

BrainPOP Related Reading - Touch

To illustrate how different parts of the body have higher concentrations of touch receptors, scientists sometimes use a model called the **sensory homunculus**.

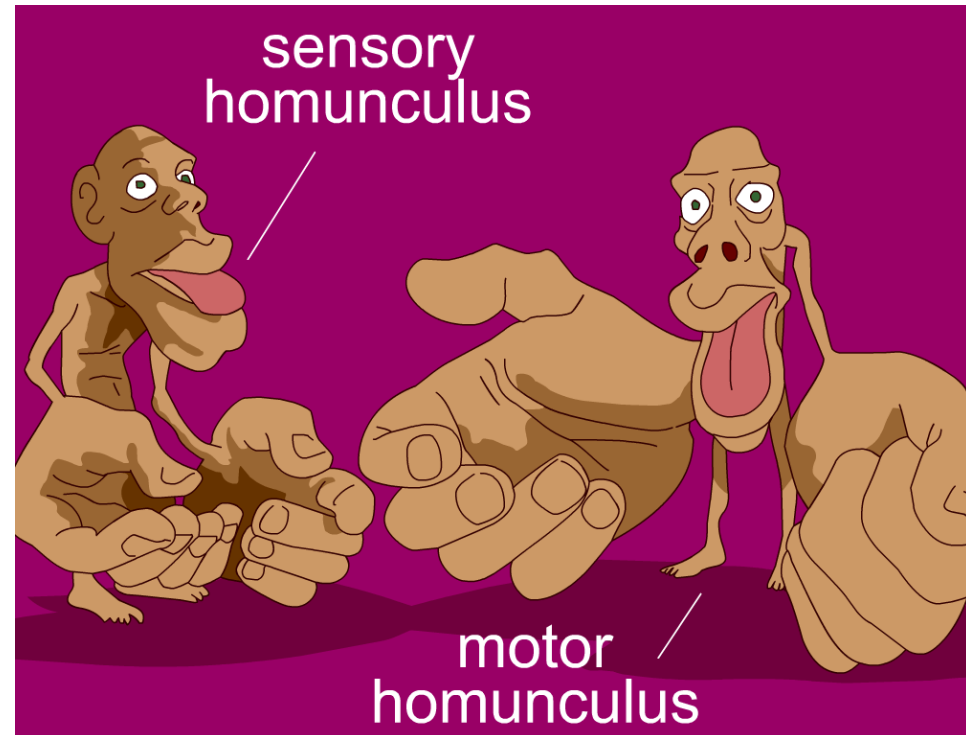
The homunculus is a drawing or sculpture of a human whose body parts are sized in relation to how much of the brain is devoted to sensing touch there. For instance, the hands of a homunculus are incredibly oversized, as are its lips and tongue. These areas of the body not only have relatively high numbers of neurons controlling them in the brain, they also contain lots of touch receptors on the skin.

There exists another model, called the **motor homunculus**, as well. This model reflects the fact that large areas of the brain are devoted to controlling motor activity—a.k.a. voluntary movement—in relatively small parts of the body.

The sizes of the body parts in a motor homunculus are related to the brain space required to control them. For example, the human thumb is capable of many different movements and functions, and we use our thumbs everyday for a wide variety of tasks. So the thumb shows up as very large.

On the other hand, while the human thigh is fairly big compared to our other body parts, its movements aren't that complicated. So in a motor homunculus, the thigh is relatively small!

By the way, the word “homunculus” is Latin for “little man,” and it has a variety of meanings outside neurology. Sensory and motor homunculi



might be creepy-looking, but they help get across how uneven the dispersal of sensory nerves is. And they make a great idea for a Halloween costume!