

## 4. The digestive system

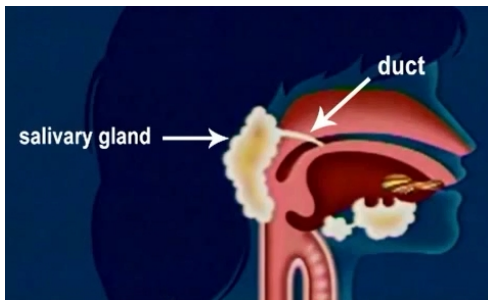
### 4.1 The organs in the digestive tract

4.1.3

## The digestive glands

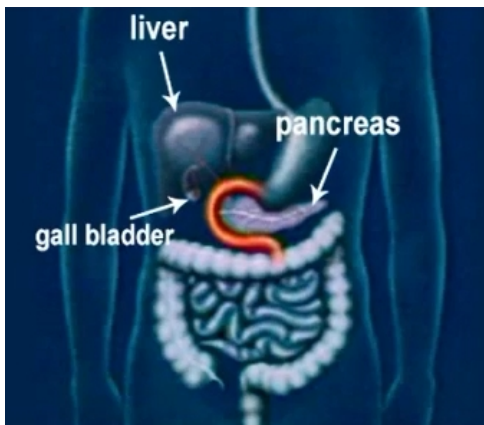
### APPENDED DIGESTIVE GLANDS

Digestive glands produce the chemical substances found in the various organs of the digestive tract. The term **chemical substance** may seem vague, but there is one we all know well – **saliva**.



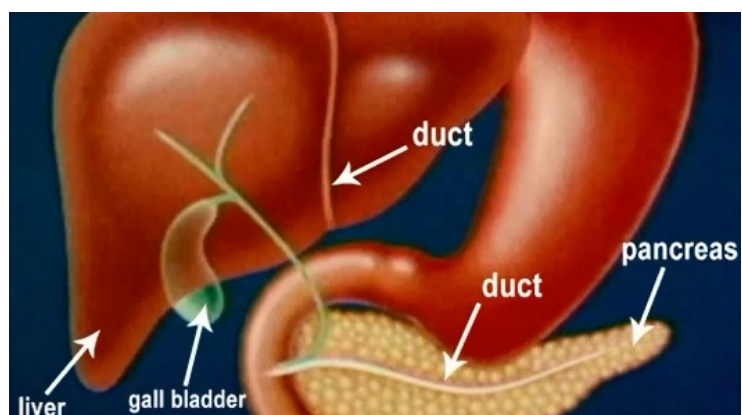
Saliva is secreted by digestive glands called **salivary glands**. The mouth is not the only organ in the digestive tract to have glands. Although some organs, such as the oesophagus and large intestine, do not have any glands at all.

Salivary glands are appended to the digestive tract by ducts.

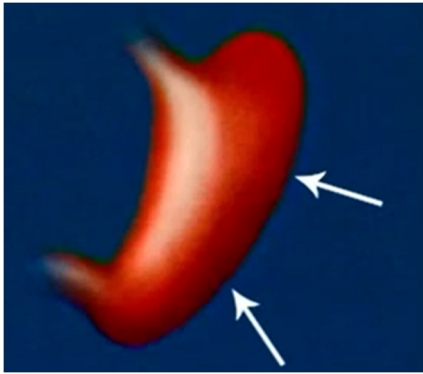


The **pancreas**, **liver** and **gall bladder** are examples of other 'appended' glands.

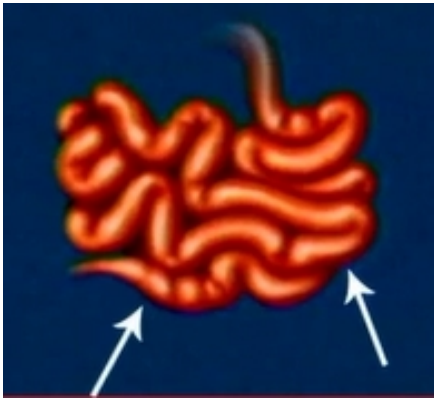
If we zoom in a bit, we can see that these glands are also appended to the digestive tract via ducts.



## INTEGRATED DIGESTIVE GLANDS



There are other digestive glands that are not depicted because they are directly integrated into the wall of the digestive tract. These do not have ducts. **Gastric glands**, for example, are integrated into the stomach wall.



Likewise, **intestinal glands** are integrated into the wall of the small intestine.

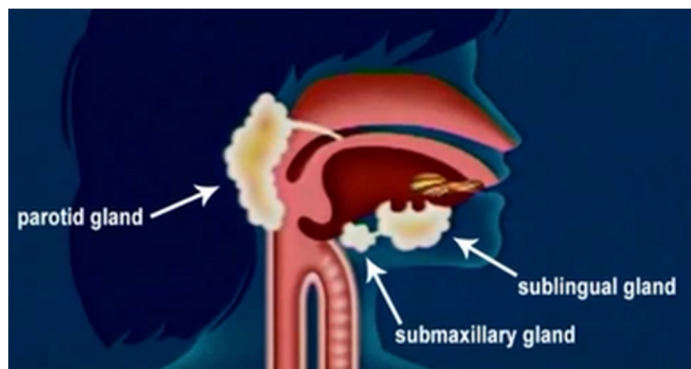
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## GLANDS IN DIGESTIX

DIGESTIX has several kinds of game pieces, including digestive glands. The game differentiates between appended glands and integrated glands by asking you to place the pieces either at a distant slot connected by a duct or directly on the wall.

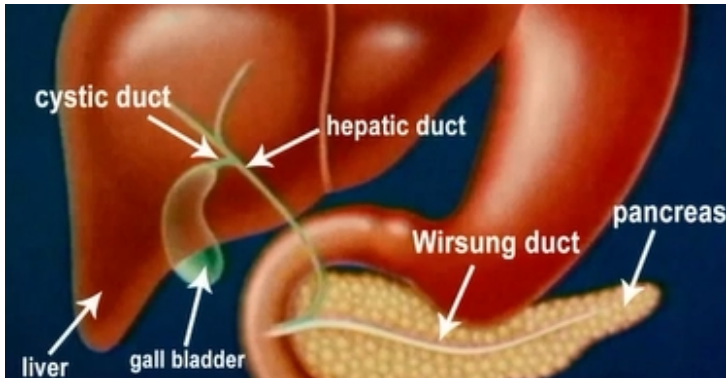
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We could go into much more detail. For example, a dentist will have extensive knowledge of the anatomy of the mouth and its salivary glands, along with the classification and composition of teeth. There are three salivary glands called the **parotid gland**, the **sublingual gland** and the **submaxillary gland**.



# alimentaryum academy

The ducts also have specific names. The pancreatic duct is called the **Wirsung duct**, after the German anatomist who discovered it. The duct that leaves the liver is the **hepatic duct**.



The body's anatomy is quite complex. Although the human body is well organised, researchers continue to study it because we do not yet know all its secrets!

## The digestive glands

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The oral cavity plays a part in the digestive process.

- True
- False

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Which of the following does not play a role in digestion?

- Saliva
- Lips
- Teeth

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What is the name of the organ that produces saliva?

- A salivary pocket
- A salivary gland
- A salivary vein

---

The body has only one gland.

- True
- False

---

Which organ does not have any accessory glands?

- The stomach
- The mouth
- The large intestine

---

Which of the following is not an accessory gland?

- The pancreas
- The liver
- The oesophagus

---

Accessory glands play no part in digestion.

- True
- False

---

What is the gland integrated within the stomach called?

- The pancreas
- The gastric gland
- The liver

---

With which organ is the gallbladder associated?

- The liver
- The mouth
- The large intestine

---

We now know everything there is to know about the human body.

- True
- False

## Answers

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The oral cavity plays a part in the digestive process.

- True**  
*Well done! That's right. Most of the action in your mouth is mechanical (using your teeth), but it is also chemical, when your saliva comes into play.*
- False**  
*Wrong! That's not the right answer.*

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Which of the following does not play a role in digestion?

- Saliva**  
*Wrong! Your saliva moistens food and helps digest the starch.*
- Lips**  
*Well done! That's right.*
- Teeth**  
*Wrong! The mechanical action of your teeth ensures the first step in transforming food.*

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What is the name of the organ that produces saliva?

- A salivary pocket**  
*Wrong! That's not quite right.*
- A salivary gland**  
*Well done! That's right.*
- A salivary vein**  
*Wrong! Try again!*

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The body has only one gland.

- True**  
*Wrong! Try again!*
- False**  
*Well done! Your body has many glands, such as your salivary glands, your pancreas, your liver...*

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Which organ does not have any accessory glands?

- The stomach**  
*Wrong! Your gastric glands are integrated into the wall of your stomach.*
- The mouth**  
*Wrong! Don't forget your salivary glands!*
- The large intestine**  
*Well done! That's right.*

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Which of the following is not an accessory gland?

- The pancreas**  
*Wrong! The pancreas is an accessory gland.*
- The liver**  
*Wrong! The liver is an accessory gland.*
- The oesophagus**  
*Well done! Your oesophagus is an organ of your digestive tract.*

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Accessory glands play no part in digestion.

- True**  
*Wrong! That's not right.*
- False**  
*Well done! Your accessory glands produce chemical substances which help digestion.*

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What is the gland integrated within the stomach called?

- The pancreas**  
*Wrong! Try again!*
- The gastric gland**  
*Well done! That's right.*
- The liver**  
*Wrong! Try again!*

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With which organ is the gallbladder associated?

- The liver**  
*Well done! That's right.*
- The mouth**  
*Wrong! Your salivary glands are associated with your mouth.*
- The large intestine**  
*Wrong! Your large intestine does not have any accessory glands.*

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We now know everything there is to know about the human body.

- True**  
*Wrong! That is not correct.*
- False**  
*Well done! There is still a lot to be discovered.*

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## Organ or gland?

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*[11-13 years old and 14-16 years old]*

Instructions: Indicate if each organ is:

- an organ in the digestive tract
- a digestive gland
- neither

Suggestion: Each student replies one after another.

	<b>An organ in your digestive tract</b>	<b>A digestive gland</b>	<b>Neither</b>
<b>The stomach</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>A lung</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The oesophagus</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The pancreas</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>A salivary gland</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The heart</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The duodenum</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>A kidney</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The small intestine</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The liver</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The large intestine</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The mouth</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Answers

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### Organ or gland?

---

*[11-13 years old and 14-16 years old]*

Instructions: Indicate if each organ is:

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Suggestion: Each student replies one after another.

	An organ in your digestive tract	A digestive gland	Neither
The stomach	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
A lung	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The oesophagus	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The pancreas	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
A salivary gland	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
The heart	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The duodenum	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
A kidney	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The small intestine	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The liver	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
The large intestine	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The mouth	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>