

# Exploring Anatomy: the Human Abdomen

## An advanced look at the branches of the coeliac trunk

Welcome to this video for exploring anatomy, the human abdomen. This video is going to outline the branches of the coeliac trunk.

Now, the branches coming off the coeliac trunk are going to supply the organs of the foregut. So let's start off by drawing these out.

We have the abdominal oesophagus, which is continuous then with the stomach and then the stomach, which is continuous with the duodenum. So here we see the abdominal oesophagus. We can see the fundus of the stomach.

We can see the body as it tapers down at the pyloric antrum. Here we have the pyloric canal. And then we have the C-shaped duodenum.

Also within the foregut, we're going to have the spleen drawn here. And we're also going to have the liver. So obviously these organs that I'm drawing here are not anatomically correct in relation to their size. But you can obviously get an impression of their position. Here we got the falciform ligament separating the left and right anatomical lobes of the liver. And we can add in the gall bladder here.

So all these organs are within the foregut. And we should also include the pancreas. But that can complicate the diagram. And I'll come to that in another screencast. So we could include the pancreas filling the concavity here of the duodenum. But we'll leave that till later on.

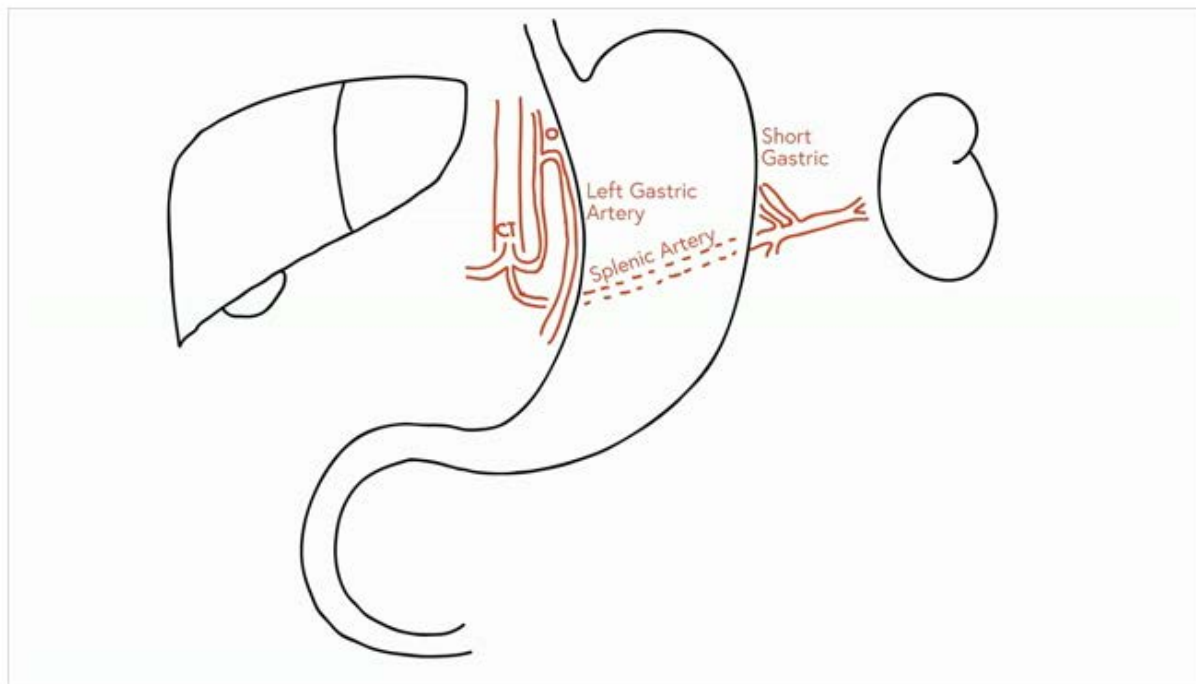
So all of these organs that we can see on the screen at the moment are going to be supplied by the coeliac trunk. And this comes off the abdominal aorta. The abdominal aorta passing into the abdomen through the aortic hiatus of the diaphragm at the level of the 12th thoracic vertebra.

At the lower border of T12, it gives rise to an unpaired visceral branch, which is the coeliac trunk. And this has three branches. It quickly divides into three branches. And here we have the coeliac trunk.

It divides into the left gastric, the splenic, and the common hepatic. So let's have look at these various branches. If we start off with the left gastric, then that ascends towards the oesophagus, where it gives off an oesophageal branch, before it then curves around the lesser curvature of the stomach. So here we can see the left gastric artery curving around the lesser curvature of the stomach.

So here we've got an oesophageal branch. And here we can see we've got a left gastric artery. The left gastric artery is going to anastomose with the right gastric artery. And we'll detail that in a moment.

And now you want to look at the splenic artery. This is the largest branch to come away from the coeliac trunk. And it runs posterior to the stomach, along the upper border of the pancreas. So as it's posterior to the stomach. I'll just draw it in these dotted lines here. You have the splenic artery.



It then passes towards the hilum of the spleen. As it passes towards the hilum of the spleen, it gives rise to numerous short gastric arteries that are going to supply the fundus of the stomach. And then eventually, it will give rise to various branches that supply the spleen.

So here we have our short gastric. Here we have the splenic artery running posterior to the stomach-- splenic artery. And we can see it giving rise to various branches that go on to supply the spleen.

Also, before it enters the hilum of the spleen, it gives rise to another branch which runs along the greater curvature of the stomach. And this branch is known as the left gastro-omental artery-- the left gastro-omental artery. You may also hear this being referred to as the left gastroepiploic artery. And they're synonymous terms.

So the splenic artery giving rise to short gastric and the left gastro-omental here. The left gastric artery giving rise to the oesophageal. And then it continues along the lesser curvature of the stomach.

So now let's turn to the common hepatic artery-- the common hepatic artery, C-H-A. I'll put here. This artery bifurcates into two. We have the gastroduodenal artery here. And I'll come back to that in a moment. And then the common hepatic artery, once it's given off the gastroduodenal, carries on as the hepatic artery proper. And this artery will eventually bifurcate into a couple of branches that supply the left and right functional lobes of the liver.

The right hepatic artery here is going to give rise to a small cystic artery that supplies the gall bladder. So here we have the cystic artery. And here we have a right and a left hepatic artery.

Also coming off the hepatic artery proper is another branch, which is going to run towards the lesser curvature of the stomach. And this is known as the right gastric artery. And the right and left gastric artery are going to anastomose together along this lesser curvature of the stomach. The right gastric artery coming off the hepatic artery proper.

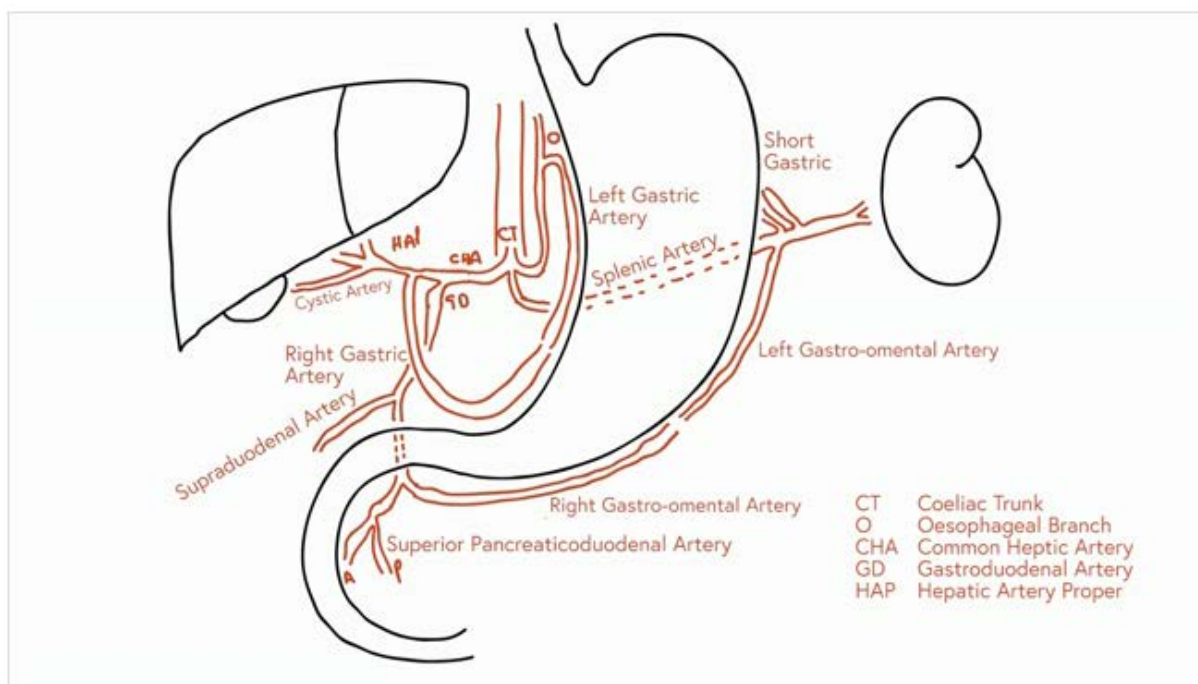
So now let's turn to the gastroduodenal artery. The gastroduodenal artery is going to pass towards the duodenum, where it gives off a branch called the supraduodenal artery. And then it descends posterior to the duodenum, where it then also bifurcates into two branches. The first of these

branches is going to run along with greater curvature of the stomach and anastomose with the left gastro-omental artery.

So now we've got the left gastro-omental artery anastomosing with the right gastro-omental artery. And again, this can be called the gastroepiploic artery. So we've now got two gastro-omental arteries supplying the greater curvature and two gastric arteries supplying the lesser curvature.

If we return to the gastroduodenal artery here, it gave rise to the supraduodenal artery. So we'll just add that in for completeness.

And then the final branch I want to detail is this bifurcation here, which is the superior pancreaticoduodenal artery-- superior pancreaticoduodenal artery. This artery is going to split into anterior and posterior branches. And we can see those anterior and posterior branches here. They're going to supply the duodenum, the head, and the uncinate process of the pancreas.



So although the pancreas is not drawn in here, we can see that these branches are going to supply it. We also, as we have a superior pancreaticoduodenal artery, are going to have an inferior pancreaticoduodenal artery. And this comes from the superior mesenteric artery. And I'll detail that in a further screencast.

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