

Dr. Orly Lewis

Modelling

Greco-Roman Anatomy

Content

- 1 — Anatomy in Ancient Greece and Rome
- 2 — 3D Modelling of Ancient Anatomy
- 3 — Research Platform (3D atlas)
- 4 — Confidence / Source Indication

1 — *anatomē* (ἀνατομή)

Field of knowledge
and Practical method

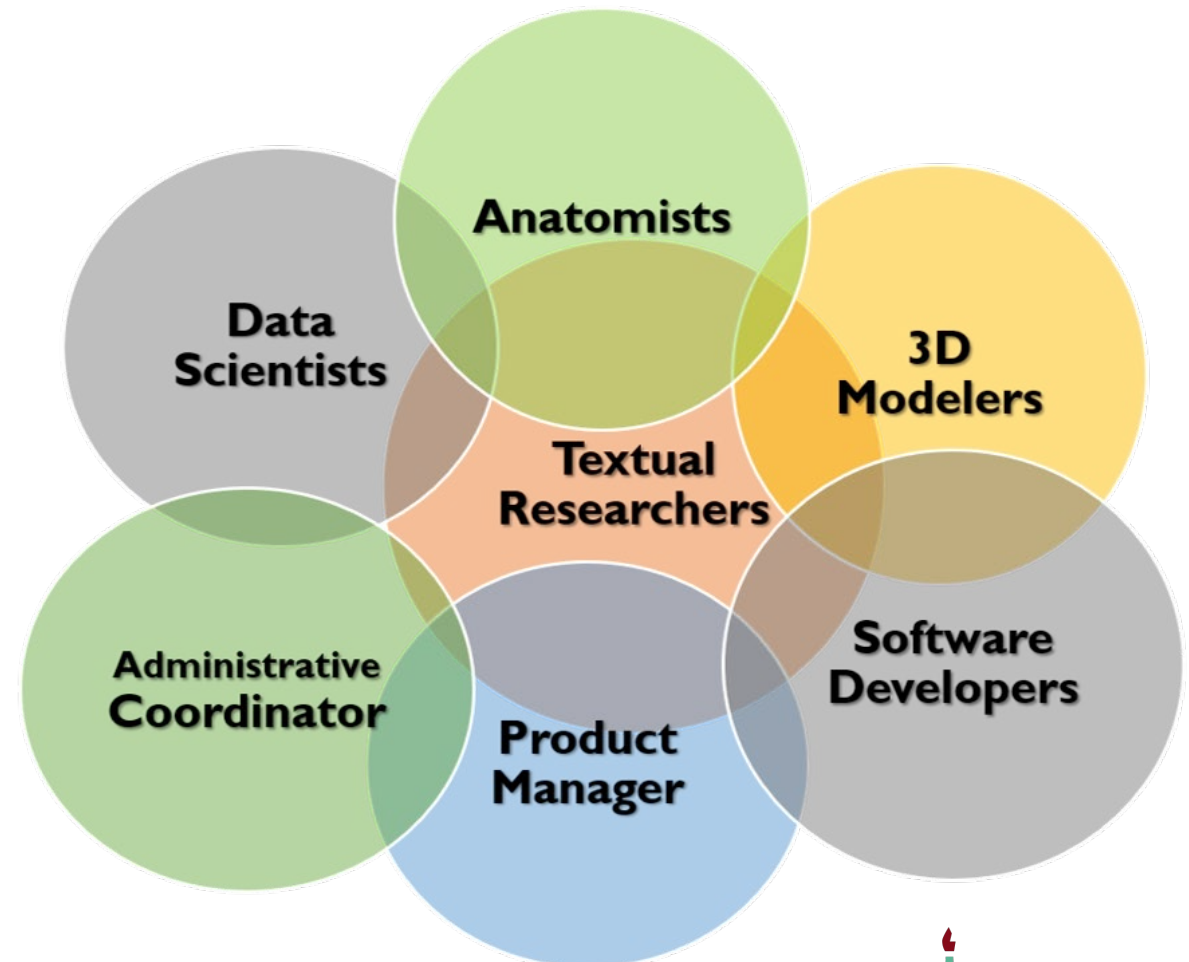
Ancient *anatome*

- **Many anatomies**
- **Ambiguous terminologies**
- **Textual sources (almost exclusively)**
 - **Descriptions of ideas and research**
- **Research mostly performed on animals**

2 — 3D Modelling

From text to Model

Multidisciplinary Team



**ATLOMY: An Interactive Visual and Textual
Atlas of Greco-Roman Anatomy**

Pipeline

Translate and Interpret

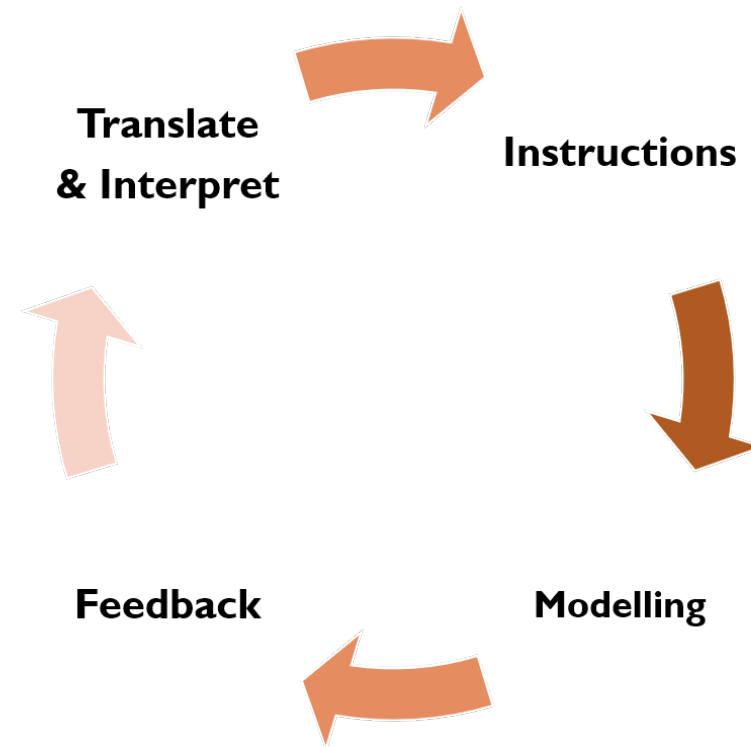
- Greek to English
- Anatomical discussion and deciphering

Instructions

- List of items
- Properties, connections

Modelling (professional modelers)

Feedback (return to text?)



Interpretive Decisions: Examples from *Sacred Disease*

- 5th century BCE
- Hippocratic Corpus
- Causes and Treatment of the
“Sacred Disease”
- Describes related anatomy
- Brain and vascular systems as key

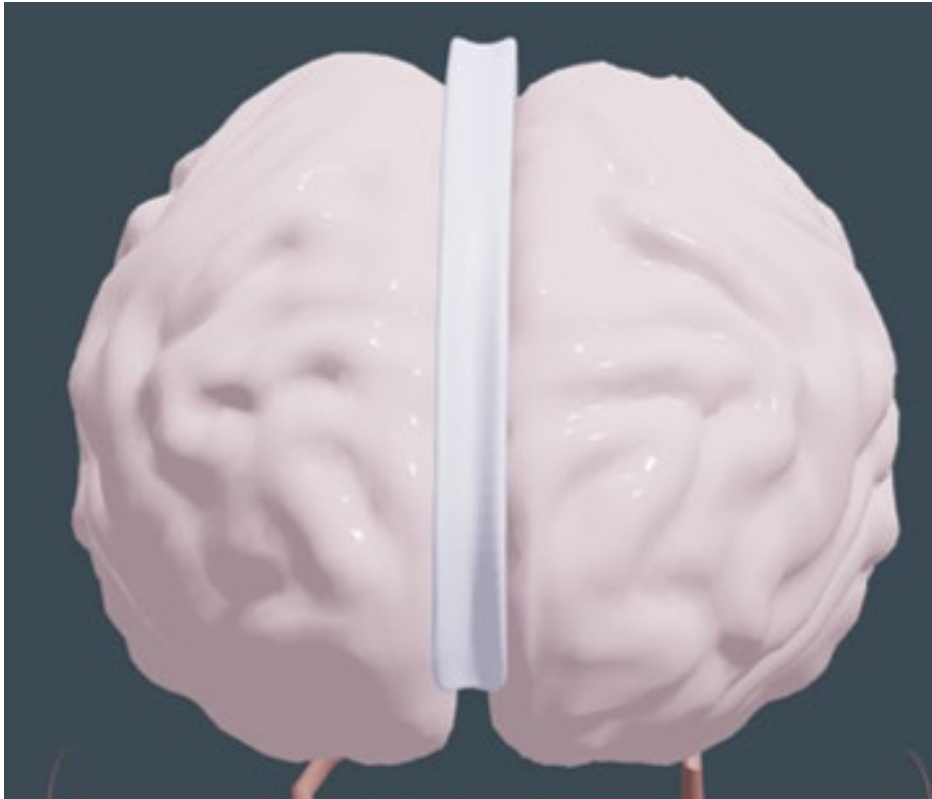
Thin Membrane in the Brain

“The brain of humans is double (...) A thin membrane separates it in the middle [lit. separate its middle].”

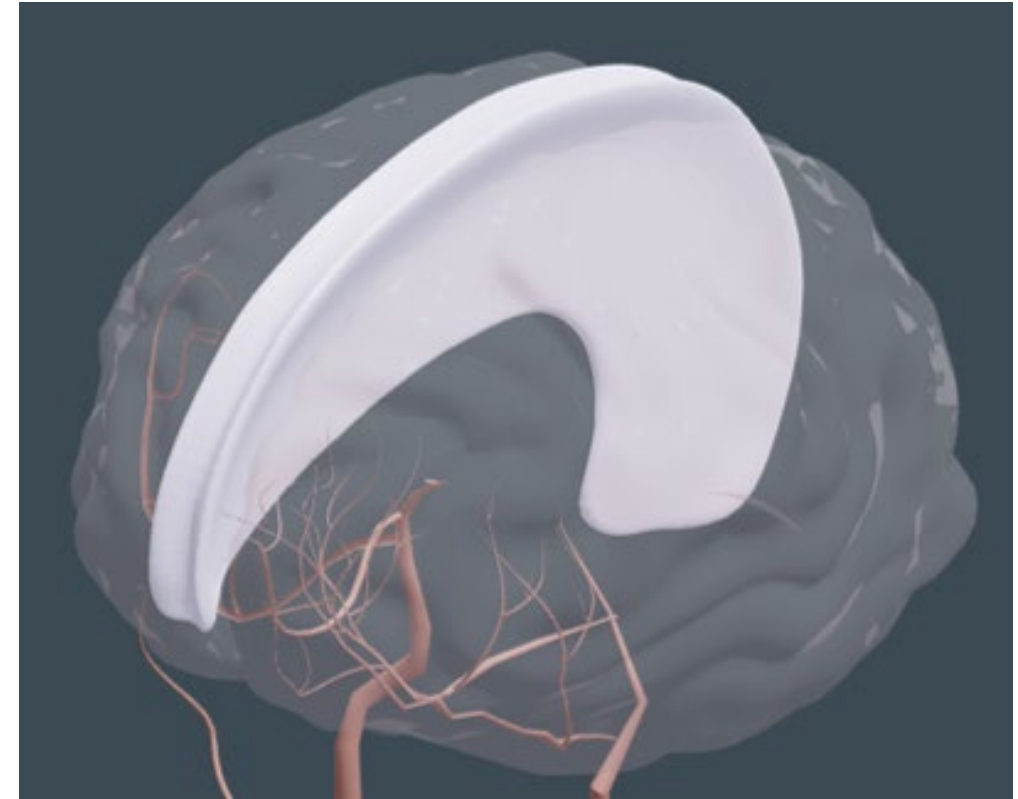
ὁ ἐγκέφαλος ἐστὶ τοῦ ἀνθρώπου διπλόος (...). τὸ δὲ μέσον αὐτοῦ διείργει μῆνιγξ λεπτή.

(Sacred Disease 3)

Brain and Membrane in *Sacred Disease*



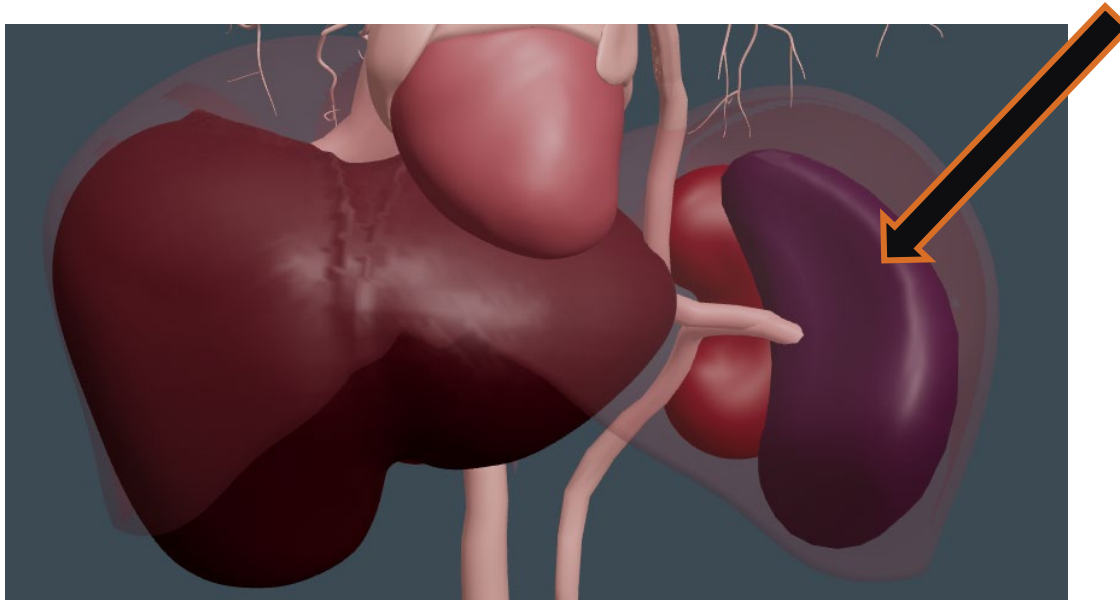
Brain hemispheres (“is double”)
and the “thin membrane” in its middle
(anterior view) ©ATLOMY



Brain (faded)
and the “thin membrane” in its middle
(view from left side) ©ATLOMY

<https://www.atlomy.com/three-d-model/AtlomyModel%20-%20clavcles%20only.glb/%CF%86%CE%BB%E1%BD%B3%CF%88/18/vein>

Spleen in *Sacred Disease*



Spleen with surrounding viscera

Diaphragm faded

©ATLOMY

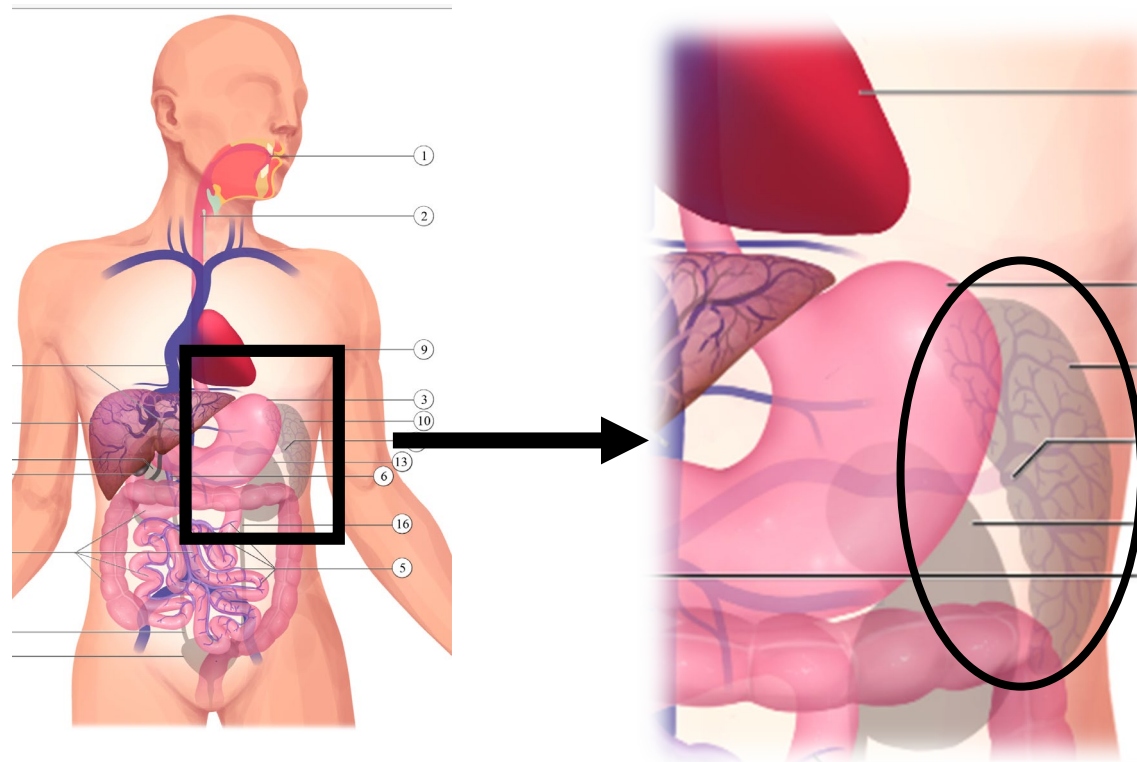


Spleen isolated

©ATLOMY

<https://www.atlomy.com/three-d-model/AtlomyModel%20-%20clavicles%20only.glb/%CF%86%CE%BB%E1%BD%B3%CF%88/18/vein>

(But not so for Galen)



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3 — Research Platform (Atlas)

Dedicated platform - Meeting scholars' needs

- Moving smoothly between text and model
 - References, citations, lexical information on the models
- More than a viewing platform
 - Interpretive insights; anatomical and lexical explanations
- Research and production transparency
- Open access
- User-oriented and Text-oriented design

Features

- Open access web-based software
- 3D models of particular parts or entire body
- Search and browse by author, term, reference
- Visual and textual commentary
- Interactive modular viewing and study options

4 — Confidence / Source indication

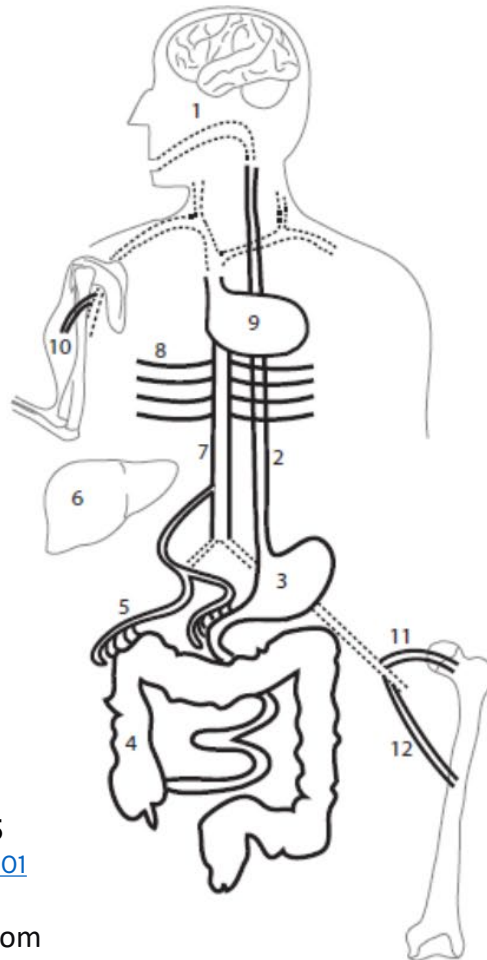
Confidence / Source indication (*Working categories)

- Text
- Inference
 - based on observation / “logic” / other texts
- Unclear structure
- Unclear trajectory
- Textual problem
- Meaning unclear

Confidence indication in practice

(Ps.-Aristotle, *On Pneuma*)

- 1= mouth and oropharynx
- 2= esophagus
- 3= stomach
- 4= intestines
- 5= blood-ducts from the *megalē phleps* to the stomach and the intestines
- 6= liver
- 7= *megalē phleps* (vena cava)
- 8= blood-ducts extending along the ribs (intercostal veins)
- 9= heart
- 10= (example of) a blood-duct leading to the muscle
- 11= (example of) a blood-duct leading to the head of a bone
- 12= (example of) a blood-duct leading to the middle of a bone



Schematic representation of System 2. Full black lines represent parts of System 2 for which there is explicit textual evidence. Dotted black lines represent presumed passages which connect parts of System 2. Thin grey lines represent salient organs that facilitate understanding of the diagram, some of which are explicitly mentioned in connection with System 2. The diagram represents bodily parts out of their relative sizes and positions for the sake of intelligibility.

From: Gregoric, Lewis, Kuhar 2015
<https://doi.org/10.1163/15733823-00202p01>

Thank you

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