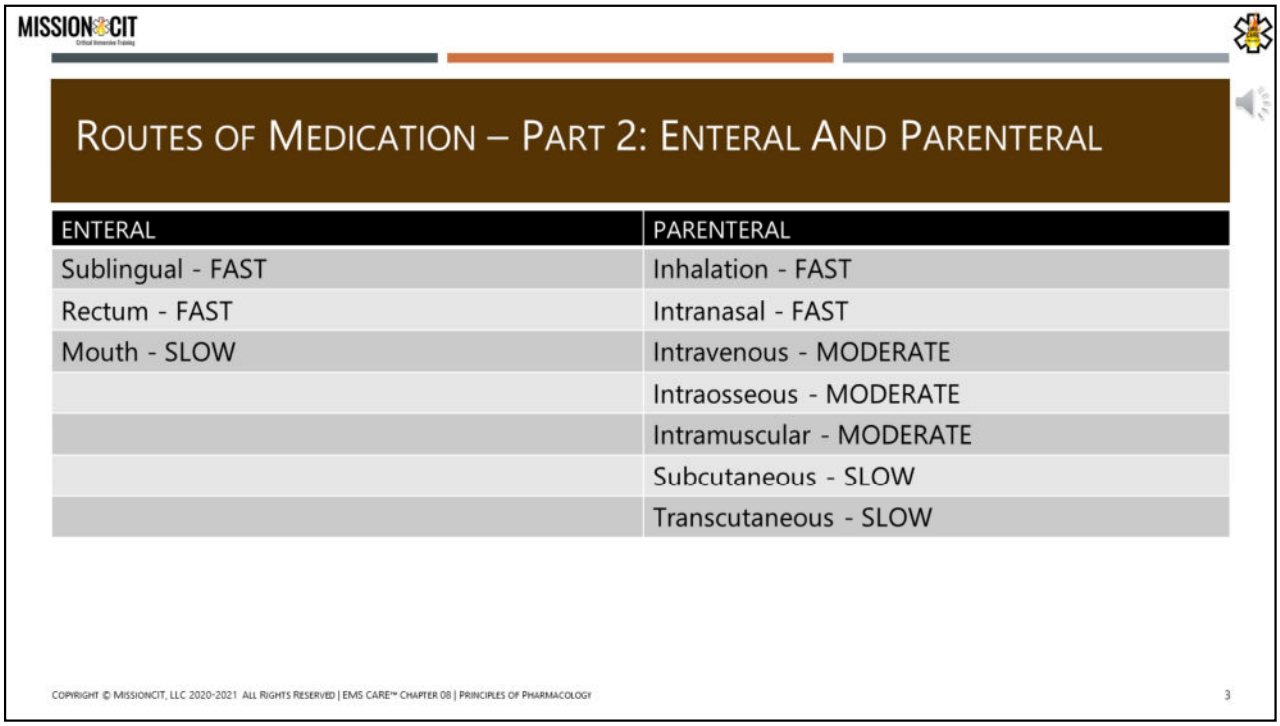


Drugs are introduced to the body in different ways. The way you administer a medicine has a bearing on its absorption rate.

What is absorption? It is the process by which medications travel through the body's tissues to reach the bloodstream. Each route has a different absorption rate.

The routes of administration can be broadly divided into two categories - Enteral medications and parenteral medications. Enteral medications are those that enter the body through the digestive system, while Parenteral

medications are those medications that enter the body through other means.
Let's now look at the different enteral and parenteral routes and the absorption rate of each.

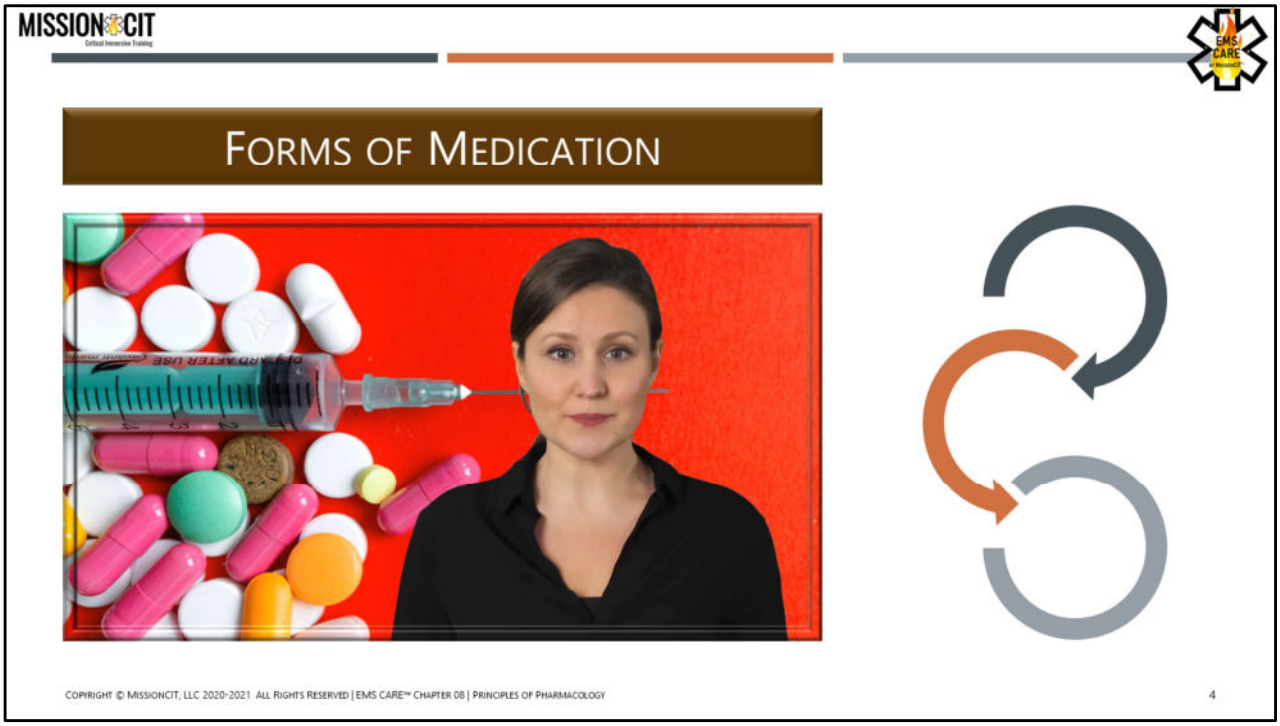


There are many routes to administer medicines, out of which, three come under the enteral category and seven under the parenteral category.

The three routes that come under the enteral category are sublingual, per rectum, and by mouth. The rate of absorption is rapid for the first two routes and slow for the third one.

As for the parenteral category, inhalation and intranasal methods of administration are the fastest while subcutaneous and transcutaneous are the slowest. Intravenous, intraosseous, and intramuscular have

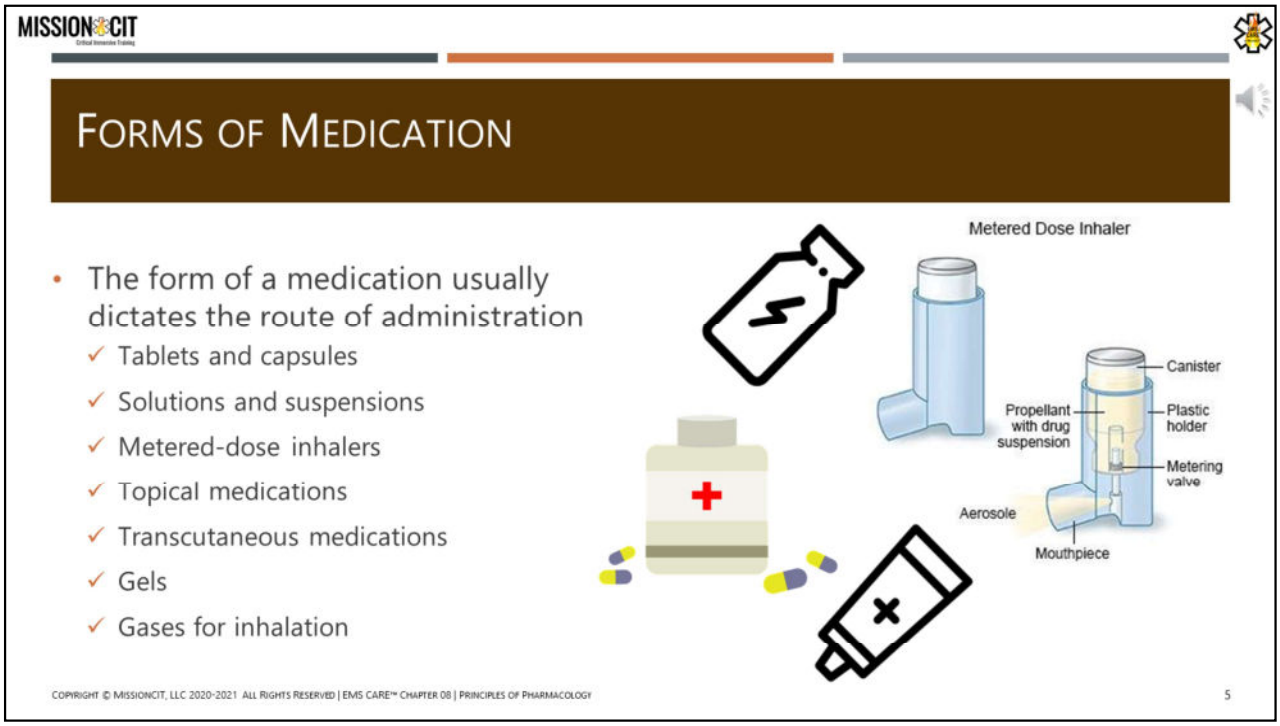
moderate speeds of absorption.
The administration route depends on how quickly you want the medicine to be absorbed and whether it should be through the enteral or parenteral route.
Now that you have an idea of the different routes of medication, let's see the different forms of medications you'll administer as a part of your job. Missah will take you through that.



Thank you Justin.

In this lesson, we will be talking about the different forms of medications. I'm sure many of these forms will sound familiar to you.

So, let's jump into these different forms of medications right away.

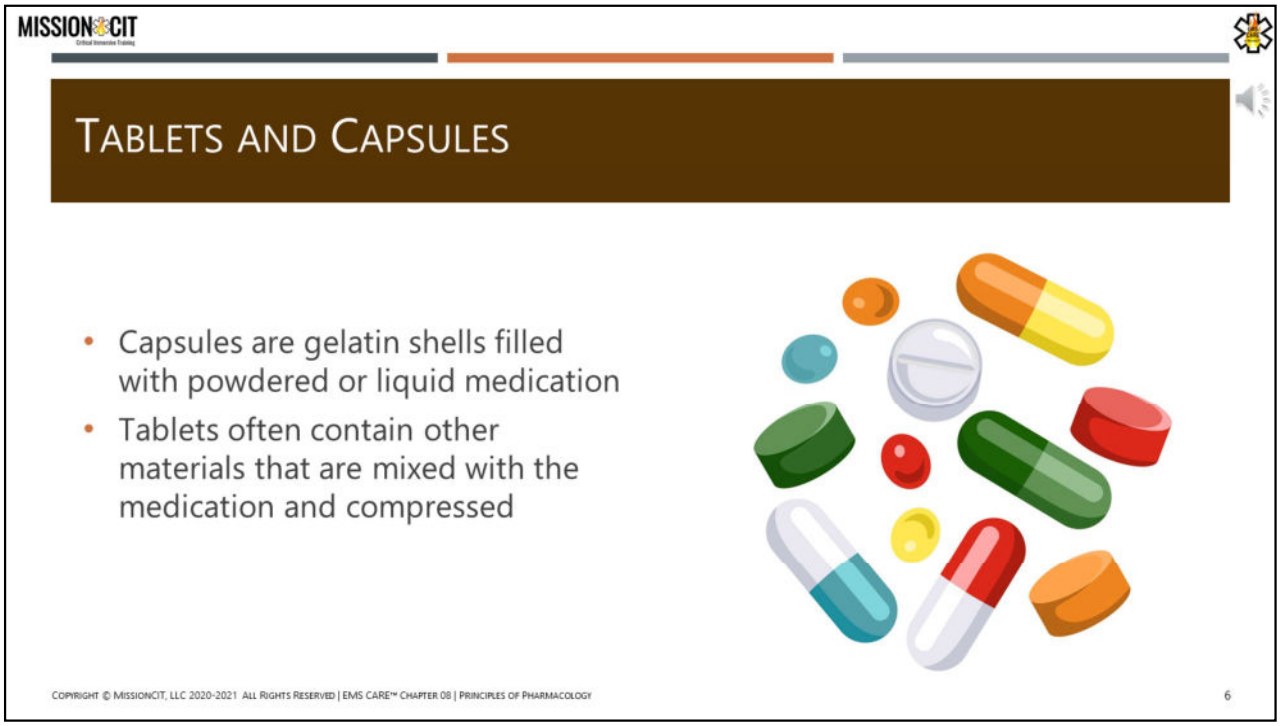


Earlier, we saw the different administration routes. Besides the rate of absorption, you also have to consider the form of medication because different forms have different absorption rates.

Generally speaking, a drug also contains other ingredients in its composition and this impacts the absorption rate. The timing of release and its pharmacological effects on the targeted organs are other factors to consider.

The different forms of medication available today are tablets and capsules, solutions and suspensions,

metered dose inhalers, topical medications, transcutaneous medications, gels, and gases for inhalation.
Let's look at each of these types.

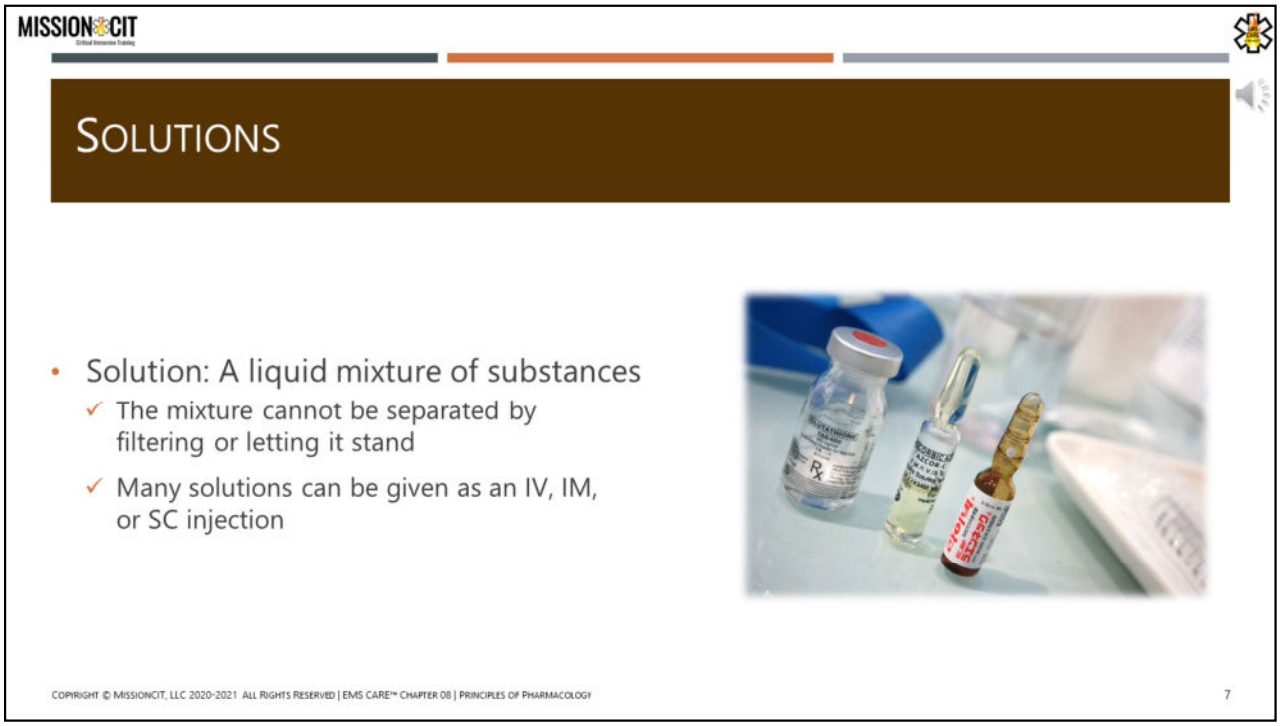


Most medicines given orally are in the form of tablets and capsules.

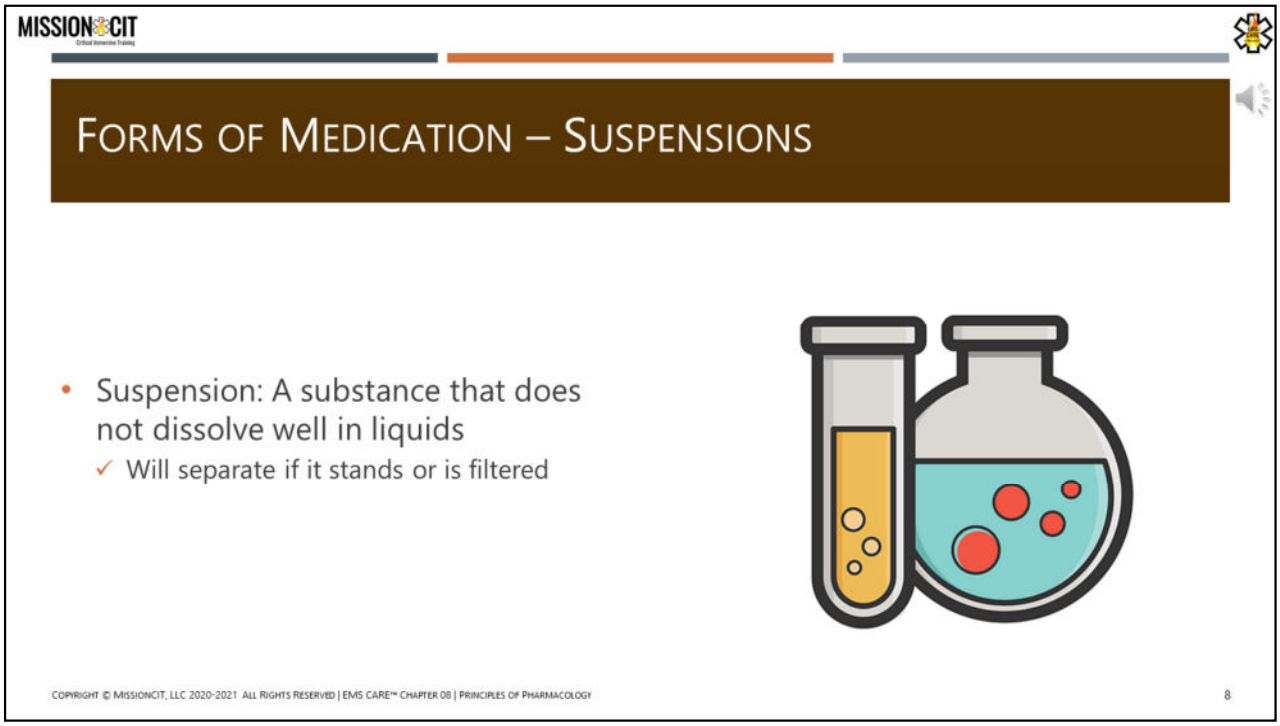
Though most people tend to think that tablets and capsules are the same, in reality, they are very different from each other.

Tablets often contain other materials that are mixed with the medication and are compressed. This is also why they have a longer shelf life and come in many sizes and shapes. Tablets can have a higher dose of an active ingredient than a capsule and they typically have a slower rate of absorption than capsules.

Capsules, on the other hand, are gelatin shells filled with powdered or liquid medication. This explains why capsules have a higher absorption rate than tablets. However, these capsules tend to expire quickly, so you'll have to watch out for the expiry date.



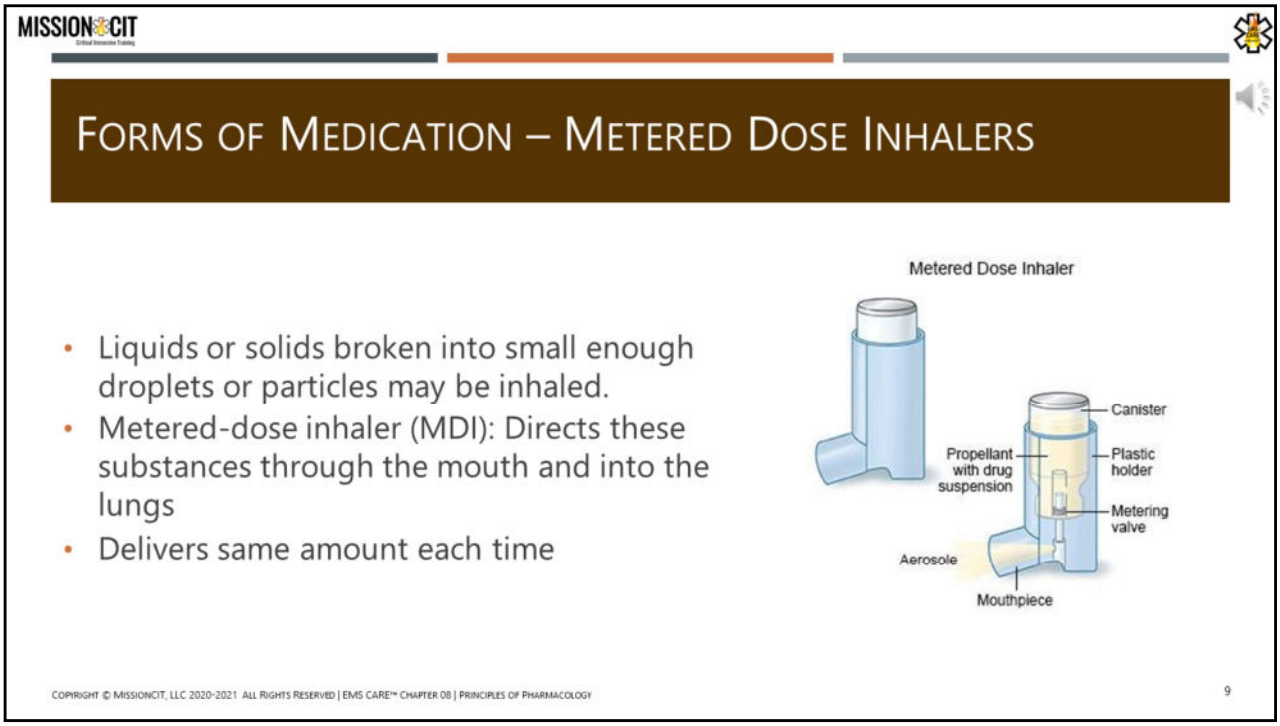
Besides tablets and capsules, solutions and suspensions are also commonly used.
So, what's the difference between a solution and a suspension?
Solutions are homogeneous, that is, the pharmaceutical solution dissolves in the solvent completely. As a result, the dry particles are distributed evenly, so you don't have to shake a medicine before administering it to the patient. This is why solutions are one of the most convenient forms of medication.



Suspensions, on the other hand, are a form of medication where the drug particles are not completely dissolved in the solvent. This means, the particles remain suspended in the liquid just like how air particles remain suspended in the air. This is why you should shake the medicine well before administering it to ensure that there is enough dosage of the medicine in the liquid.

Good examples of suspensions are paracetamol and antibiotics. When these suspensions are not used, you can see two layers as the suspended particles are

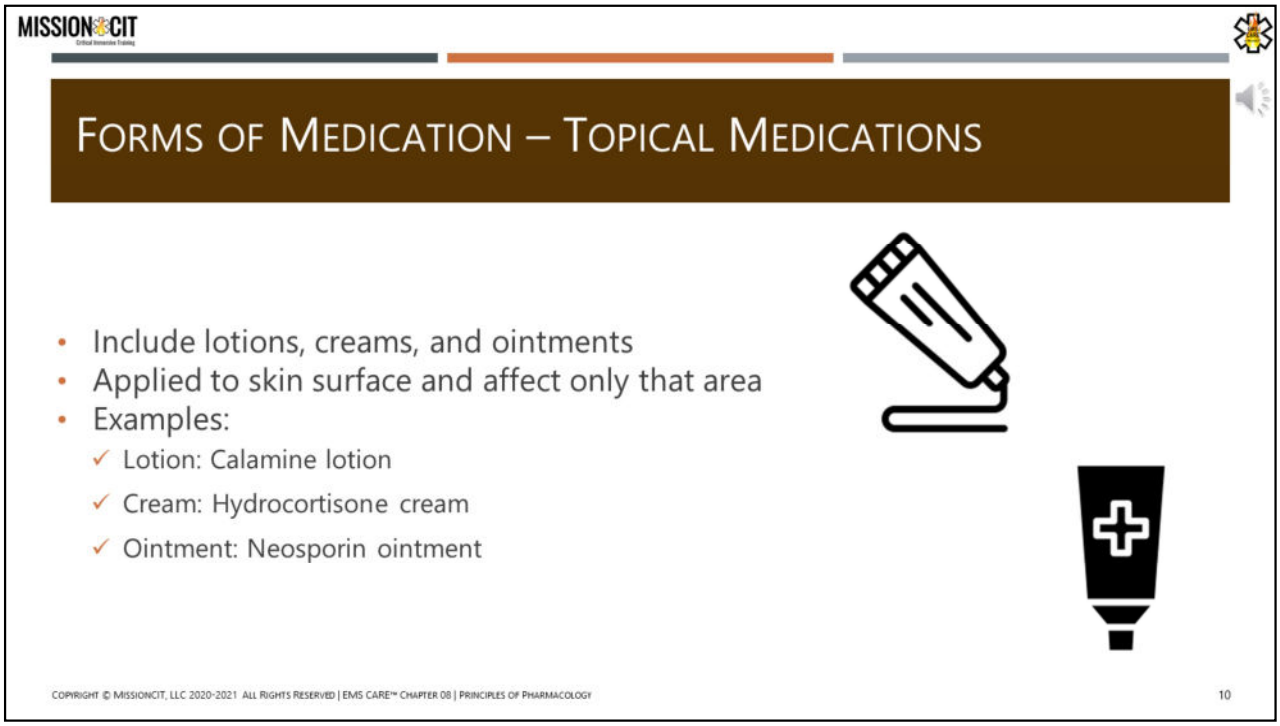
subject to gravity and hence will settle at the bottom. That's how you distinguish whether a medicine is a suspension or a solution.



Metered Dose Inhalers, or MDI in short, is a canister that is made up of a plastic holder with a mouthpiece. The liquid or solid medication should be broken down into extremely small droplets or particles that can be inhaled. When you add this medication to the inhaler, patients can inhale these substances through their mouths, that in turn, will be directed to the lungs.

MDIs have two distinct advantages. The first is that they deliver the same amount of medication each time, so you don't have to worry about dosage, and the second is that, it goes directly to the lungs, so this makes it highly

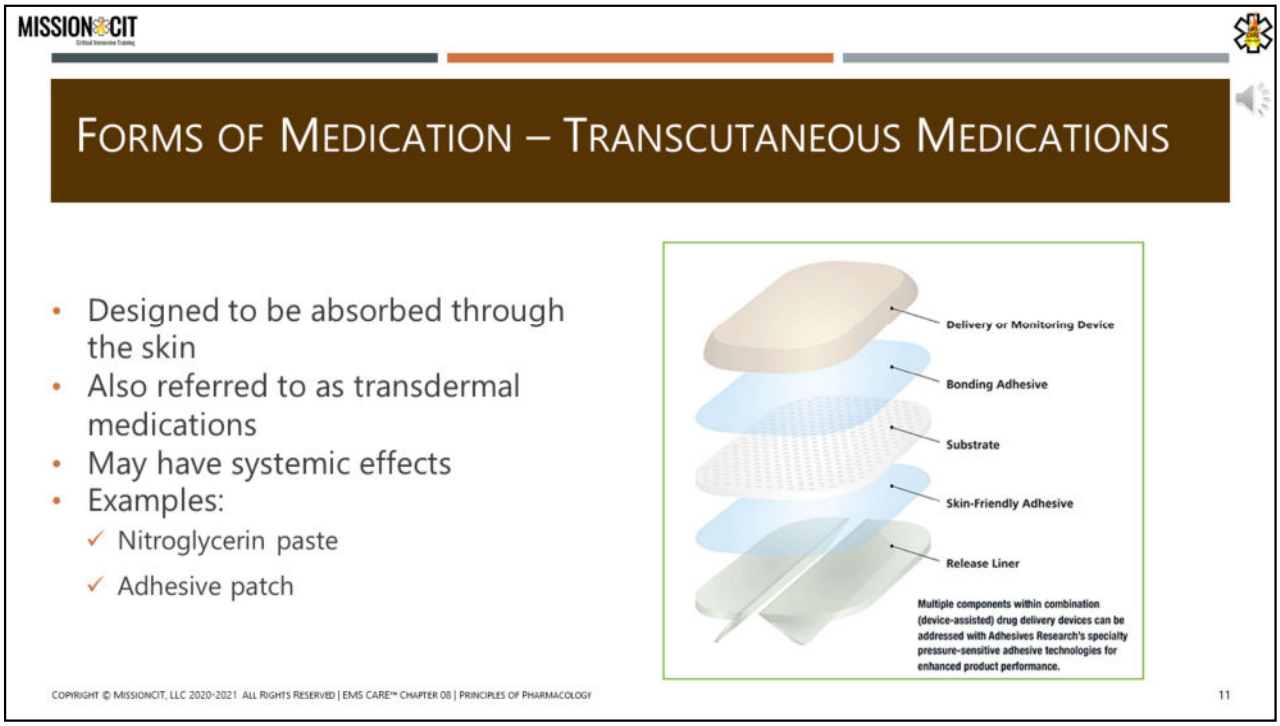
effective for those suffering from respiratory illnesses like asthma.



The next form of medication we'll talk about is topical medications. As the name suggests, this includes medications that are applied to the skin and affect only that part of the area.

Topical medications include lotions, ointments, and creams.

Here are a few examples of each. Calamine lotion is a common lotion used on the skin and most of you should be familiar with it. A commonly used ointment is Neosporin ointment, and a well-known cream is hydrocortisone cream.

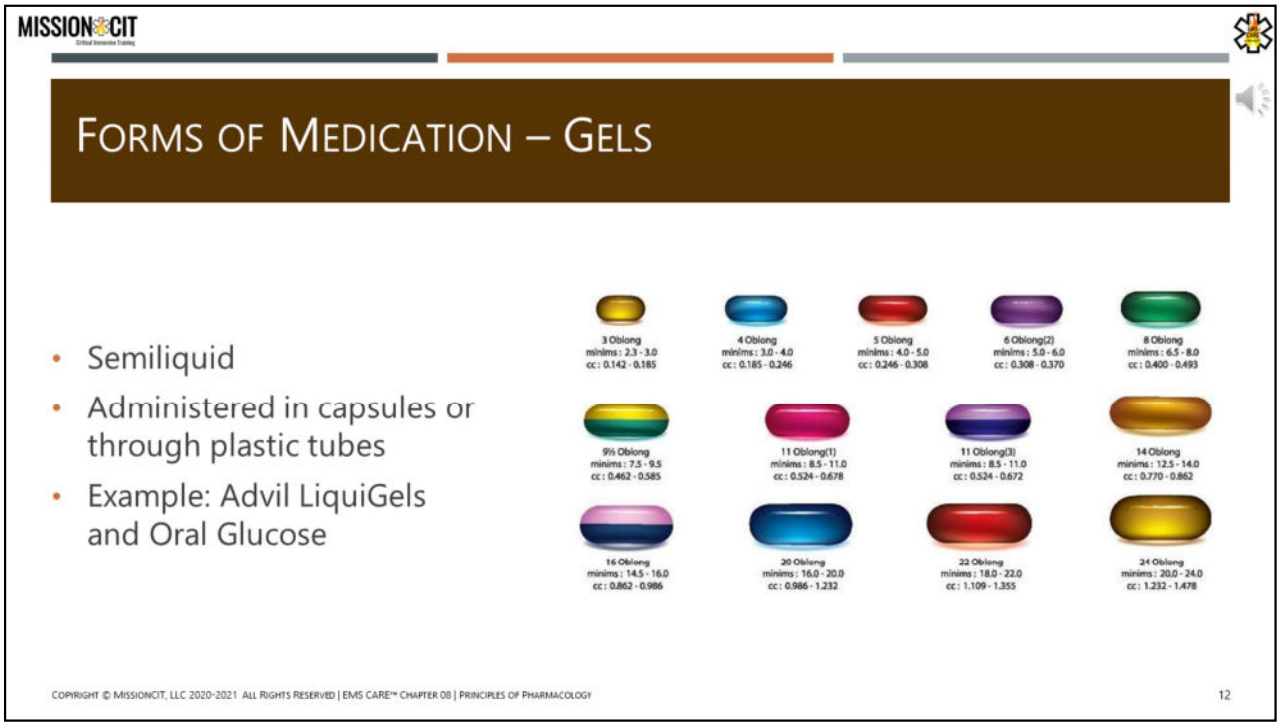


Transcutaneous medications are also known as transdermal medications, and these are designed to be absorbed through the skin. Since they don't go through the gastrointestinal tract, the absorption rate tends to be higher.

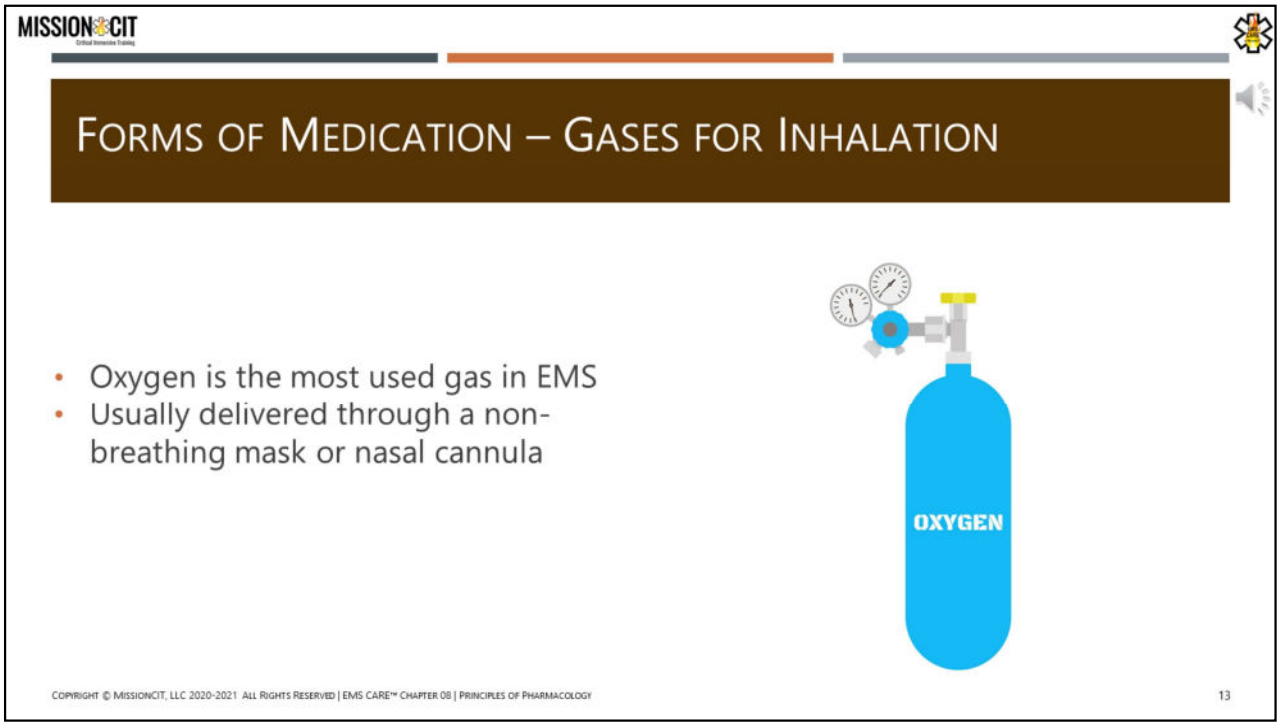
Also, these medications tend to have a systemic effect that impacts the whole body, unlike the topical medications that affect only a particular site. If you touch these medications, needless to say, your skin will absorb it too! So, you should watch out while

administering this drug.

Some examples of transcutaneous medications are nitroglycerin paste and adhesive patches.



Gels are semi-liquid medications that are administered through plastic tubes or in the form of capsules.
Since they are easy to use, gels have greater acceptance among patients.
Good examples of a gel medication are Advil LiquiGels in capsule form, and Oral Glucose in a plastic tube.



The last form of medication we'll talk about is gases that are administered to patients through a non-breathing mask or a nasal cannula. It is mostly used to treat respiratory diseases, though it can also be used to improve the hemodynamics of a patient.
It also provides for optimal delivery of drugs and reduced systemic side effects.
It merits to know that oxygen is the most commonly-used gas outside the operating room and as an EMS, this is what you'll have to administer when needed.
With this, we have come to the end of the forms of

medication, and Justin will guide you through the next lesson that talks about how you should administer medications.