

## 4. The digestive system

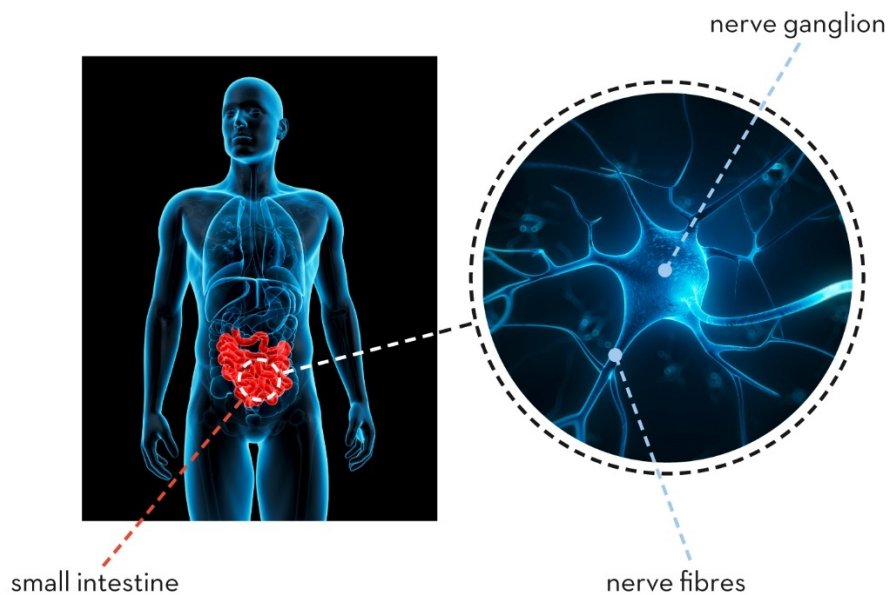
### 4.1 The organs in the digestive tract

4.1.4

## The abdominal brain

### THE NERVOUS SYSTEM

Humans have an **autonomous nervous system** that makes it possible for the heart to beat, blood to flow and for us to breathe without thinking about it. One part of this autonomous nervous system controls the intestine, so it is called the **enteric nervous system**. This system allows us to transform the food we have eaten, without necessarily being aware of what happens between these two steps. Its nerve cells are located in the intestinal wall.



The entire length of the intestine is surrounded by nerve cells densely connected to each other. Remember that the intestine is more than 5 metres long, which means there is a 'brain' of 100 million neurons wrapped around it!

Near the end of the 19<sup>th</sup> century, two British scientists, called Bayliss and Starling, carried out an experiment. They isolated a segment of the intestine from the rest of the body and observed that this segment could continue functioning in a solution of nutrients. Its activity only stopped when they blocked all of this segment's nerve cells. So, the intestine can work independently and can continue to do its job even when its nerve links are cut off from the rest of the nervous system.