

Art in Physiology: Anterior Cardiac Anatomy

Posterior cardiac physiology

cordae tendinae

Heart valves

Welcome!

This is a unique pilot study that aims to improve your knowledge of general cardiac physiology through close observation of cardiac anatomy and the critical observation of physiological structures.

This short study is intended to supplement dissection practicals , however, can be done at any time and independently of that course.

You should find that your dedicated appreciation of the cardiac structures will give you an advantage over the simple dissection practical that you have experienced. This supplementary study should help you in your studies going forwards.

There will be **5 or 6 short lessons** spread out over the next two months. You will be required to upload work and/or undertake practise exercises to improve your abilities of sketching, draughtsmanship and general anatomy.

For each session you will be given tasks to improve three elements of your critical thinking;

1. Accuracy
2. Draughtsmanship
3. Knowledge of cardiac anatomy



By the end of this pilot study you will have created a book that enables critical analysis of the structures found in the heart.

You must:

1. Create a workbook with pages for each session
2. Take a photo of your sketches and send me a PDF or a document and upload your work to the website
3. Write answers to the questions asked neatly at the bottom of the page

ANTERIOR STRUCTURE- gross anatomy

1. Accuracy

Accuracy/draughtmanship

1. *Using a darker , finely sharpened pencil and some tracing paper, trace the photo of the heart provided below- drawing every line you see (either black & white or colour images).*
2. *Identify as much of what you see in the drawing as possible as you go along.*
3. *Take your tracing and transfer it onto paper*
4. *What is your first impression of the heart image?*

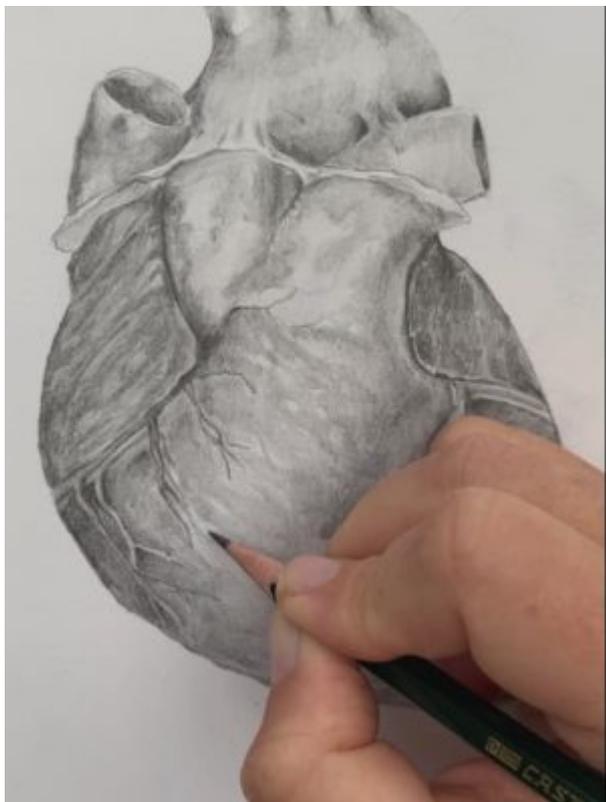
See tabs below for what you need to do.... #Instructions-for-accuracy

Tracing an image that is initially the correct way round

I used a 2B pencil to trace the image initially, which is quite soft. I then traced the

back of that image on the tracing paper, using the same grade pencil.

To transfer into my book, I turned the image right side again and then used a 6F pencil which is hard and remains sharp, to transfer the image into my drawing book.



Accuracy & Draughtmanship

Outlines and shape

Black and white photo

Questions

Accuracy & Draughtmanship

Drawing of a fixed human heart, including preserved cardiac vasculature.

In this section we will be focussing on close observation structure and first impressions.

[Click on the link here to download the image LAMB HEART ANTERIOR](#)

Notice its shape. Floppy at the top and firm at the apex.

Outlines and shape

Drawing of a fixed human heart, including preserved cardiac vasculature.

- Download the photo of the heart provided for you to trace.
- You can take the picture here and alter it if that makes it easier using your phone/computer setting to emphasise black and white, tone and contrast.
- You can also fiddle with the settings to increase brightness or any other settings that make the picture more appealing to you.
- I would suggest creating an outline to copy the shape of the heart- which contains the coronary blood vessels and the major blood vessels going into and out of the heart.
- Make outlines of the major structures. As with all accurate drawings it is essential everything is in place.

Download LAMB HEART ANTERIOR

Summary

1. Trace it
2. Transfer your tracing to paper
3. Tidy up your image- you can either outline this with a fine pencil or fine nibbed pen (0.3mm)

Notice its shape. Floppy at the top and firm at the apex.

Black and white photo

You may find it easier to trace something that is black and white. I have altered the photo here to define anatomical structures.

Image: LAMB HEART ANTERIOR b:w

Here is the Mirror image for printing then tracing

LAMB HEART ANTERIOR b:w mirror image for tracing

Questions

Questions

How easy was it to identify as much of what you saw in front of you?

What was your first impression of the heart-

eg:

That there's a lot of fat

It looks really shiny

I can barely see anything.

These are the sorts of notes you can append to your final drawing- see Draughtmanship exercise

2. Knowledge of anatomy

1. *Take your anterior heart tracing (just completed) and superimpose it onto the printed image that is the same size- alternatively take a tracing of the printed image here below and superimpose it ontop your first drawing*
2. *Identify any structures that that you did not get before*

Relating what we see to what we think we see

Image

Relating what we see to what we think we see

Often we see images like this- but it incredibly difficult to relate what we have seen in reality to the image.

Go to next tab:

Image

Trace this image

SUPERIMPOSITION for PHOTO tracing

and directly superimpose it over what you have drawn.

Try and identify and label the following anatomical structures listed below correctly on **YOUR** drawing.

Superior Vena Cava

Ascending Aorta

Pulmonary Trunk

Left Ventricle

Right Ventricle

Apex

Left atrium

Right atrium

Anterior intraventricular artery

Pericardium

Superimposed 1

2

3

Superimposed 1

Drawing of the heart

Below are 2 files:Doc and PDF that you can print off and superimpose to help you label

Each of the tabs has different levels of transparency to see how these can overlay.

[SUPERIMPOSITION for PHOTO tracing stage 1PDF](#)

[SUPERIMPOSITION for PHOTO tracing stage 1DOC](#)

Its really tricky to see any relationship doing it this way unless you flick between your superimposed tracing and image

SUPERIMPOSITION-for-PHOTO-tracing-stage-2PDF

SUPERIMPOSITION for PHOTO tracing stage 2

3

Ultimately it makes sense through continued observation

SUPERIMPOSITION for PHOTO tracing stage 3PDF

SUPERIMPOSITION for PHOTO tracing stage 3

Final labelling

Cheat Sheet

Final labelling

Hopefully after a bit of work you should have identified through observation alone those gross anatomical structures

see next tab

Cheat Sheet

[Click on the link to find the fully labelled **LAMB HEART ANTERIOR b:w cheat sheet**](#)

3. Draughtmanship

1. Take your first tracing of the anterior cardiac surface and create a 3D drawing of your heart.
2. Use shading techniques- either stippling, hatching/crosshatching, or continuous shading to create a 3D effect.
3. Highlight those major structures and draw straight lines using a ruler to identify them with legible annotation.
4. Don't forget :Date, title and legends

Go to previous pages on shading techniques if you're unsure

NOW LEARN HOW TO DRAW THIS! ANTERIOR CARDIAC ANATOMY AND CORONARY CIRCULATION

You should now have a complete page, tracings, and annotations with notes. Do remember to date it. When you have done so, upload a PDF or photo of your work into the [forum](#) AND email to me

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