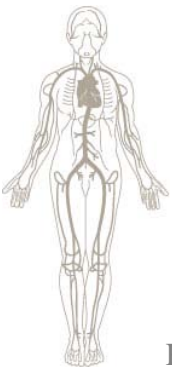


Color me beautiful!

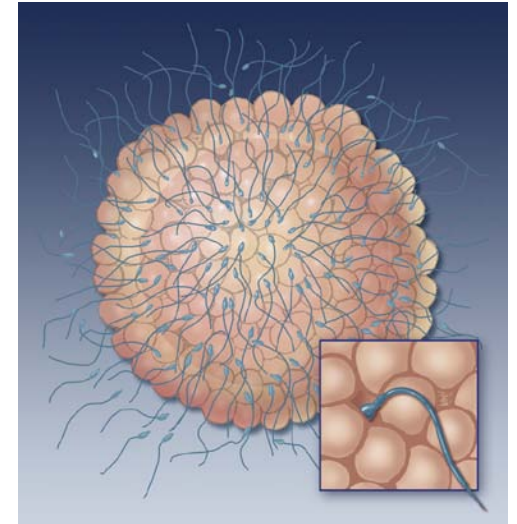
Insight into the field of medical illustration



IllustraVis 2009
If you want to use content
from these slides, you have
to ask the respective author
for permission!

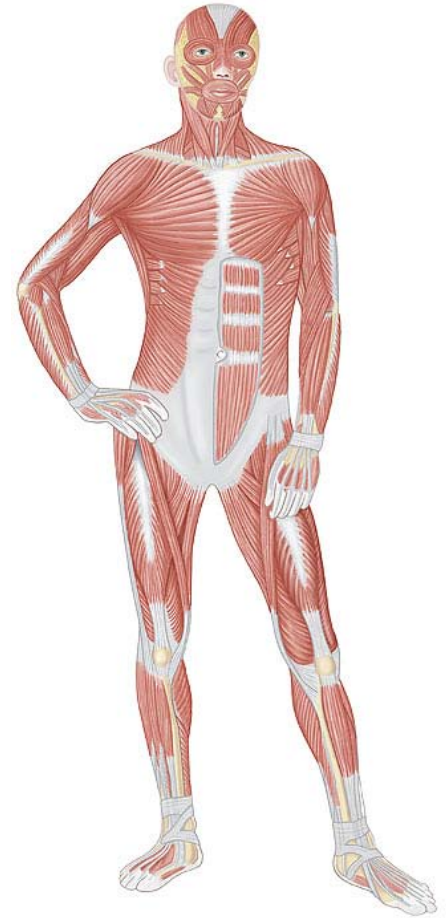
How do you become a medical illustrator?

- Background
 - Bachelor of Arts degree in Art and Biology
 - Macalester College, St. Paul, Minnesota
 - Master of Science degree in Medical illustration
 - Medical College of Georgia
 - Certified medical illustrator
 - Must be renewed every 5 years



My career

- **Universitetsforlaget, Oslo**
(University press)
 - 1983 until 1989
- **Self-employed**
 - 1989 until 2005
- **Kari C. Toverud AS (Inc.)**
 - 2006 until present

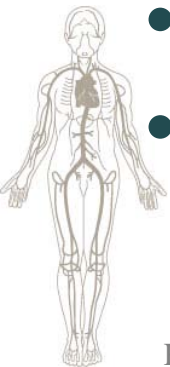


My office



My clients

- Publishers
 - Textbooks
 - Reference books
 - Interactive websites
- Journals and newspapers
- Pharmaceutical companies
- Hospitals
- State institutions





Kari C. Toverud CERTIFIED MEDICAL ILLUSTRATOR

HOME PUBLICATIONS AWARDS EXHIBITS CLIENTS ABOUT PRICING LICENSING CONTACT

Illustrations:

The cardiovascular system
The digestive system
The endocrine system
The lymphatic system
The muscular system
The nervous system
The reproductive system
The respiratory system
The sensory system
The skeletal system
The skin
The urinary system

Cells and tissue

First aid

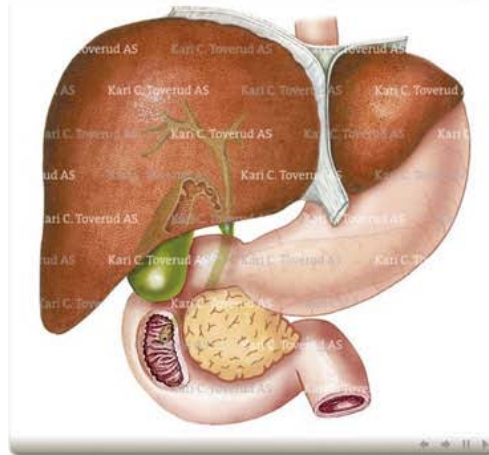
Medical supplies/instruments

People

Animations:

Samples

Need an illustration?



'Medical illustrators draw what cannot be seen, watch what has never been done and tell thousands about it without saying a word'.

by Bill Gramley, Neil Pointer and Bill Winn

Kari C. Toverud



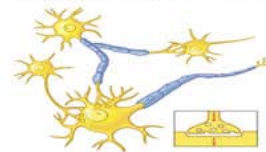
Do you need medical illustrations for your presentation, publication or website?

I have been working as a professional award-winning medical illustrator for 24 years. I provide informative medical illustrations, animations, interactive learning sites and storyboard script-writing for a variety of clients, including publishers, medical journals, physicians, advertising agencies and the pharmaceutical industry.

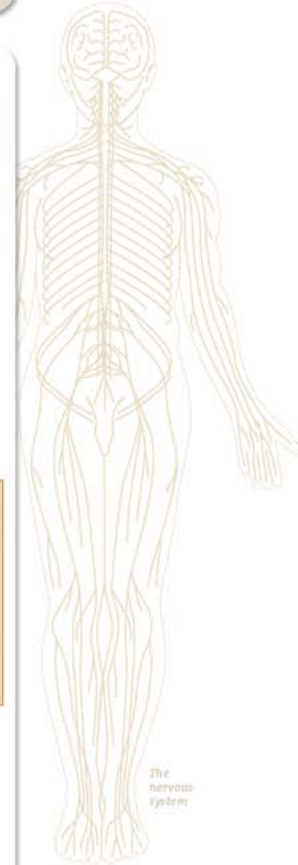
How to view stock illustrations

1. Click on the appropriate category on the left column on this page, and then browse through the thumbnails until you find what you are looking for.
2. Choose sub-category from the filter above the carousel of images then click on the image you want to see enlarged.
3. If you don't find what you are looking for, send me an e-mail and state your needs or call me.

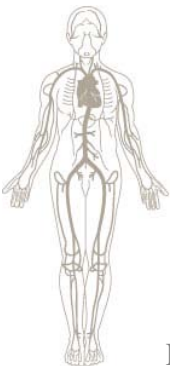
5 recent illustrations



relaxed and erigated uncircumcised

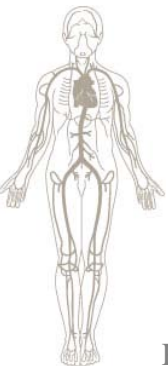


The nervous system



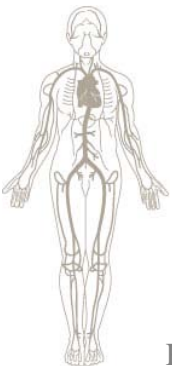
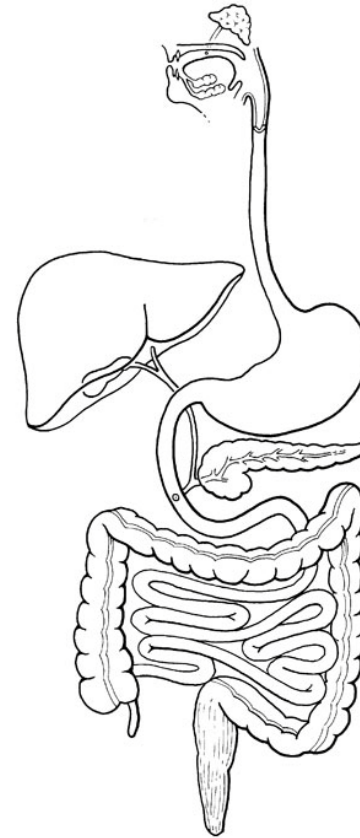
How do I approach a new drawing?

- Intended audience?
 - Medical background
 - Lay audience
 - adult
 - child



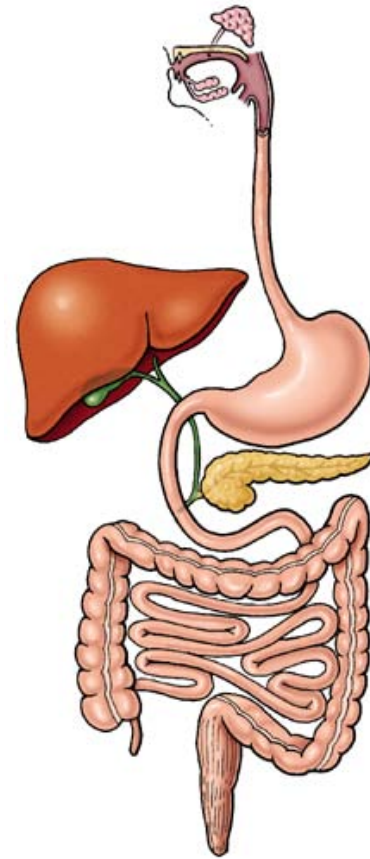
Choice of illustration style

- Schematic
 - Only line



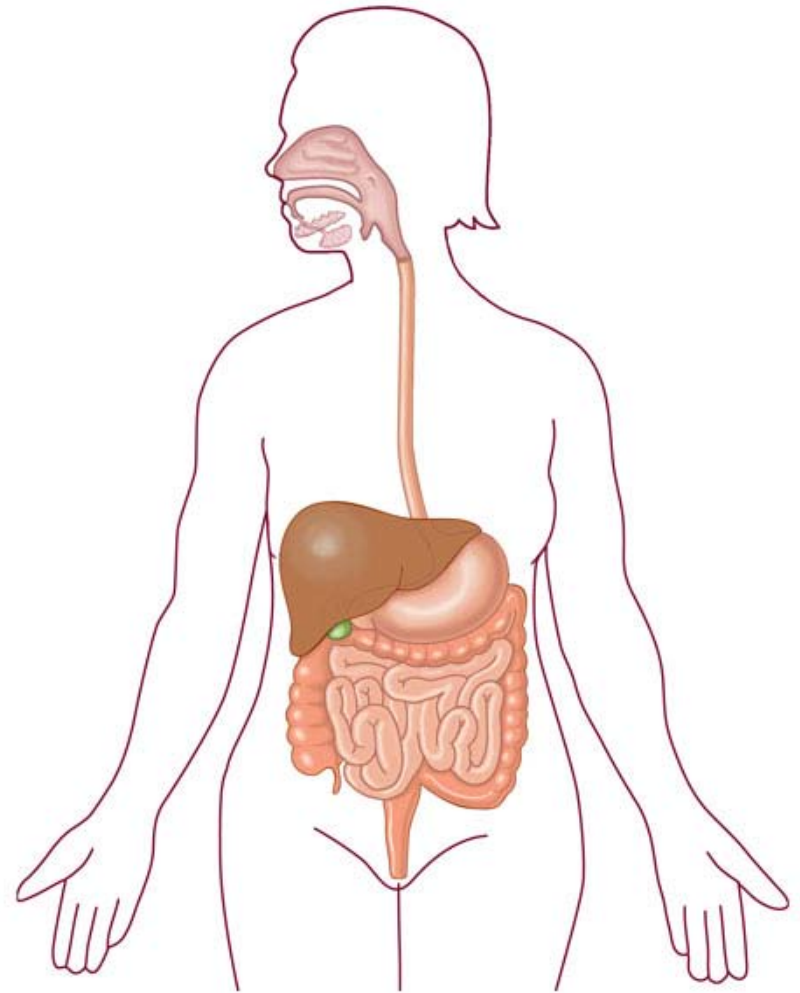
Choice of illustration style

- Schematic
 - With color



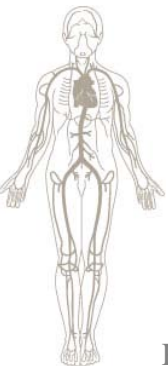
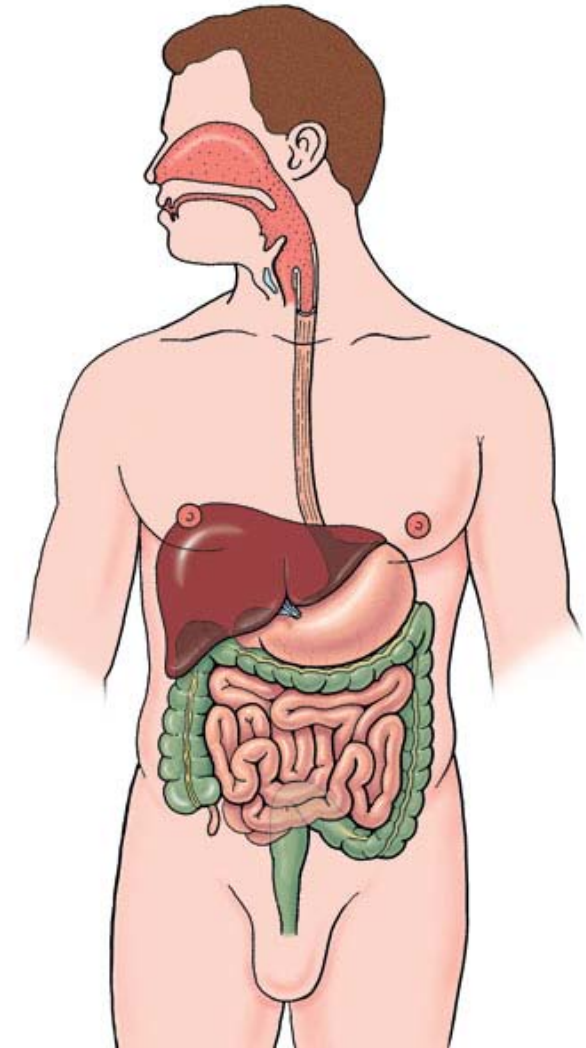
Choice of illustration style

- Anatomically correct and with only a body contour



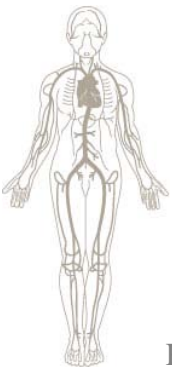
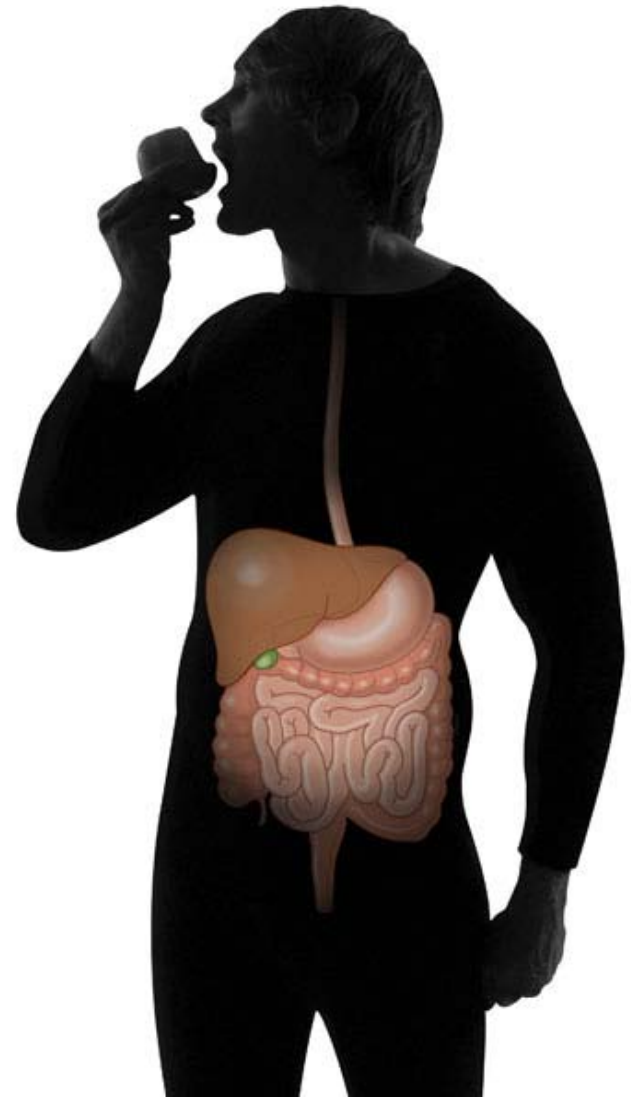
Choice of illustration style

- Anatomically correct and fully rendered

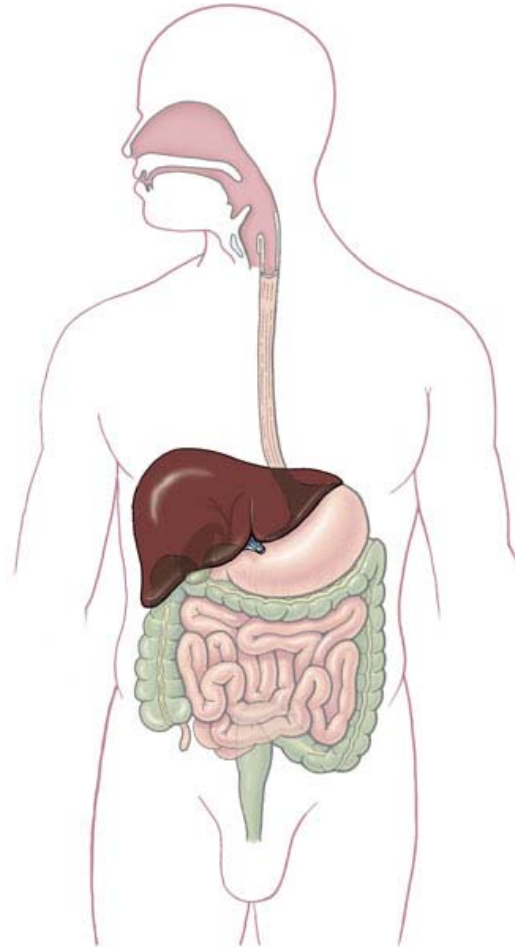


Choice of illustration style

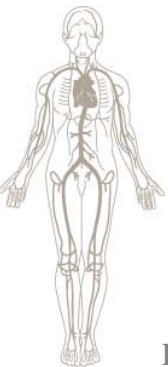
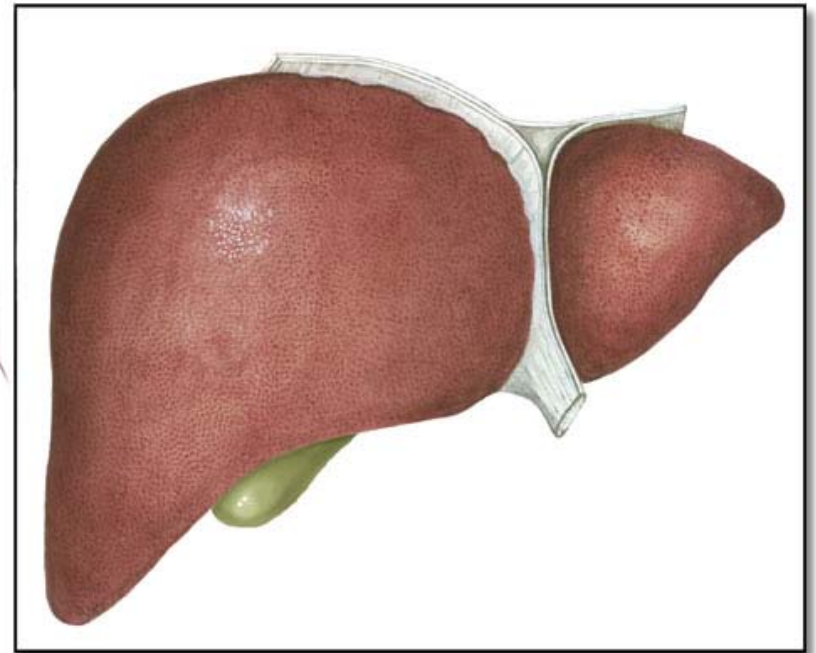
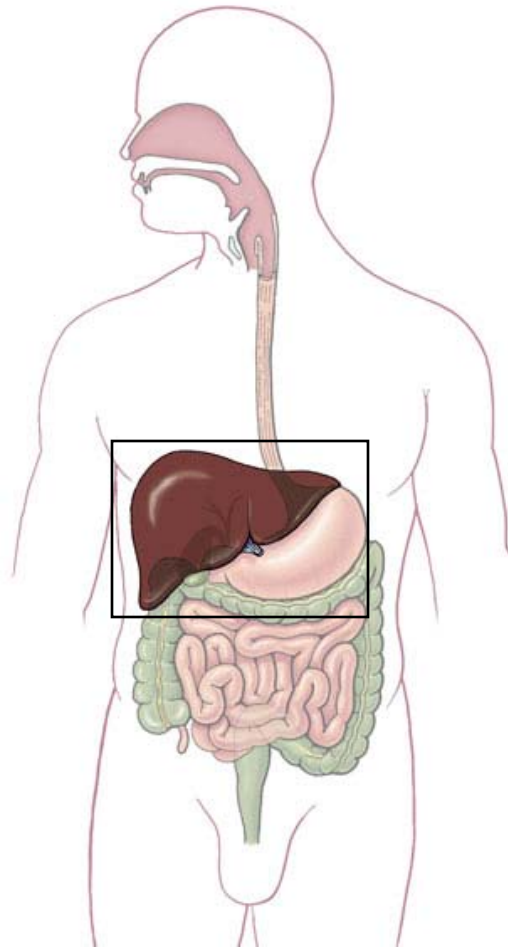
- Create a more dramatic atmosphere



Where to focus?

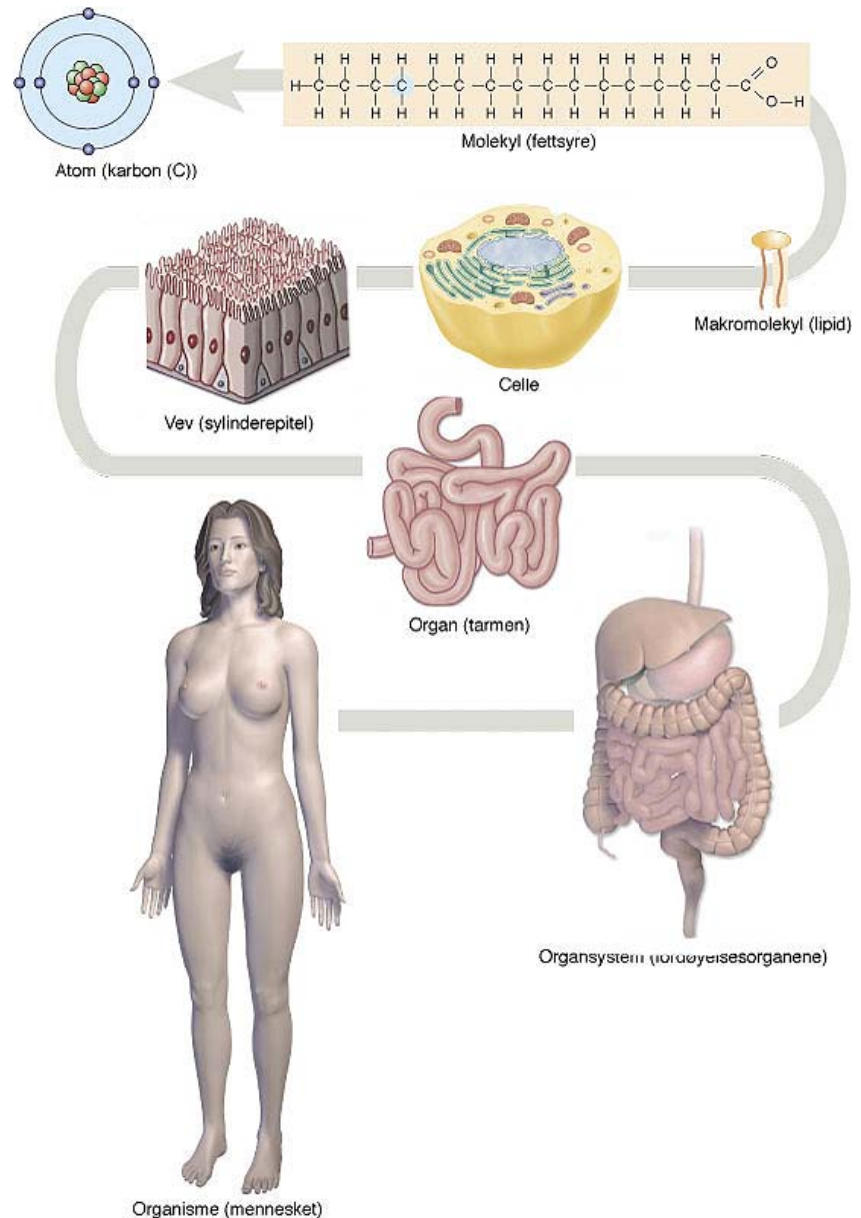


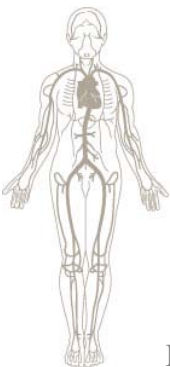
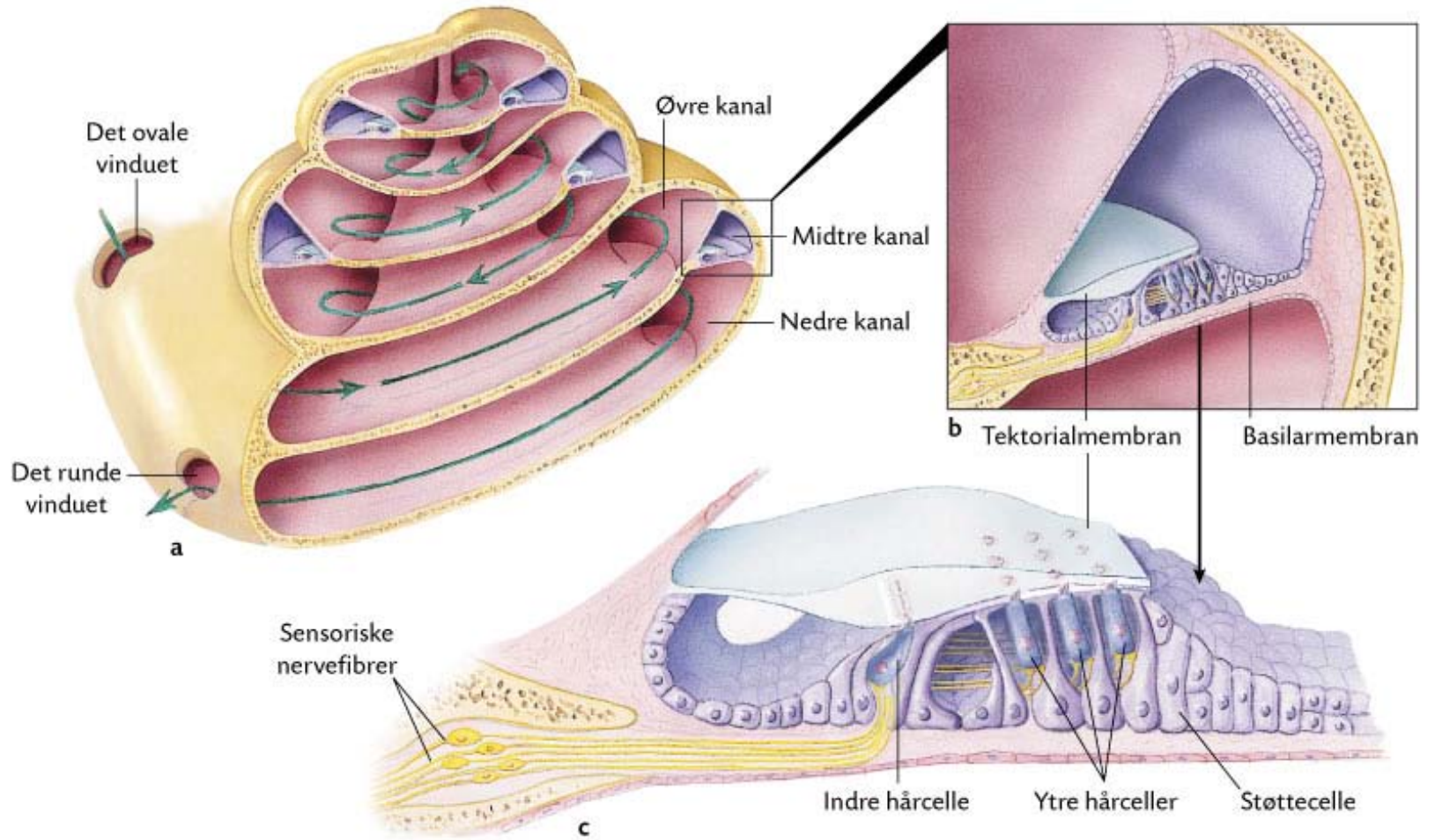
Where to focus?

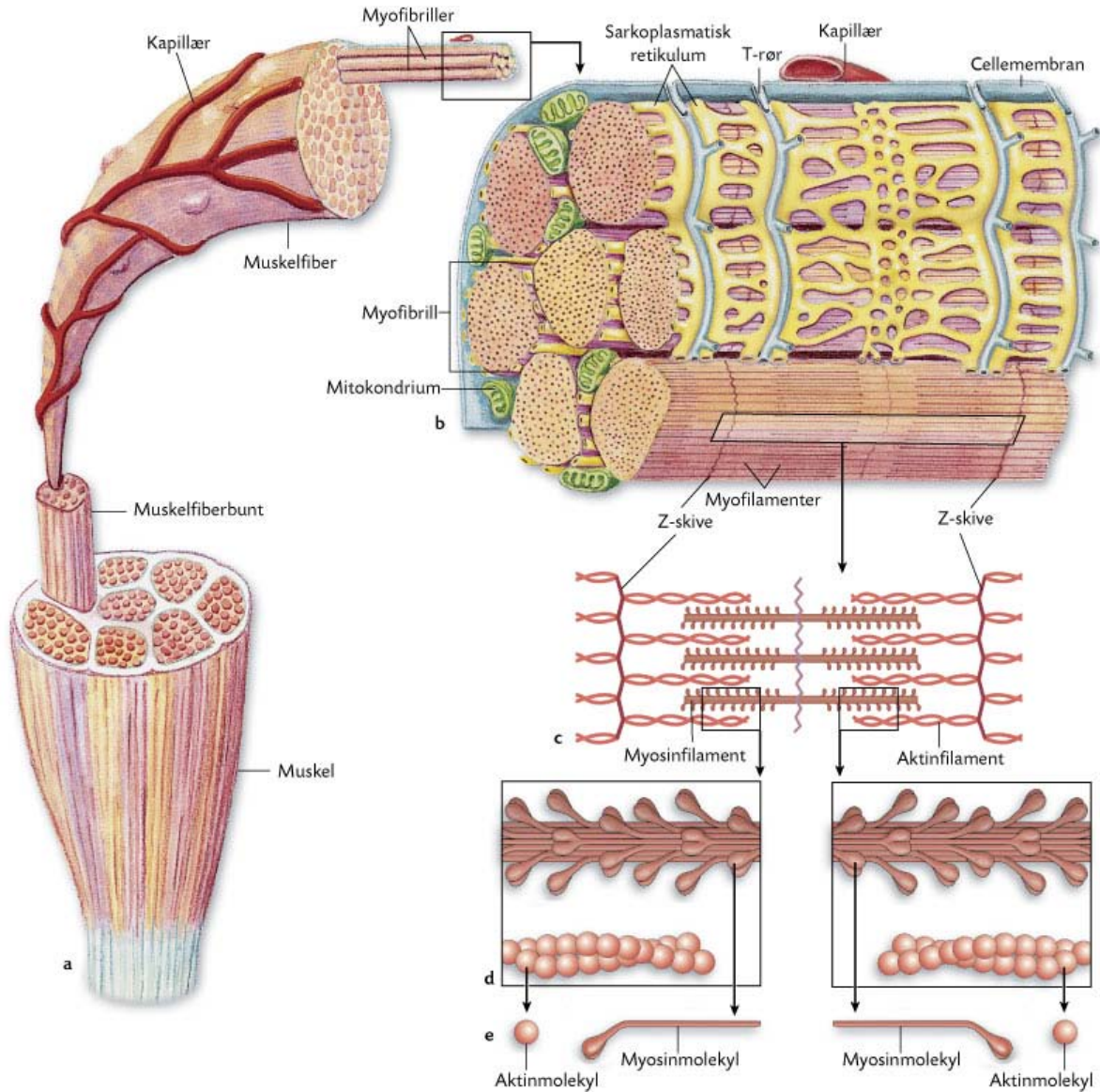


Orientation

- From macro to micro
- Leading the reader deeper and deeper

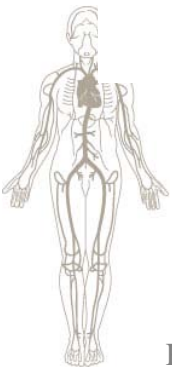
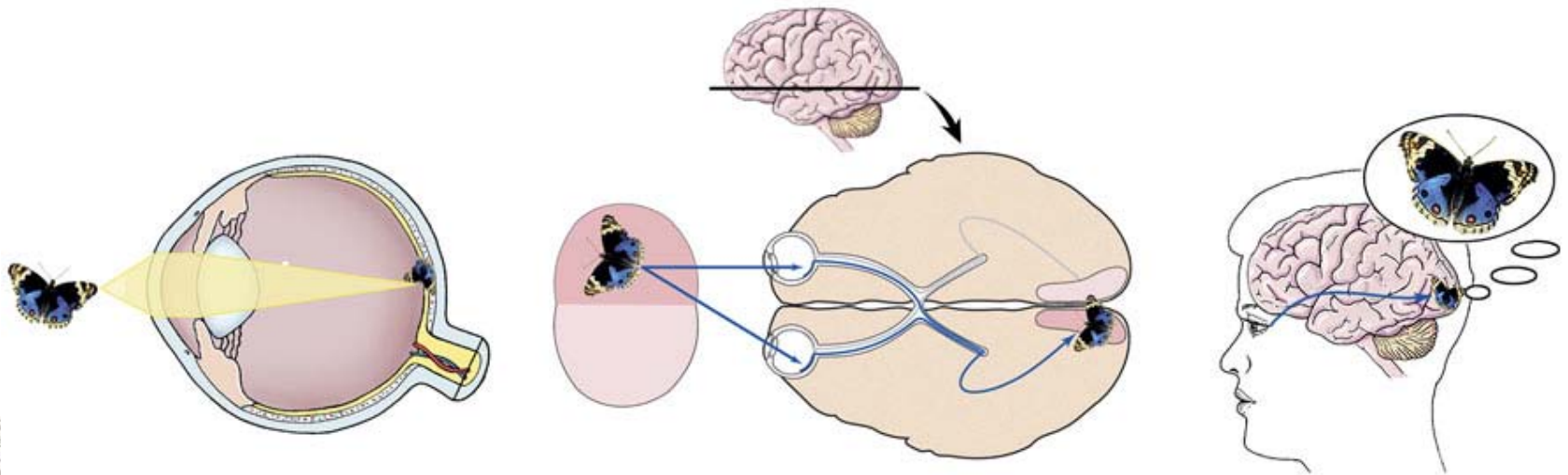




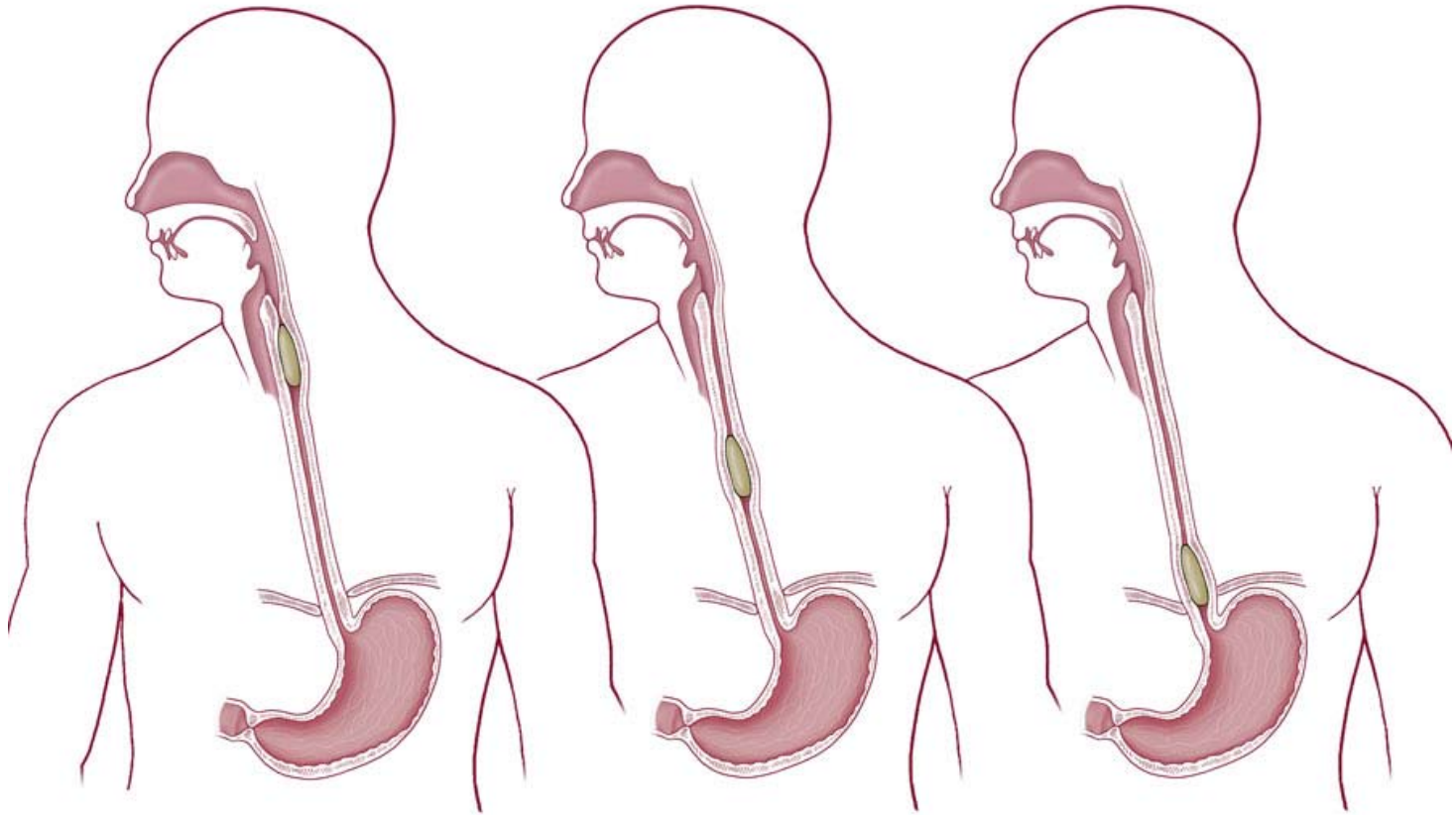


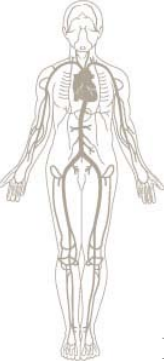
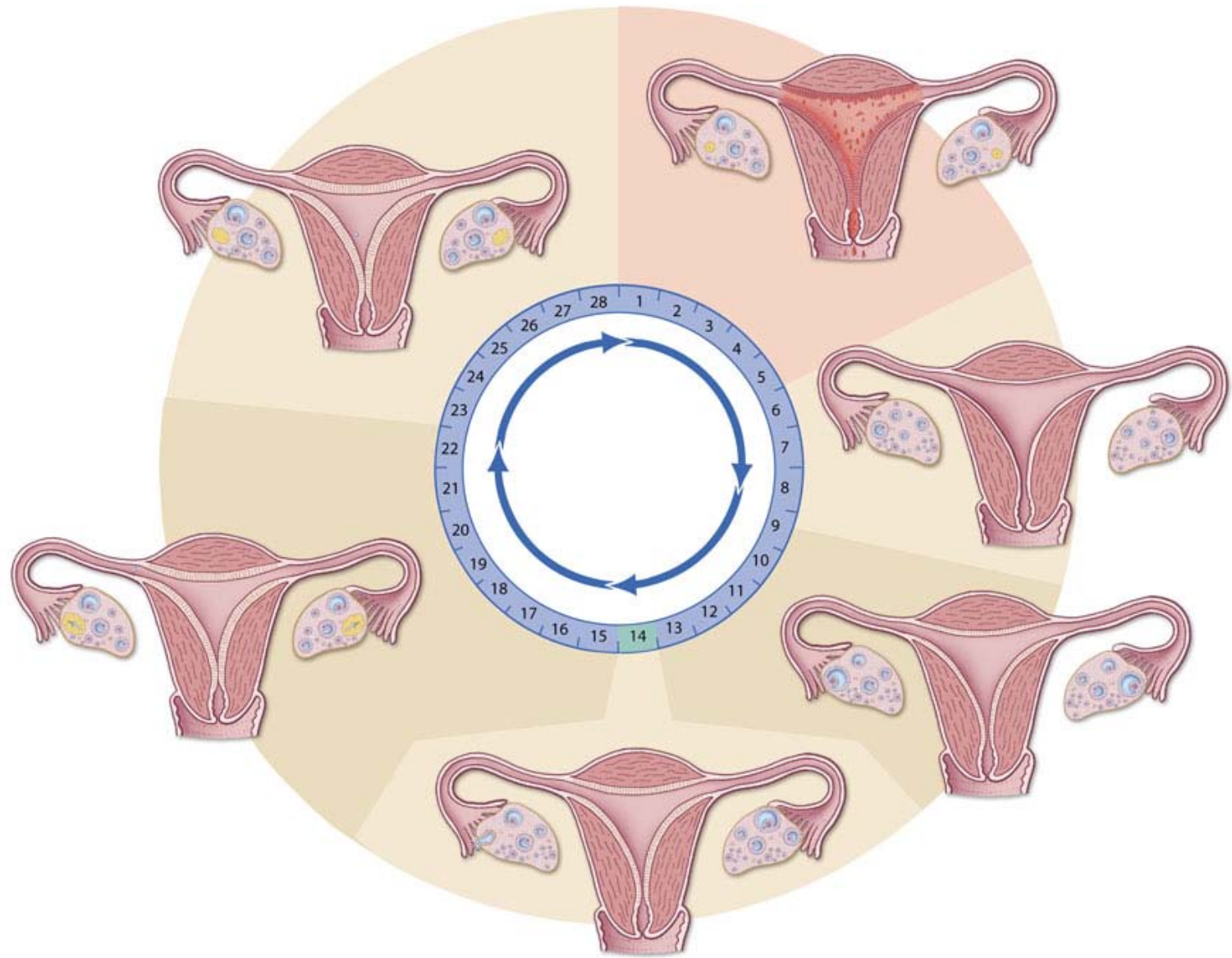
Serial technique

- Several images put together to convey a story



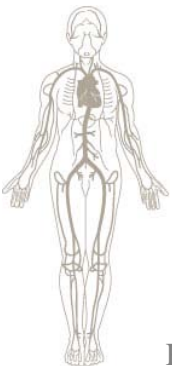
Serial technique



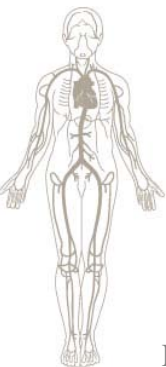


Photorealism

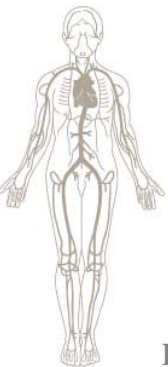
- A photograph documents reality
- It gives authenticity which an illustration cannot
- But a photograph shows only what the eye can see and captures a precise moment
 - It does not explain the relationship, concept and the effect of what we see



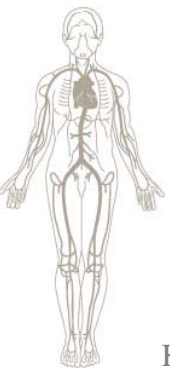
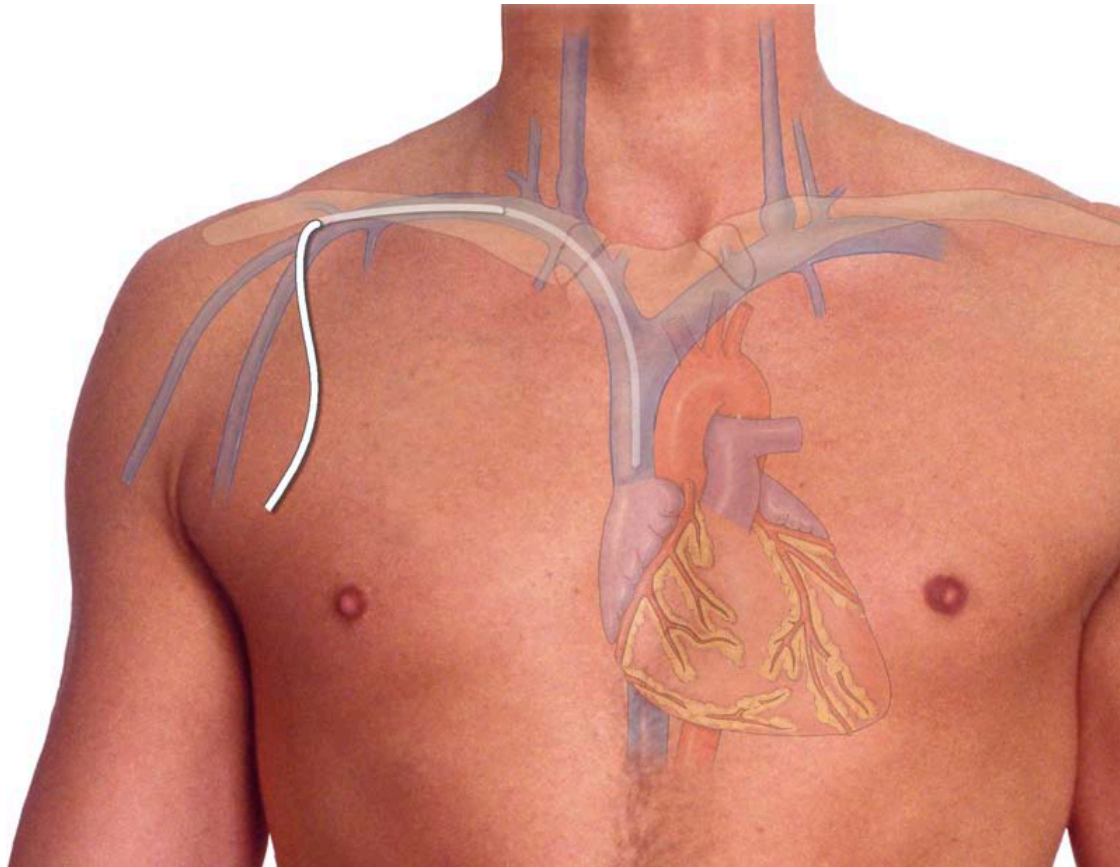
Enhancement by photorealism



Central vein catheter

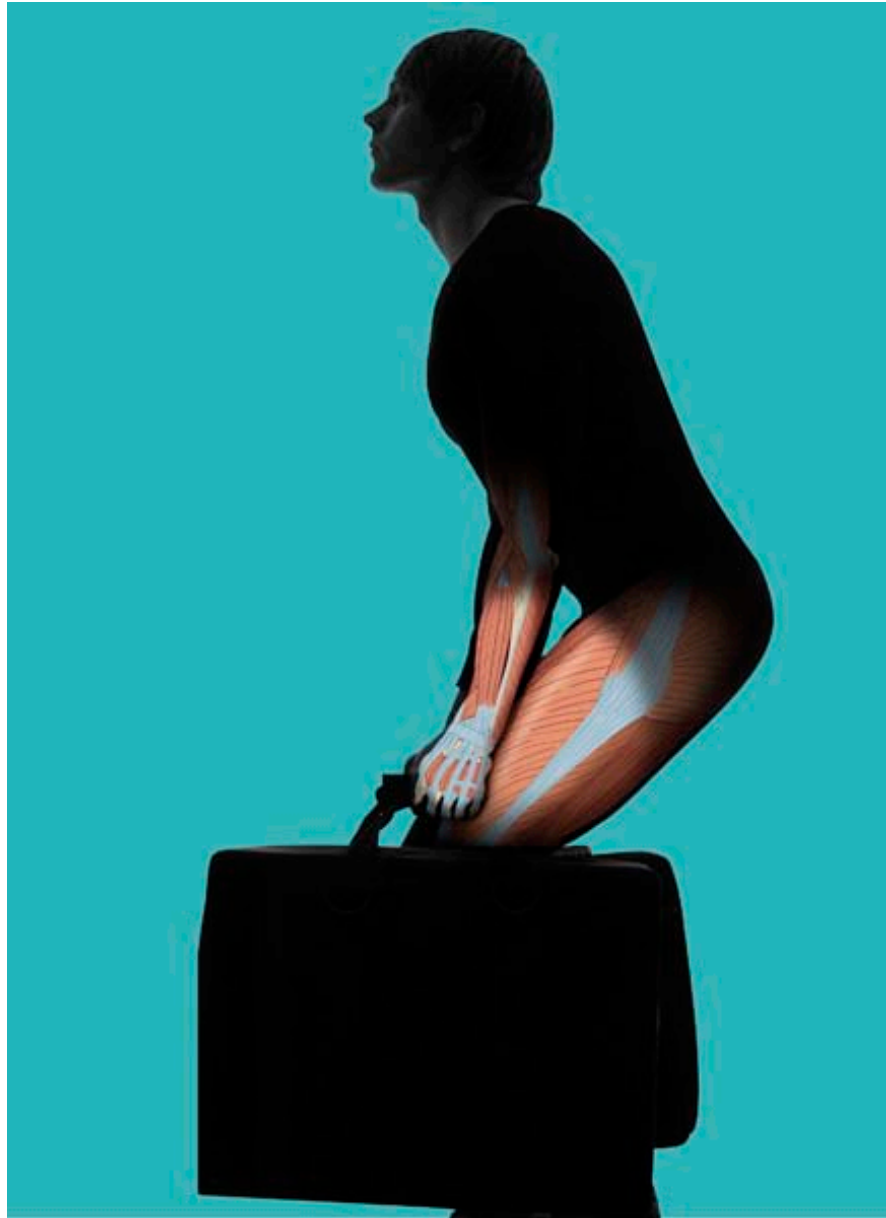


Central vein catheter



Mouth-to-mouth resusitaton





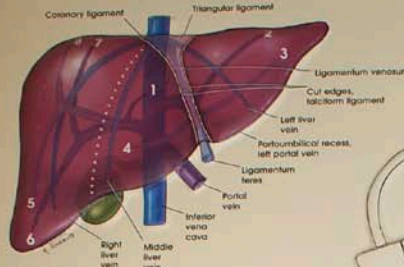
CT, ultrasound and MRI scans



THE LIVER SEGMENTS

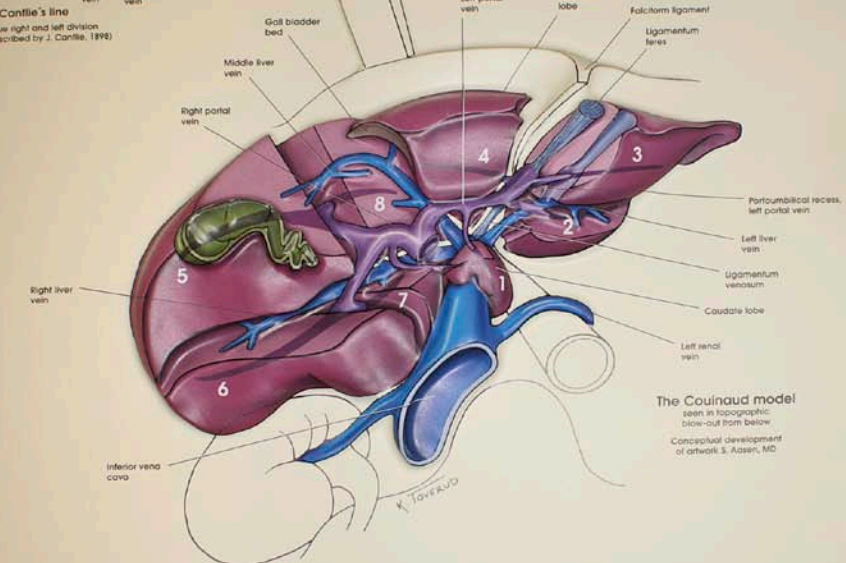
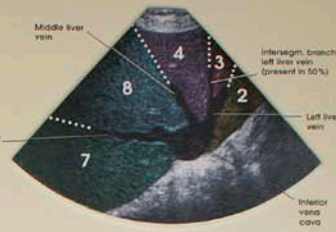
Defined by the portal branching and the liver veins

Interdigitation between portal branches and liver veins, frontal see-through



* Cantlie's line
(The right and left division described by J. Cantlie, 1896)

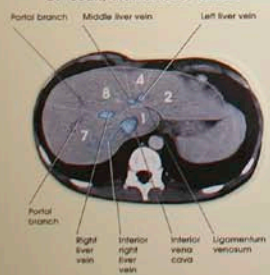
Transverse ultrasound scan, segment borders defined by the liver veins



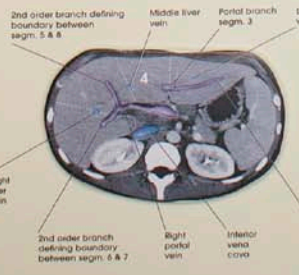
The Couinaud model
seen in topographic, blow-out from below
Conceptual development of artwork S. Aasen, MD

1989

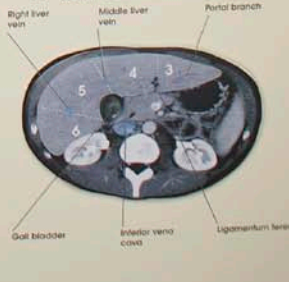
CT -scan; cranial level -above hilum

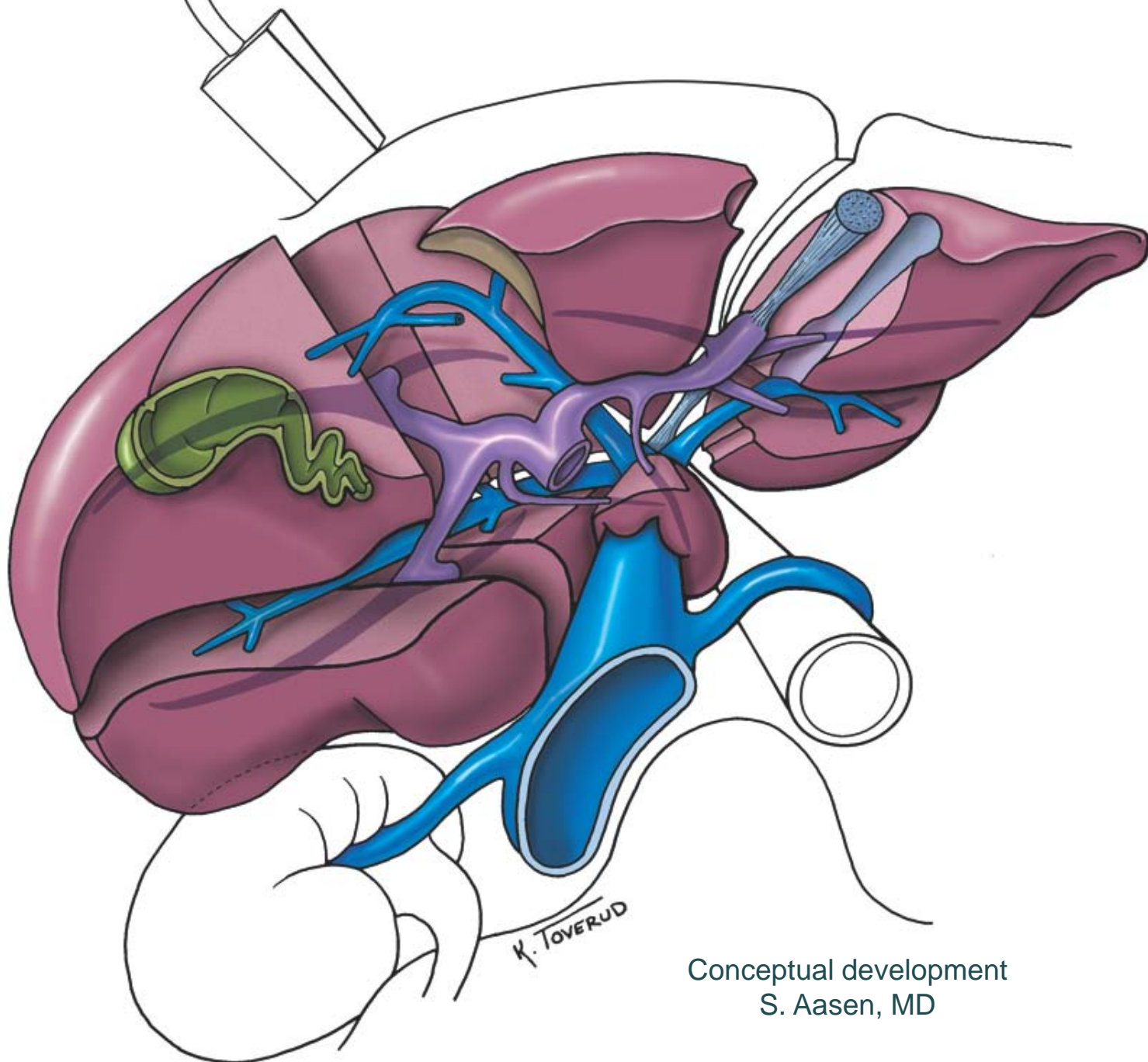


CT -scan; hilar level



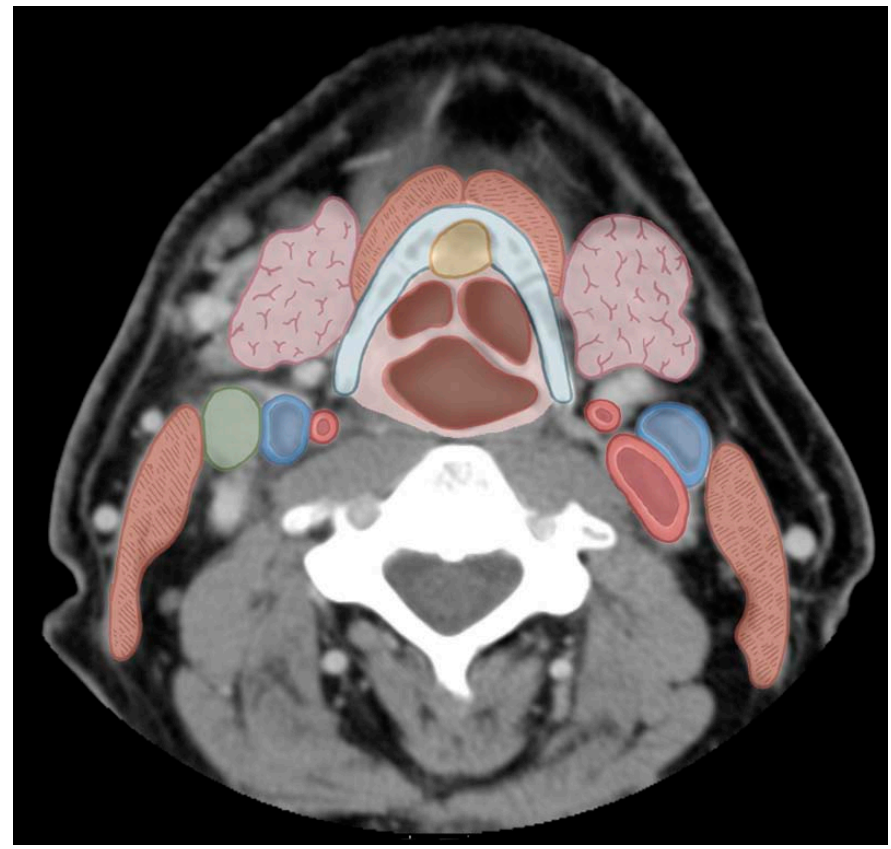
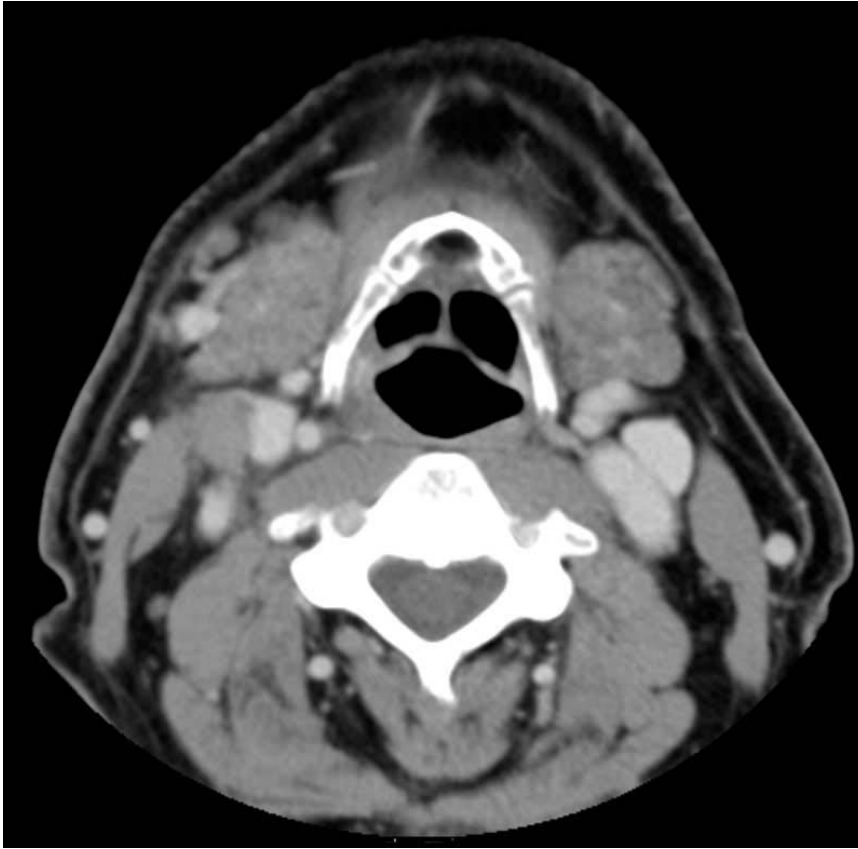
CT -scan; caudal level, below hilum



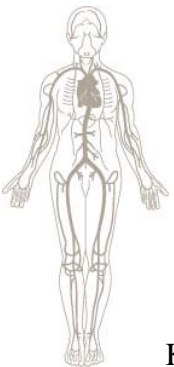


Conceptual development
S. Aasen, MD



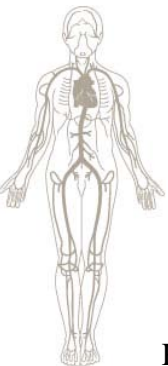
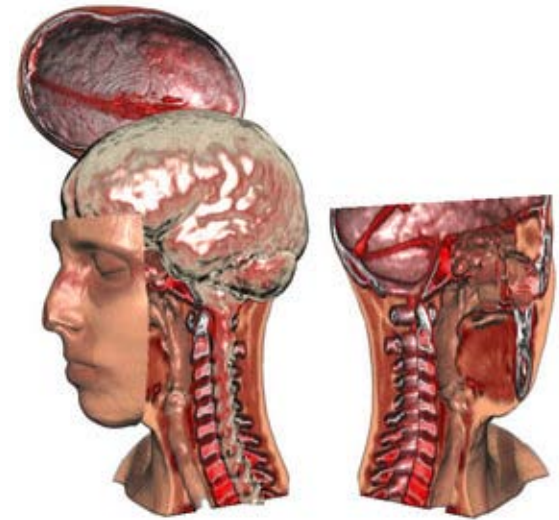


2004



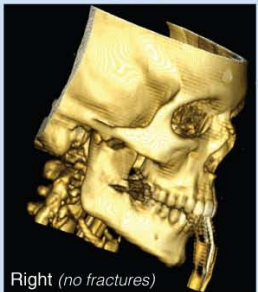
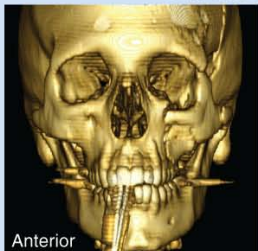
Volumetric rendering

- Great reference
- Time-saver
- Nontraditional views
- Photorealism



Jessica Doe - Skull Fractures

Maxillofacial CT 9/4/04



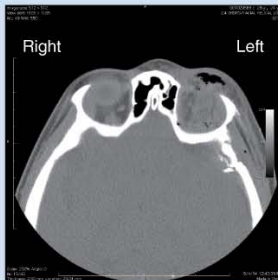
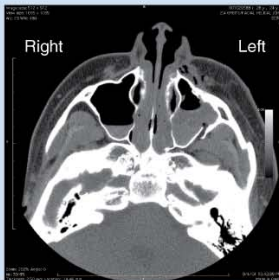
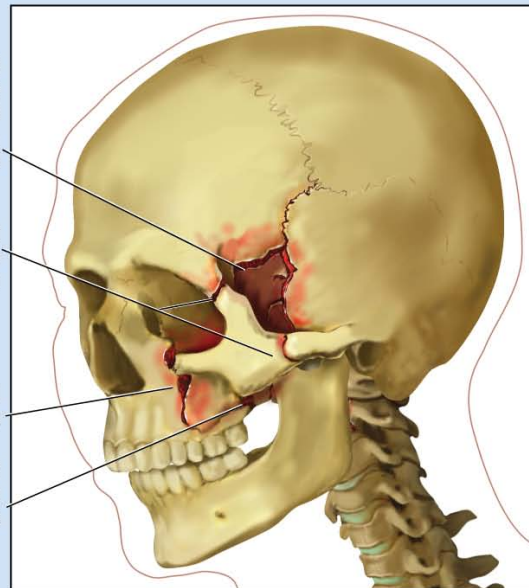
3D Reconstruction

Depressed comminuted fractures of the temporal and sphenoid bones, lateral orbit

Fractures of the left zygomaticofrontal suture and zygomatic arch

Fractures of the orbital floor and maxilla

Fractures of the pterygoid plate and base of the cranial fossa



Axial Slices

Fractures of the maxilla

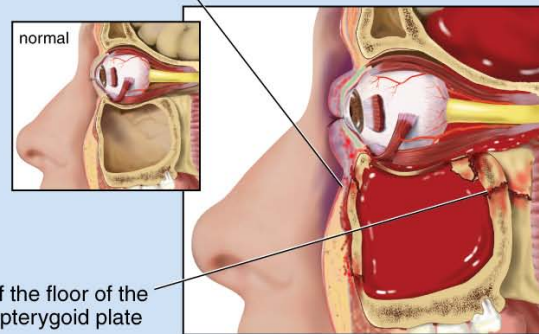
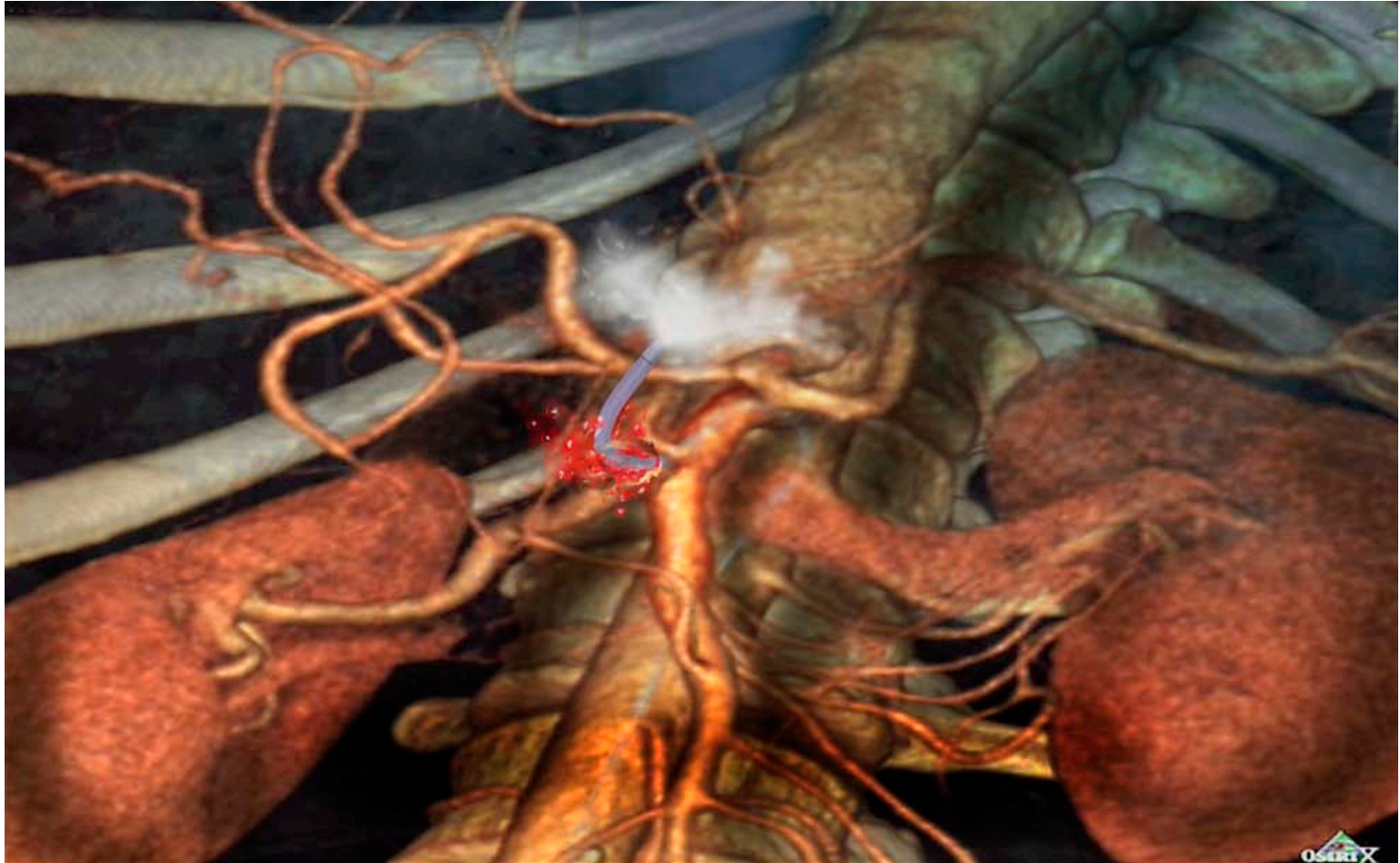


Illustration by Pat Tomas CMI



Osirix and artist combined



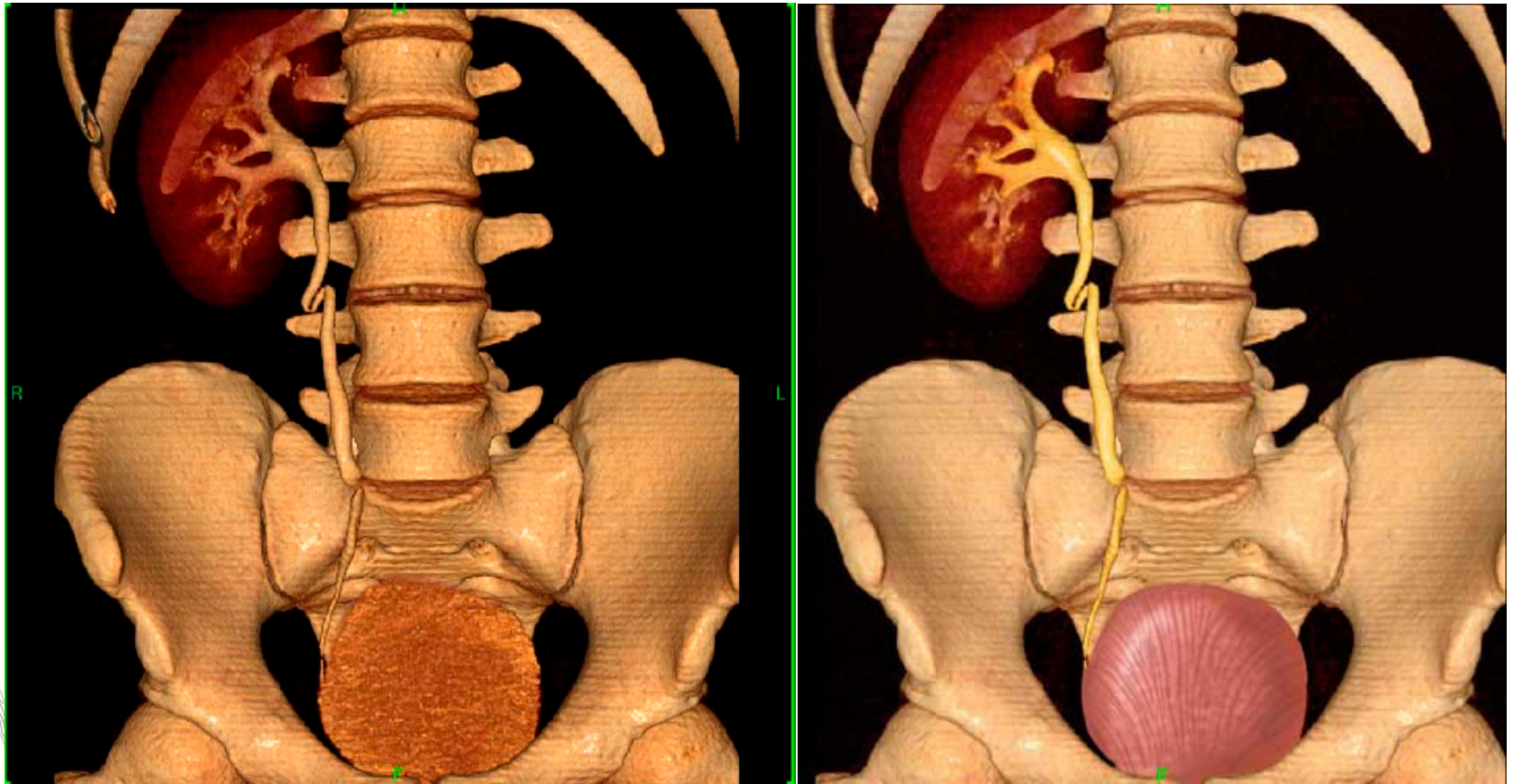
OsiriX

Illustration by Edmond Alexander CMI

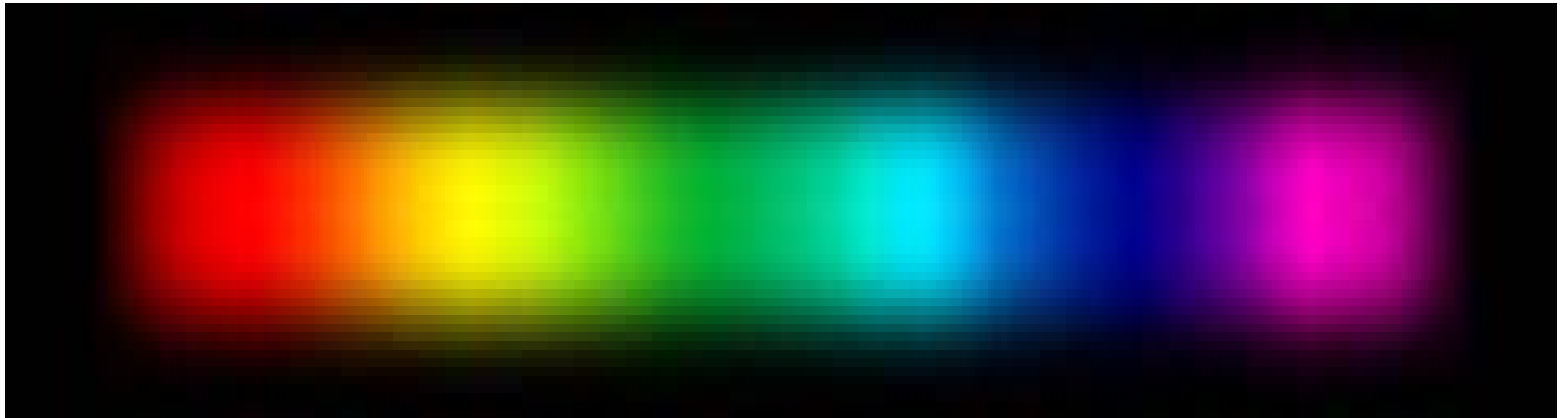
Kari C. Toverud MS CMI IllustraVis09 Bergen, Norway



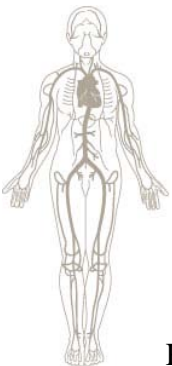
Color enhancement



Use of color in medical illustration

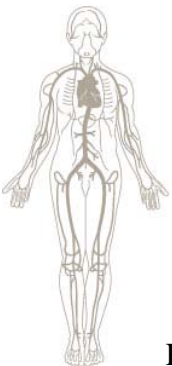
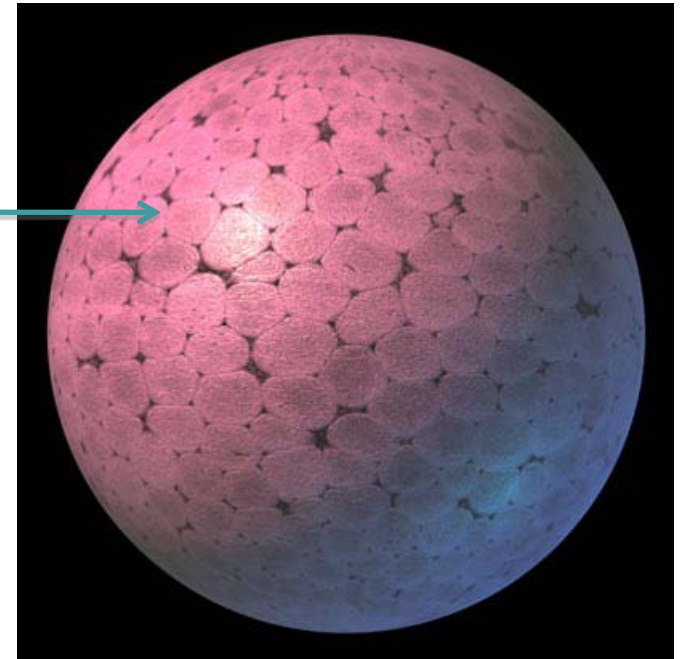


Images and text by Bill Andrews CMI
Dept. of Medical Illustration
Medical College of Georgia



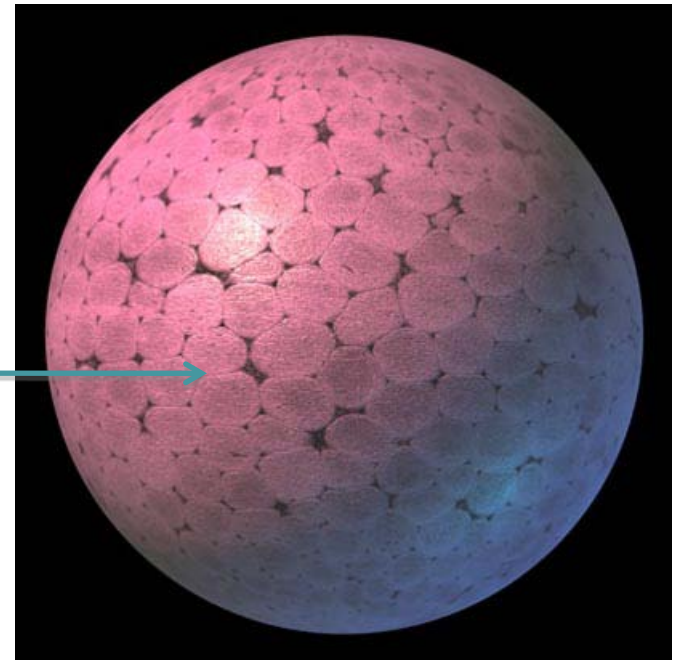
Forms in Light

- Color exists where the light falls



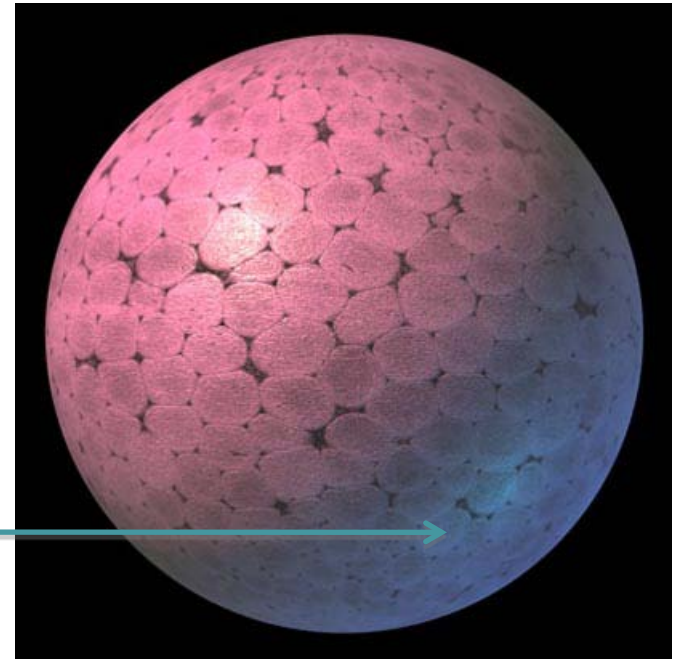
Color the halftone area

- The area of the purest, most intense local color occurs in the halftone area of a form

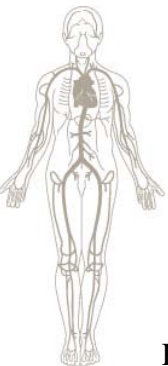
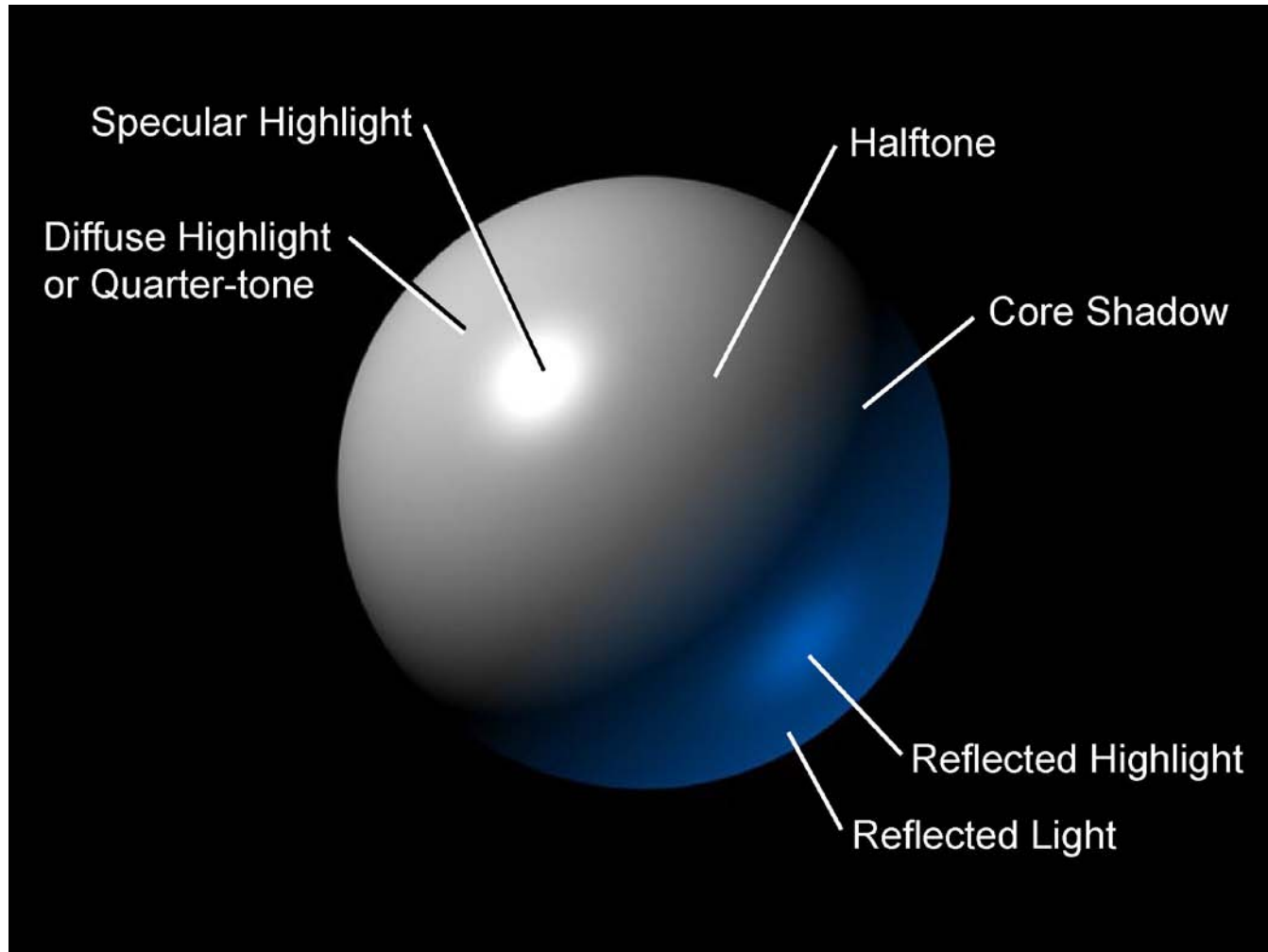


Forms in Light

- Reflected light takes on the local color of the object from which it receives the reflection



Basic Form Lighting



Directing light source

- Medical illustrators are taught to use upper left-hand lighting as standard



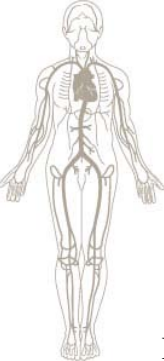
Illustration by Tod Buck CMI





Illustration by Joan M. Beck CMI

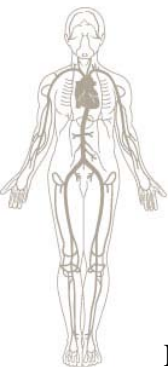
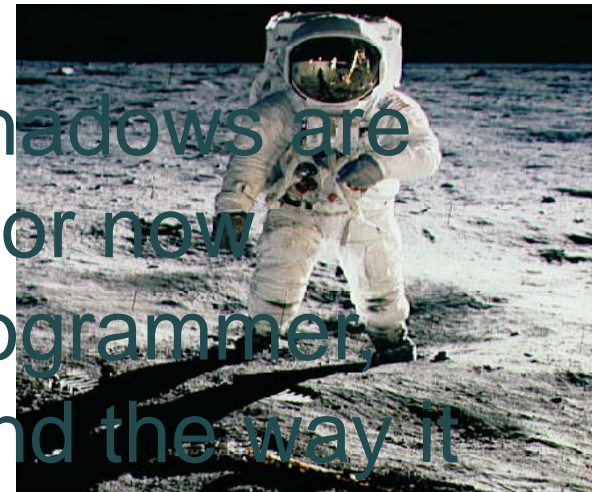
Kari C. Toverud MS CMI IlustraVis09 Bergen, Norway



Shadows are never black

- The only place where the shadows are totally black is on the moon and in space, where there is very little atmosphere

3D computer generated shadows are often black until the artist, or now hopefully the computer programmer takes control of the light and the way it interacts with object surfaces



Light-filled Shadows

- Because of the influence of ambient light and reflected light, shadows can and **do** have color

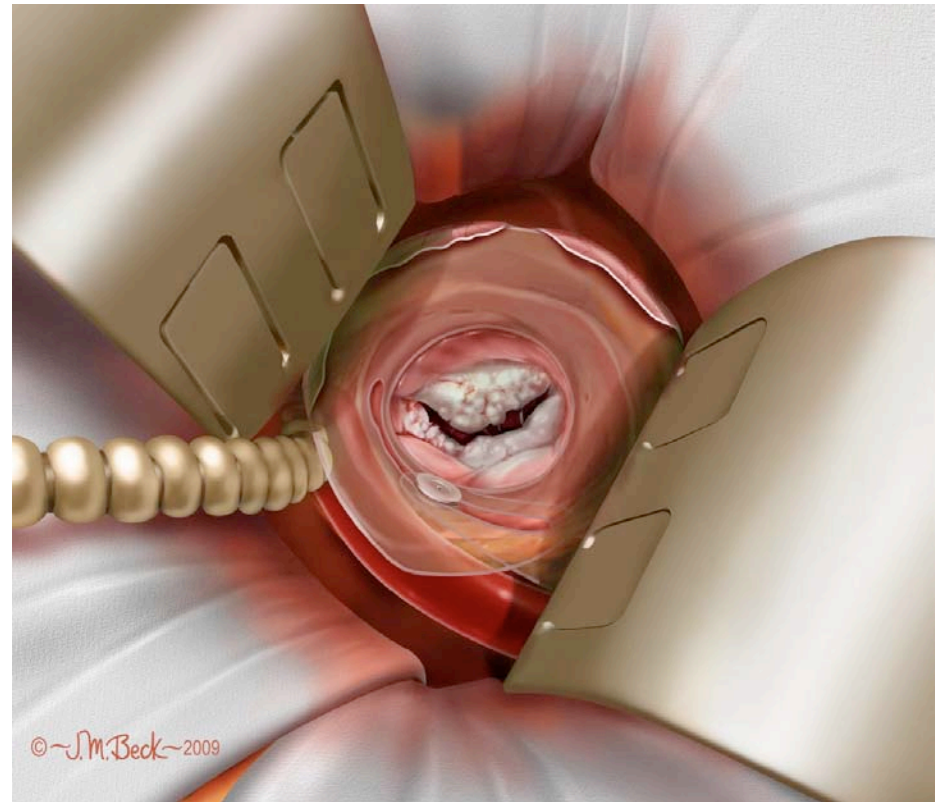
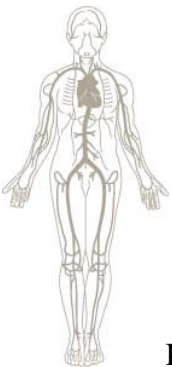
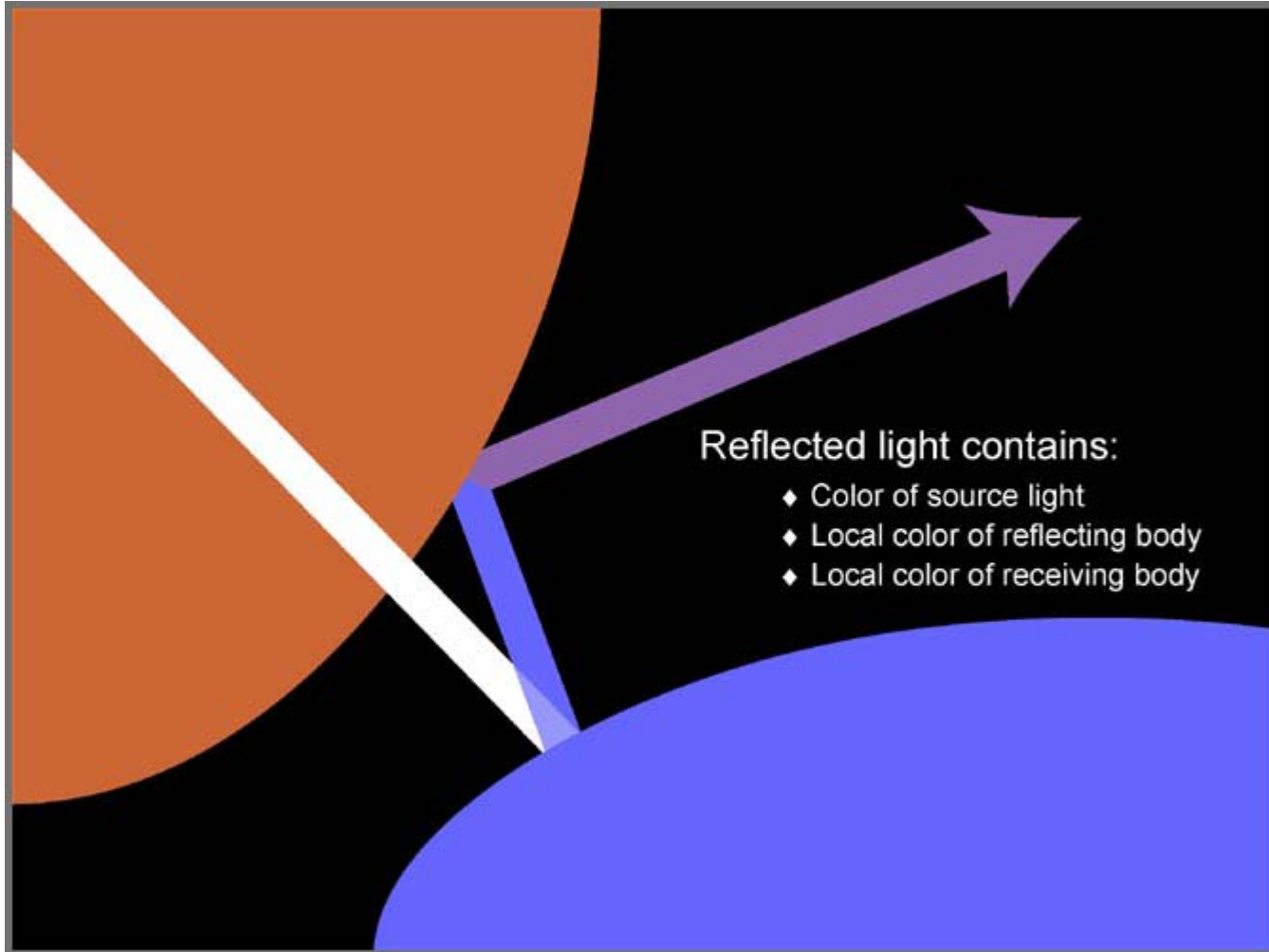


Illustration by Joan M. Beck CMI



Reflected Light



Reflected Light



Illustration by Tod Buck CMI



Tusen takk!
www.karitoverud.com

