

MEDS1001 - Anatomy Workshop Workbook

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WEEK 8 | Released Thurs 23rd April 2020 | Due Fri 15th May 2020

Workshop Objectives:

- To allow you to explore, draw, compare and reflect on different isolated organs of the human body whilst simultaneously developing your understanding of their locations, and their organisation in relation to other organs, within the human body.
- To provide you with an opportunity to focus on the intricacies of Human Anatomy with the aid of various resources, questioning and thinking tasks to encourage the development of your awareness, understanding and appreciation of the location, organisation and intricacies of your own organs within your own body.

Workshop Guidelines:

This Anatomy Workshop Workbook has been designed to facilitate your participation in the 2020 MEDS1001 Online Anatomy Workshop with the aim of providing you a valuable, enjoyable and memorable anatomy learning experience.

Completion of this Anatomy Workshop Workbook will count for 2.5% of your final MEDS1001 grade. We are looking for enthusiastic engagement and participation leading to a fully completed Workbook where all boxes have been filled.

Please print this Workbook and complete the **boxed questions and drawings at 10 Activity Stations by hand, rather than by computer, to maintain the valuable kinaesthetic learning opportunities associated with the Anatomy Workshop.**

If you are unable to print this Workbook, just complete the **boxed activities by hand on clearly labelled sheets of paper. You may append extra pages if needed.**

We have offered a number of resources through which you may learn about the individual human organs focused on in this Workshop, including a specially selected static Organ Image Catalogue, dynamic Anatomy Videos held in the University of Sydney Library and the swish Digital Anatomy Learning platform - BioDigital Human.

Enjoy using these resources to work your way through the **10 Activity Stations** of the Anatomy Workshop Workbook. If your interest is peaked, you may explore beyond the resources offered, but please know that this is not essential. You may start at any one of the Activity Stations and you may work through them in any order you choose. As you use work through the activities you will be prompted to think and undertake tasks which will serve to develop your appreciation and understanding of human anatomy.

We recommend that you take the time to embrace and make full use of the resources and suggested tasks to allow yourself to really benefit from this unique Workshop.

Two particular tasks offered in this Workshop will be especially beneficial for boosting and consolidating your appreciation and understanding of Human Anatomy:

1. 'Draw it Like da Vinci'.

At every Activity Station you will be prompted to take some time to view the provided resources and draw the features of the organs in the space provided, so grab a pencil.

Some interesting things to note as you draw include:

- What is the general shape of the organ?
- Does the front of the organ look the same as (or different to) the back?
- Does the shape of the organ relate to where it is located in the body?
- Does the structure of the organ give any clue as to what its function might be?
- What structural consistencies (or variations, if any) can be noted between different specimens, images or drawings of the *same* organ type?

Think like Leonardo and see your anatomical curiosity and competence surge!

2. 'Stick Your Insides Out'.

If you flip to the end of the Workbook you'll find a page of coloured labelled dots for you to print and cut out, if you're able.

Notice that the organ at each Activity Station is represented by a specific **colour**. Each Activity Station is also accompanied by a photograph of a plastic Human Torso Model from our Anatomy Wet Laboratories on which the location of each organ in the body is highlighted by an appropriately coloured dot.

Using the photographs of the plastic Human Torso Model offered at each Activity Station as a guide, if you have access to a colour printer, print and cut out the appropriately coloured dot related to each Activity Station and stick it (with whatever adhesive means you happen have on hand) on that part of your clothing overlying the 'spot' on YOUR body where you think the organ represented by that colour is located in YOU. If you don't have a coloured printer, be resourceful and use what you can 😊

This is what we call 'Sticking Your Insides Out' and at the end of the Workshop your photo should not only be a colourful reminder of today's activities; it can also serve as an anatomy learning tool in itself.

We can't wait to see a photo of your organ location masterpiece !

So snap a pic of your stickers and paste it into the box at **Activity Station 9** before you submit your Workbook.

Righto ... Let's go ...

ACTIVITY STATION 1

THE HEART

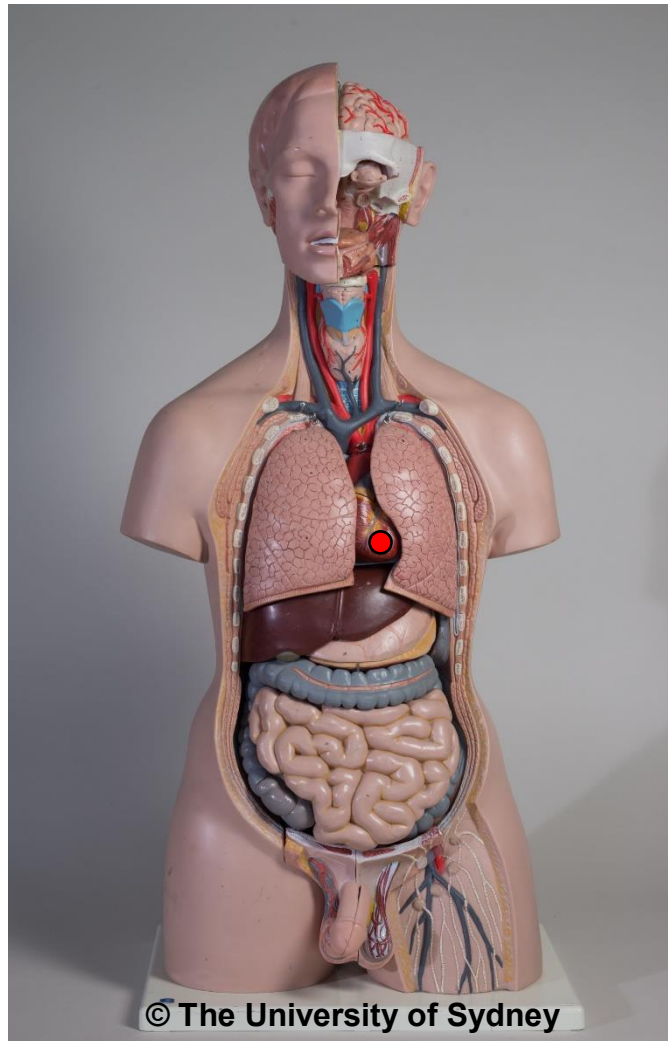
Your heart is located right in the centre of your thorax, flanked on either side by your lungs.

It is in effect a 300g hollow ball of muscle which sits right on top of your diaphragm with its apex protruding towards your left lung.

Its job is to pump oxygen and nutrient rich blood around your body and to itself via connected blood vessels called arteries and veins.

See location of the heart marked with the **red dot** ● on the human torso model in the image to the right.

‘Stick YOUR insides out’ by marking the location of your own heart on your own body in any way you like and snap a picture to insert into **Activity Station 9** below.



Resources

Video Links:

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528571>

(approx. 4 minutes viewing time)

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528575>

(approx. 3.5 minutes viewing time)

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528577>

(approx. 1.5 minutes viewing time)

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528581>

(approx. 3.5 minutes viewing time)

Organ Image Catalogue: Pages 2-7.

BioDigital Human Link:

<https://human.biodigital.com/explore/search/heart>

What do you 'think' about the heart ?

- After viewing the resources offered, count the number of large blood vessels connected directly to the heart. How many are there?
- Why do you think the heart has smaller blood vessels on its surface?
- Notice that the heart and some large blood vessels have 'valves'. What do you think these valves do?

'Draw it Like da Vinci' in the space below ...

ACTIVITY STATION 2

THE LUNG

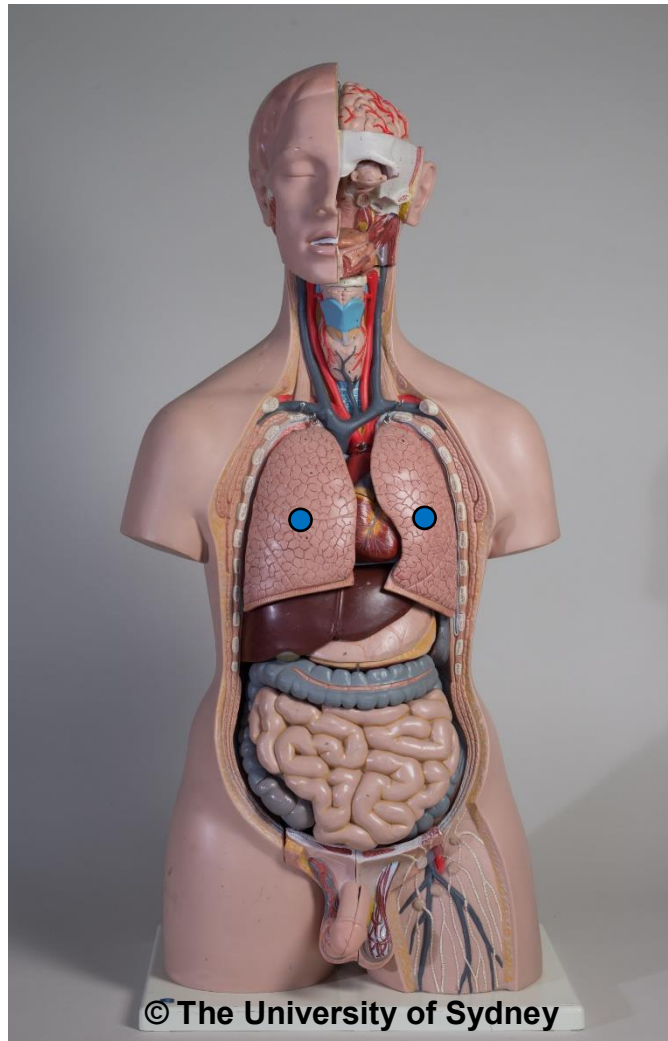
Your lungs come in a pair with each lung weighing in at around 420g, on average, having its own location in your thorax, sitting on top of your diaphragm next to your heart.

Your lungs connect via the bronchi to your trachea which in turn connects with your larynx to allow you to vocalise.

They have a close connection with your heart and are solely responsible for putting oxygen into your blood whilst also taking carbon dioxide out.

See location of the lungs marked with the two **blue dots** ● on the human torso model in the image to the right.

‘Stick YOUR insides out’ by marking the location of your own lungs on your own body in any way you like and snap a picture to insert into **Activity Station 9** below.



Resources

Video Links:

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528599>
(approx. 3.5 minutes viewing time)

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528591>
(approx. 5 minutes viewing time)

Organ Image Catalogue: Pages 8-13.

BioDigital Human Link:

<https://human.biodigital.com/explore/search/lung>

What do you 'think' about the lung ?

- After viewing the resources offered, what do you think an isolated human lung would feel like if you were to pick it up and squeeze it gently?
- Notice differences in the thicknesses and textures of the various openings in the lung. What do you think might pass through these openings?
- Do you think the shape and contours of the lungs give any clues as to where they fit within the body and the organs and structures they are positioned next to?

'Draw it Like da Vinci' in the space below ...

ACTIVITY STATION 3

THE LIVER

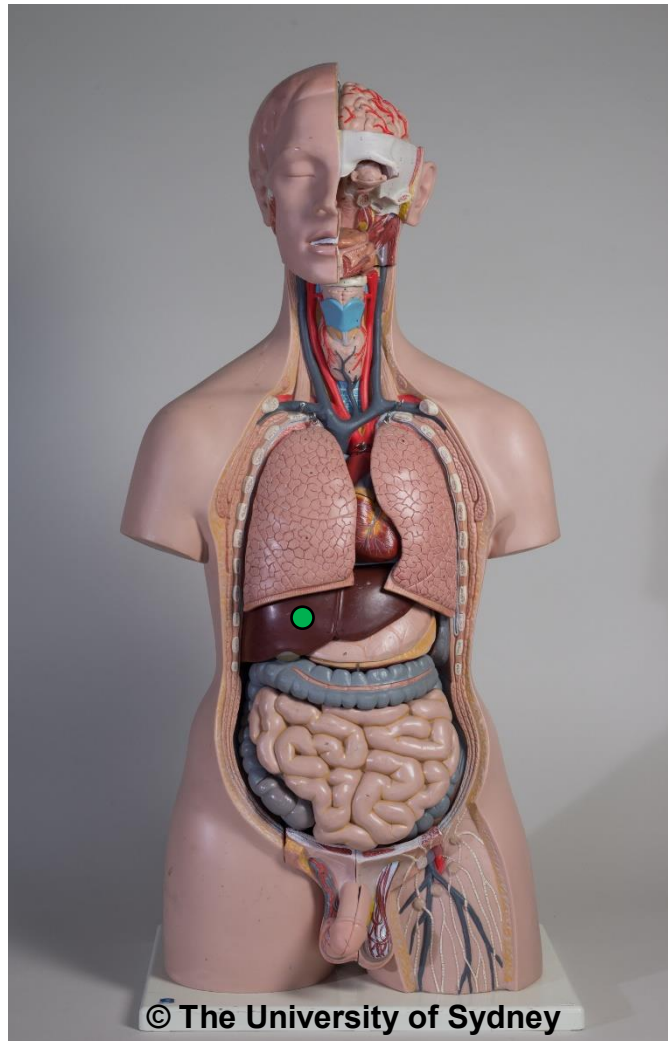
Your liver is located directly under your diaphragm in the upper right quadrant of your abdomen.

It is a large, solid organ, weighing in at 1500g, on average, and loaded with blood vessels which contribute to its generally reddish colour.

Your liver works a number of vital jobs including contributing enzymes for the digestion of the food you eat, cleaning your blood after it has returned from your gut and metabolising drugs and chemicals that find their way into your body.

See location of the liver marked with the **green dot** ● on the human torso model in the image to the right.

‘Stick YOUR insides out’ by marking the location of your own liver on your own body in any way you like and snap a picture to insert into **Activity Station 9** below.



Resources

Video Links:

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528627>
(approx. 2.5 minutes viewing time)

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528633>
(approx. 3 minutes viewing time)

Organ Image Catalogue: Pages 14-17.

BioDigital Human Link:

<https://human.biodigital.com/explore/search/liver>

What do you 'think' about the liver ?

- After viewing the resources offered, recall how many different partitions or lobes the liver has?
- Are there any structures or features associated with the liver that you think might be reflective of its job descriptions outlined above?
- Give an example of something in your home that you think might reflect the weight and solid feel of the liver.

'Draw it Like da Vinci' in the space below ...

ACTIVITY STATION 4

THE SPLEEN

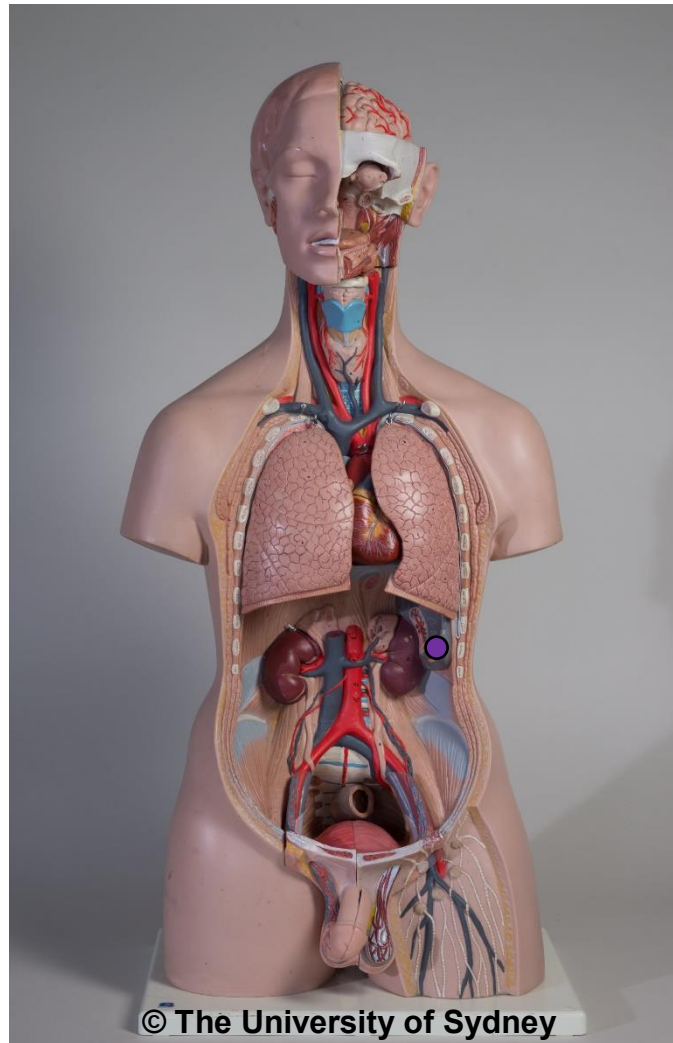
Your spleen weighs about 140g, on average, and is located below your diaphragm far back in the upper left quadrant of your abdomen.

Its job includes contributing to the function of your immune system and cleaning your blood of dead and dying blood cells.

The spleen is full of blood vessels and is susceptible to injury by trauma to the lower ribs. Injury can lead to necessary spleen removal. If you must, you can survive without a spleen.

See the location of the spleen marked with a **purple dot** ● on the human torso model in the image to the right.

‘Stick YOUR insides out’ by marking the location of your own spleen on your own body in any way you like and snap a picture to insert into **Activity Station 9** below.



Resources

Video Link:

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528639>
(approx. 3 minutes viewing time)

Organ Image Catalogue: Pages 18-20.

What do you 'think' about the spleen ?

- After viewing the resources offered, do you think the blood vessels attached to the spleen look curly or straight?
- Can you see any anatomical clues to suggest that the spleen is a blood cleaner?
- Do you think the contours and general shape of the spleen give clues as to where it fits in the body?

'Draw it Like da Vinci' in the space below ...

ACTIVITY STATION 5

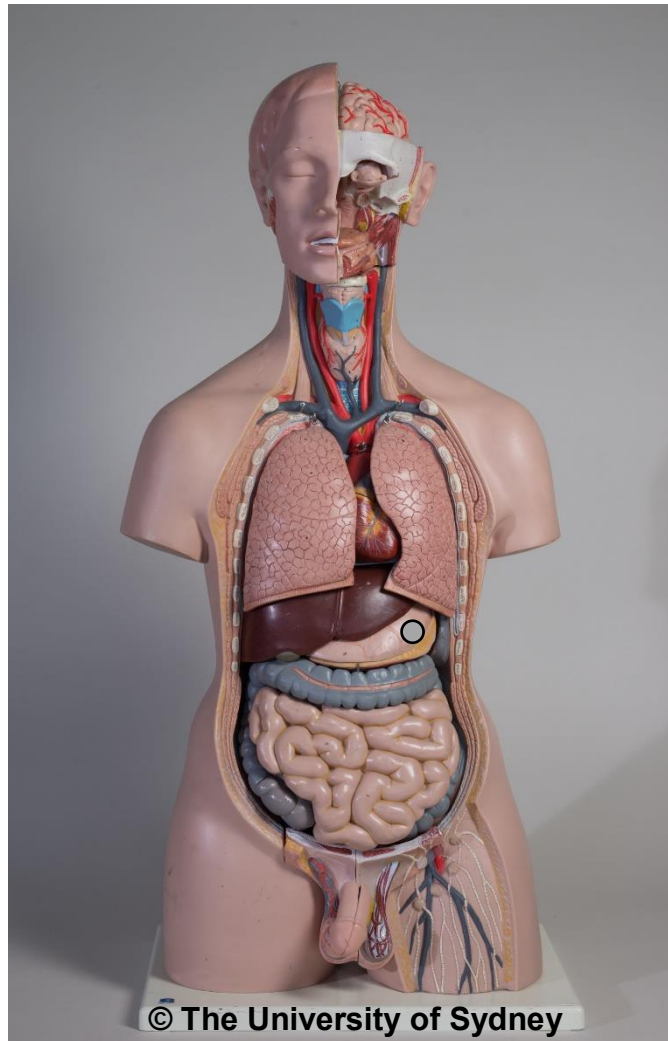
THE STOMACH

Your empty stomach weighs in at around 140g, on average, and is located just below your diaphragm in the upper portion of your abdomen and just to the left of midline (hanging out next to your spleen).

It follows on from your oesophagus, which provides the passage for swallowed food from your mouth. Your stomach is responsible for storing swallowed food and for its consequential mechanical and chemical digestion before passing it on to your duodenum for further processing.

See location of the stomach marked with the **grey dot** ● on the human torso model in the image to the right.

‘Stick YOUR insides out’ by marking the location of your own stomach on your own body in any way you like and snap a picture to insert into **Activity Station 9** below.



Resources

Video Link:

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528593>
(approx. 3 minutes viewing time)

Organ Image Catalogue: Pages 21-23.

BioDigital Human Link:

<https://human.biodigital.com/explore/search/stomach>

What do you 'think' about the stomach ?

- After viewing the resources offered, do you think the anatomy of the stomach is reflective of its function?
- Observe resources showing the inside an opened specimen of the stomach and notice the ridges on the inside wall. What do you think those ridges are for?
- Give an example of something in your home that you think reflects either the structure OR the function of the stomach.

'Draw it Like da Vinci' in the space below ...A large empty rectangular box with a black border, intended for a drawing. It occupies the lower half of the page.

ACTIVITY STATION 6

Your intestine comes in 'small' and 'large' versions. Both are located within your abdomen and are responsible for the absorption of nutrients and water from the food you ingest. Together they weigh 3000g, on average.

Your small intestine (jejunum and ileum) comes first continuing from your duodenum. Then, at your caecum (where your appendix attaches; if you still have it) your large intestine (colon) takes over to send undigested and waste products towards your anus.

See location of the small intestine marked with **small orange dot** ● and large intestine marked with the **large orange dot** ● on the human torso model in the image to the right.

'Stick YOUR insides Out' by marking the location of your own intestines on your own body in and snap a picture to insert into **Activity Station 9** below.

Resources

Video Links:

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528617>
(approx. 3.5 minutes viewing time)

<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528615>
(approx. 1.5 minutes viewing time)

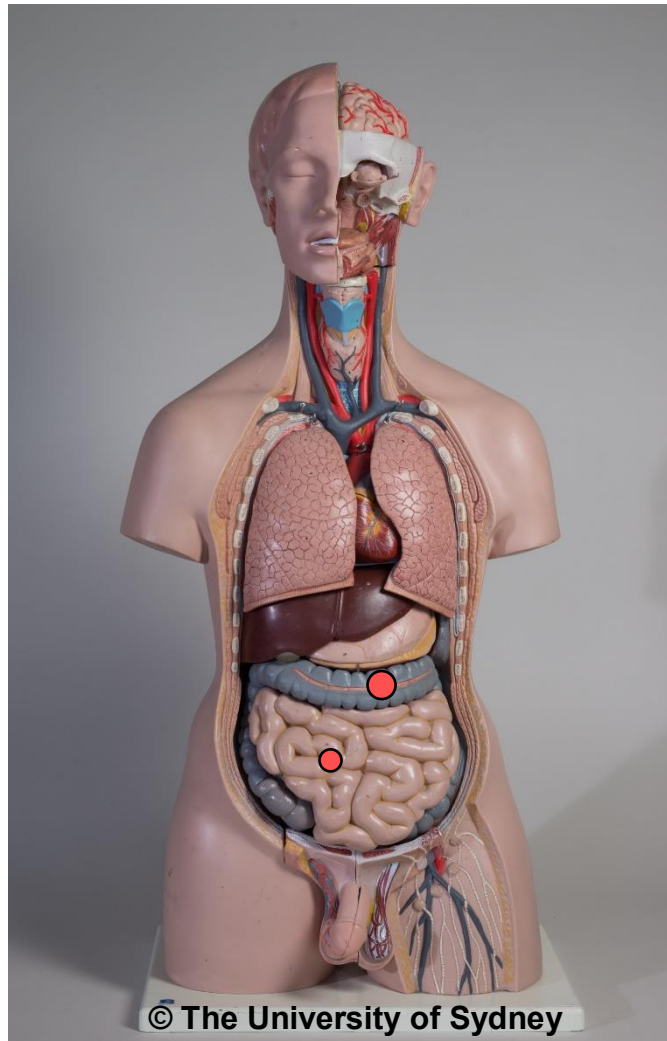
<https://aclandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528621>
(approx. 3.5 minutes viewing time)

Organ Image Catalogue: Pages 24-29.

BioDigital Human Link:

<https://human.biodigital.com/explore/search/intestine>

THE INTESTINE



What do you 'think' about the intestine ?

- After viewing the resources offered, what features did you see on the inside surfaces of the small intestines which suggests their function relates to absorption?
- Observe resources showing the large intestine with an appendix attached. What are some features of the appendix that you think makes it susceptible to infection?
- Give an example of something in your home that you think reflects either the structure OR the function of the intestine.

'Draw it Like da Vinci' in the space below ...

ACTIVITY STATION 7

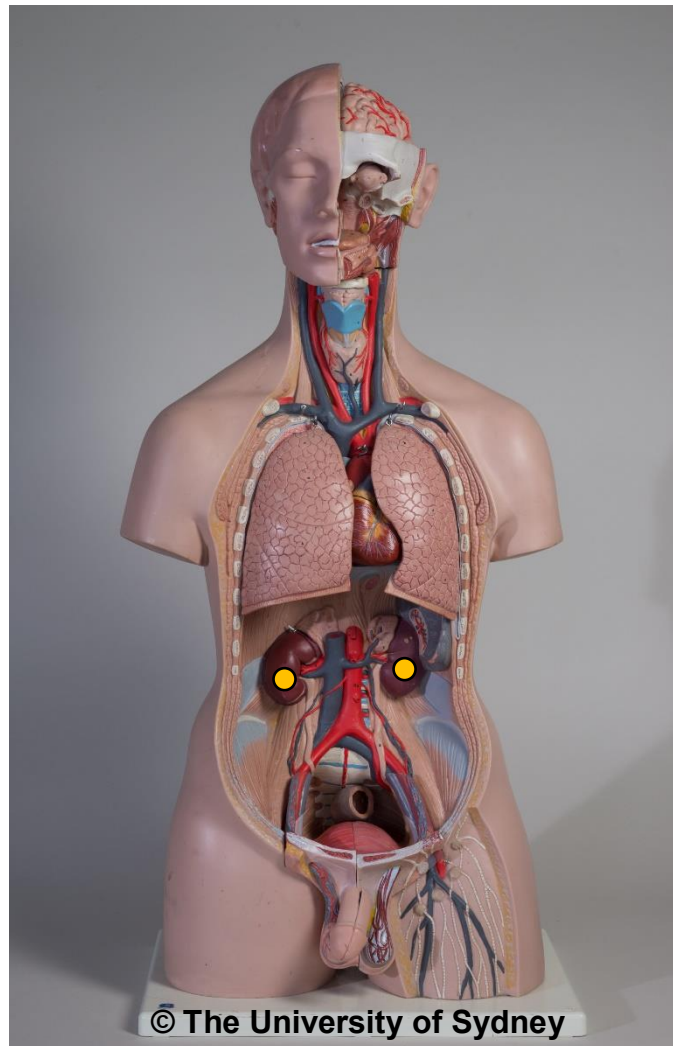
THE KIDNEY

Kidneys, like lungs, come in pairs. In you they are located within your abdomen, *behind* the sac that holds your intestines.

Your kidneys weigh 130g each, on average, and are responsible for filtering your blood to maintain homeostasis of your electrolytes and to remove waste products via the urine.

See the location of the kidneys marked with **yellow dots** ● on the human torso model in the image to the right.

‘Stick YOUR insides Out’ by marking the location of your own kidneys on your own body in any way you like and snap a picture to insert into **Activity Station 9** below.



Resources

Video Link:

<https://acland anatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528651>

(approx. 5 minutes viewing time)

Organ Image Catalogue: Pages 30-34.

BioDigital Human Link:

<https://human.biodigital.com/explore/search/kidney>

What do you 'think' about the kidney ?

- After viewing the resources offered, what do you think an isolated human kidney would feel like if you were to pick it up? Would it feel hollow or solid?
- Notice the location and types of structures sticking out of the kidney. What do you think might pass through these structures?
- Give an example of something in your home that you think reflects either the structure OR the function of a kidney.

'Draw it Like da Vinci' in the space below ...

ACTIVITY STATION 8

THE SPINAL CORD

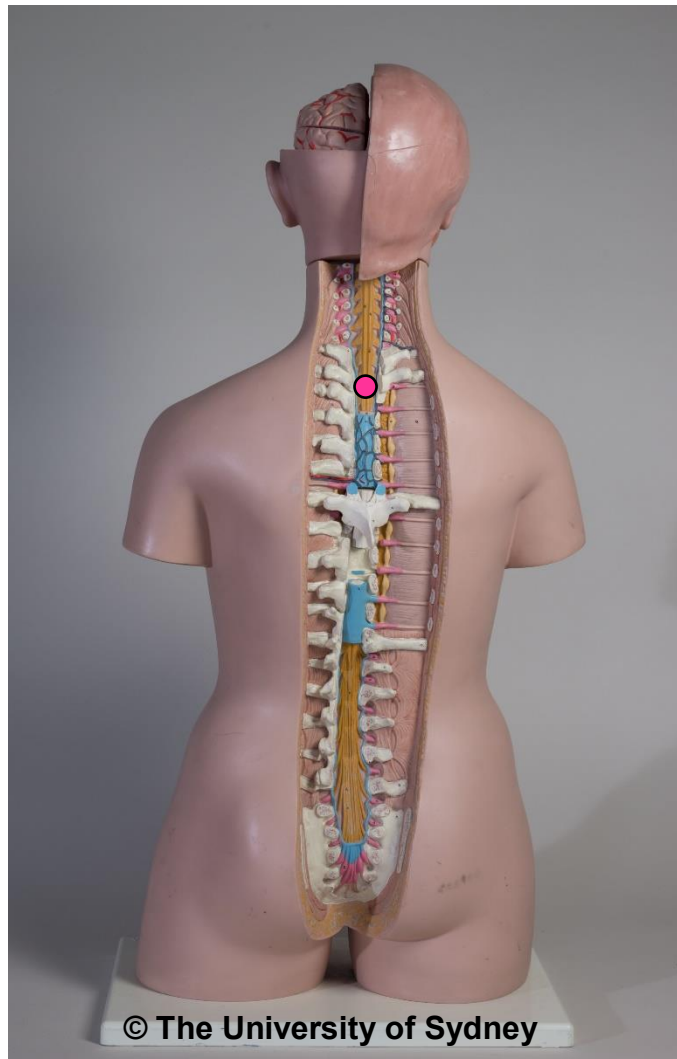
Your spinal cord weighs 45g, on average, and is located within the bony vertebral column (spine) that runs down the midline of your back.

It is a continuation of your brain that is encased in your skull and, by comparison, is wrapped in the same three protective wrappings.

The job of your spinal cord is to act as a communication line allowing your body to send messages to your brain and your brain to respond to these messages and control your body.

See the location of the spinal cord marked with a **pink dot** ● on the human torso model in the image to the right.

‘Stick YOUR insides Out’ by marking the location of your own spinal cord on your own body in any way you like and snap a picture to insert into **Activity Station 9** below.



Resources

Video Links:

<https://aucklandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528251>
(approx. 3 minutes viewing time)

<https://aucklandanatomy-com.ezproxy2.library.usyd.edu.au/MultimediaPlayer.aspx?multimediald=10528253>
(approx. 4 minutes viewing time)

Organ Image Catalogue: Pages 35-39.

BioDigital Human Link:

<https://human.biodigital.com/explore/search/spinal%20cord>

What do you 'think' about the spinal cord ?

- After viewing the resources offered, what do you think an isolated human spinal cord would feel like if you were to pick it up?
- Compared to the heart, how many *large* blood vessels can you see associated with the surface of the spinal cord and what does this number suggest to you about the blood supply to the spinal cord?
- Give an example of something in your home that you think reflects either the structure OR the function of a spinal cord.

'Draw it Like da Vinci' in the space below ...

ACTIVITY STATION 9 SHOW US HOW YOU STUCK YOUR INSIDES OUT !

ACTIVITY STATION 10 TELL US ABOUT YOUR FAVE 😊

Choose an organ that you have been intrigued by during the course of this Online Anatomy Workshop and take some time to fill in the boxes below:

1. Your favourite organ:

2. Write a brief explanation, in no more than 50 words, as to why this particular organ intrigues you and state one disease you think might afflict your favourite organ.

STUDENT IDENTIFICATION NUMBER: _____

STUDENT SIGNATURE: _____

DATE OF SUBMISSION: _____

MEDS1001 ANATOMY WORKSHOP ASSESSMENT TASK (2.5%)

Task details: Print out this Anatomy Workshop Workbook and complete all 10 of the Activity Stations by filling in all of the **boxed** activities by hand. If you cannot print the Workbook out, just complete the 10 Activity Stations by writing and drawing on clearly labelled sheets of paper. You may append extra pages if you need more space.

‘Completion’ includes attending to all the questions, completing all the drawings, inserting a photo of yourself with your ‘insides stuck out’ and briefly telling us about the organ you have gained the most appreciation for whilst completing this Workshop.

Please scan your completed Anatomy Workshop Workbook, save it as a PDF file and submit it through the MEDS1001 Canvas ‘Assignment’ tab for assessment (see below).

Due date: Friday the 15th May 2020 at 11:59pm.

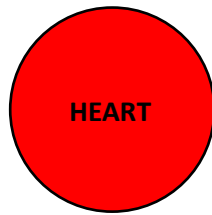
Weighting: 2.5% of final marks.

Submission details:

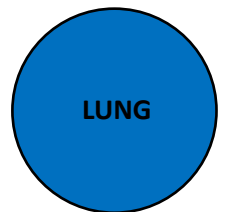
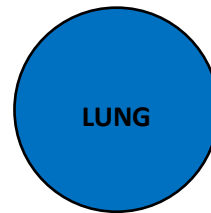
- **Scan** your completed Anatomy Workshop Workbook, and any appended pages, to produce a single Adobe PDF document.
- Save your PDF with a filename including your student ID number and the words ‘Anatomy Workshop Workbook’
ie.123456789_AnatomyWorkshopWorkbook.pdf
- Submit your PDF on MEDS1001 Canvas.
- **Login to MEDS1001 Canvas; go to Assignments / Anatomy Workshop Workbook Submission.**

‘STICK YOUR INSIDES OUT’ stickers for you to print, cut and stick!

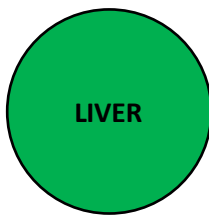
Heart:



Lung:



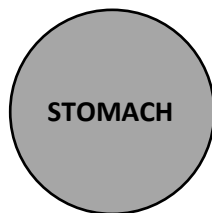
Liver:



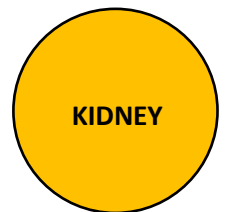
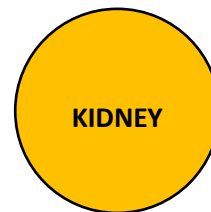
Spleen:



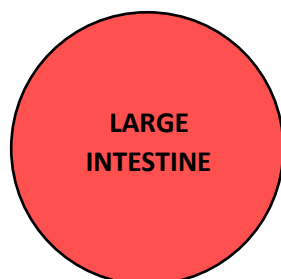
Stomach:



Kidney:



Intestine:



Spinal cord:

