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Welcome to this lesson on the brainstem. In this lesson, we will discuss the structure and function of the brainstem. So the brainstem is formed by three other areas of the brain called the pons, medulla, and the midbrain. And the brainstem connects to the spinal cord. So nerve connections of the motor and sensory systems will pass through the brainstem because the brainstem is connected to the spinal cord, and those nerve connections also run through the spinal cord.

The brainstem plays a large role in regulating breathing, heartbeat, reflexes, consciousness, and sleep. So the three parts of the brainstem are what act in order to regulate those functions. So damage to the brainstem can be extremely dangerous or fatal if it does happen, just because the brainstem does play such a huge role in these functions and because it has these nerve connections that pass through them. So it doesn't appear to be a huge part of the brain sizewise, but it does have a lot of very important roles.

So we're going to take a look at this diagram down here and label the different parts of the brainstem. So our midbrain, located up here, our midbrain, the function of that is to relay any sensory information to the forebrain. So it's kind of acting as a liaison between other parts of the brain and the forebrain. Our pons, located here, is a part of the brain that helps regulate our breathing, and it's also connected to the midbrain by nerve tracts. So it has these nerve tracts that connect the pons here to the midbrain.

And then our medulla, down here, our medulla helps to regulate our breathing, our heartbeat, reflexes such as swallowing, sneezing, coughing, and vomiting. So you can see how these three parts of the brain together, even though it makes up a small part of the brain, play a large role in the brain. OK?

So things like the breathing, the heartbeat, are very, very important things that need to be regulated. They're things that we don't have control over, we don't think about consciously. But it's very important that our brain regulates them and keeps them functioning. So this lesson has been an overview on the structure and function of the brainstem.