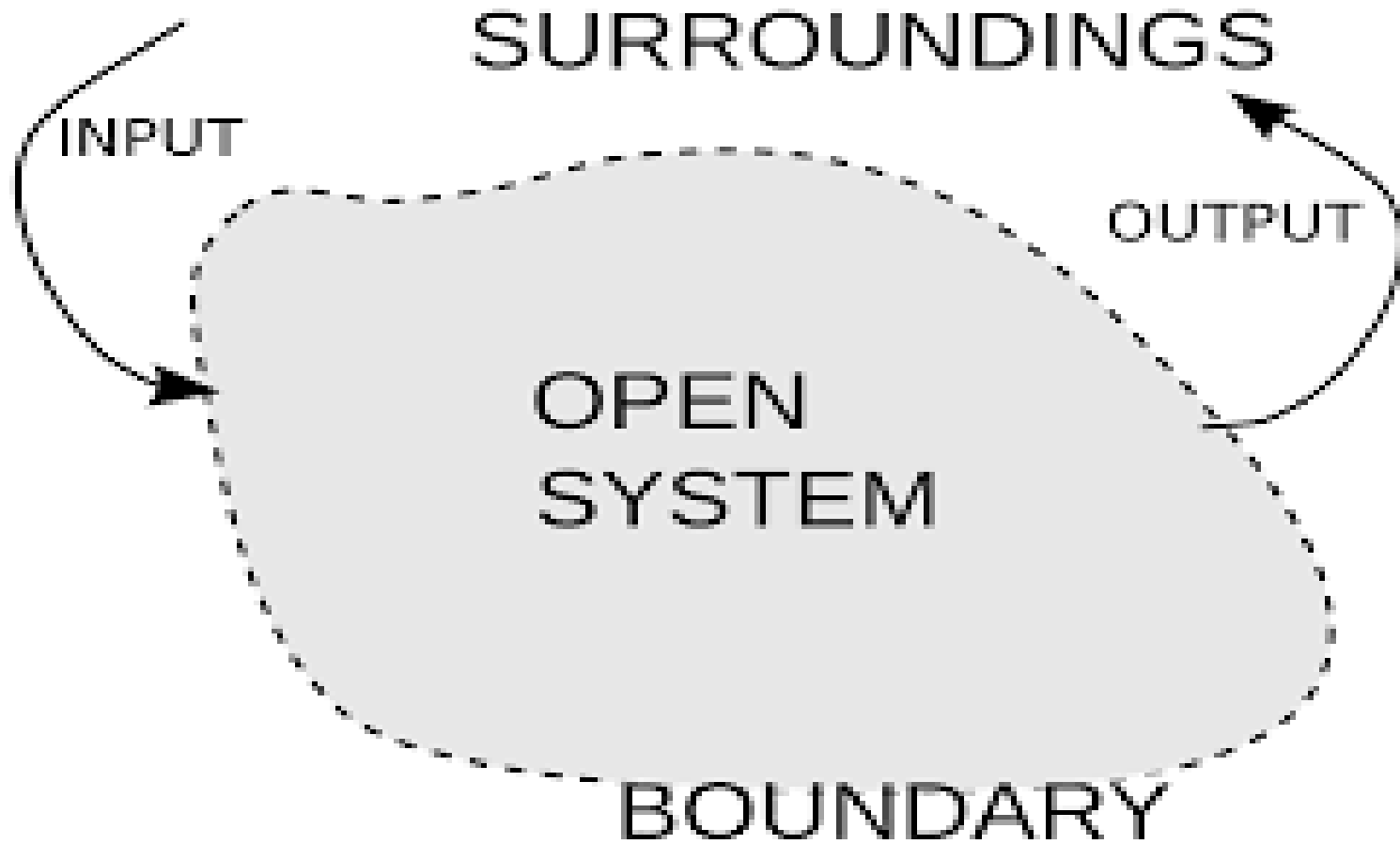


Lecture-3 Body as a system (Part-2)

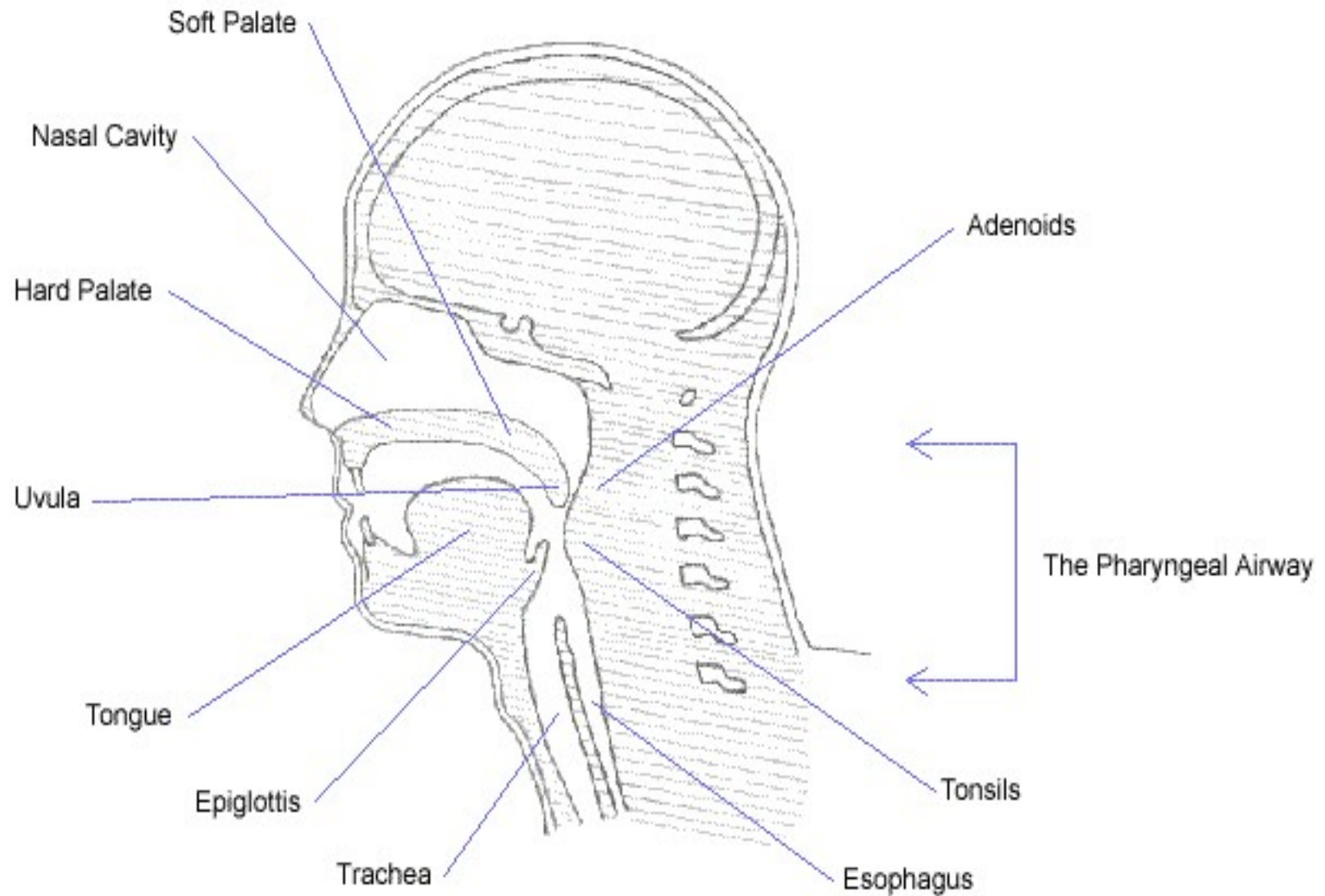
Dr S M Patel

System has boundary

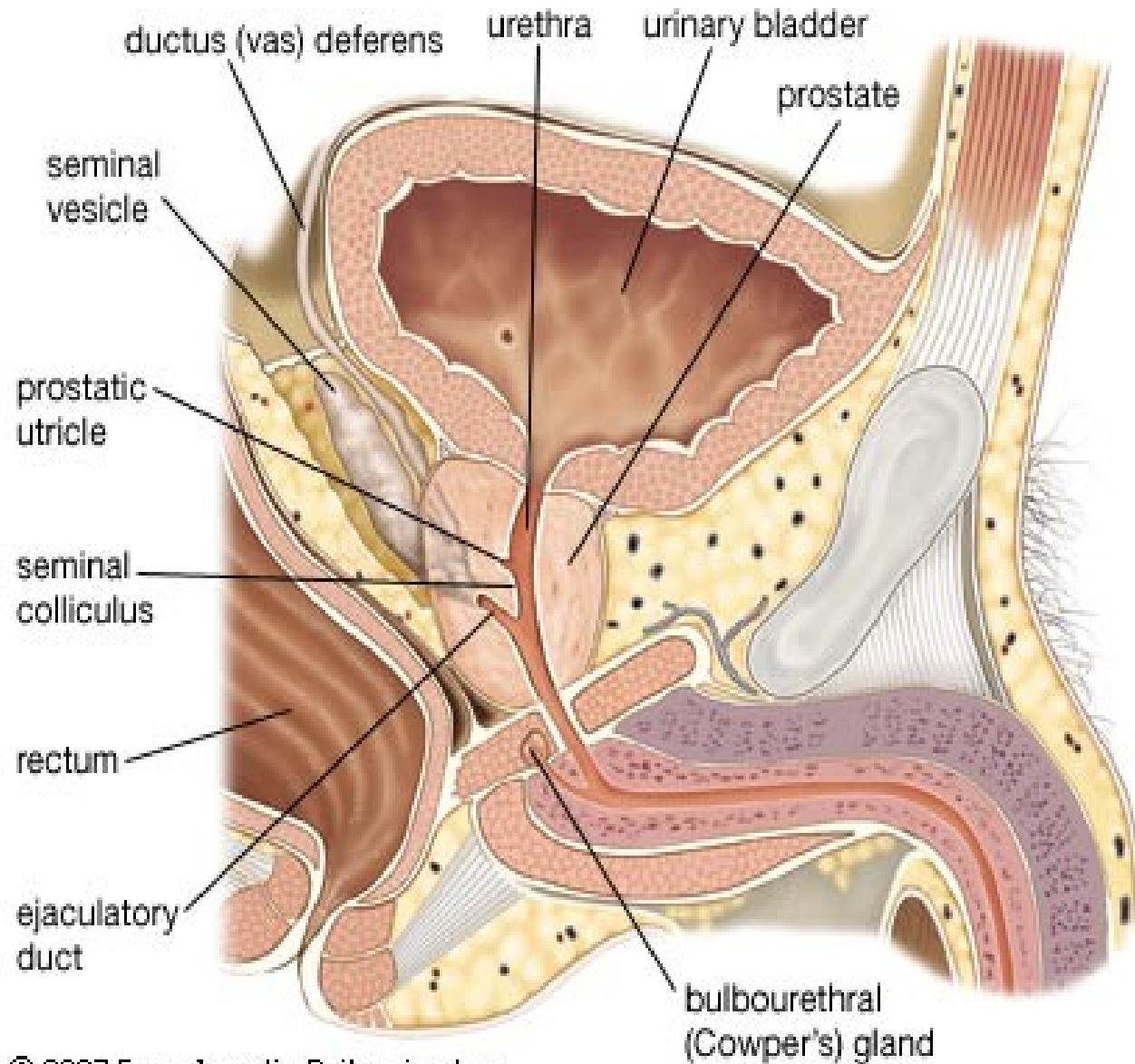


Body has boundary

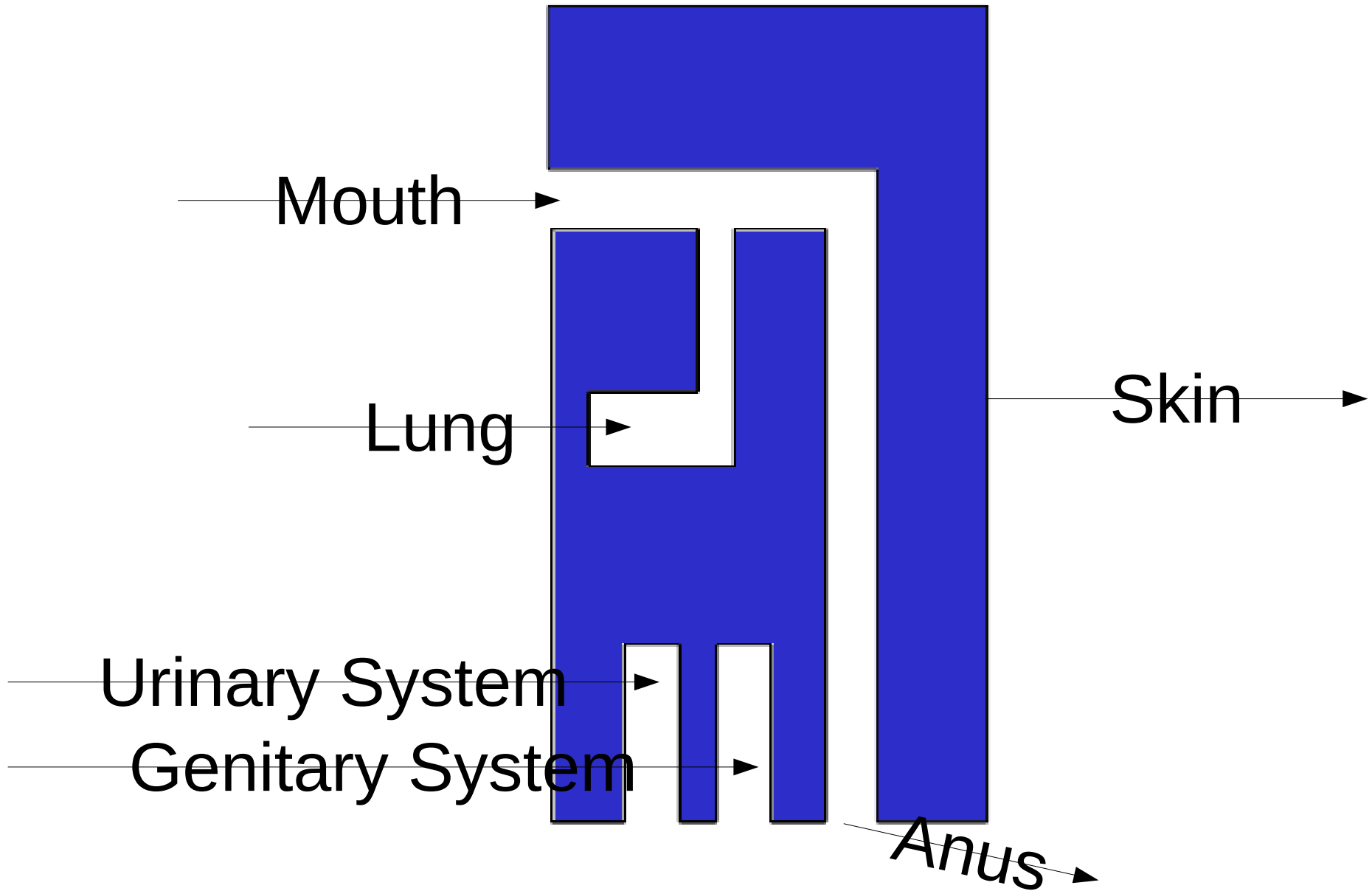
Body has boundary



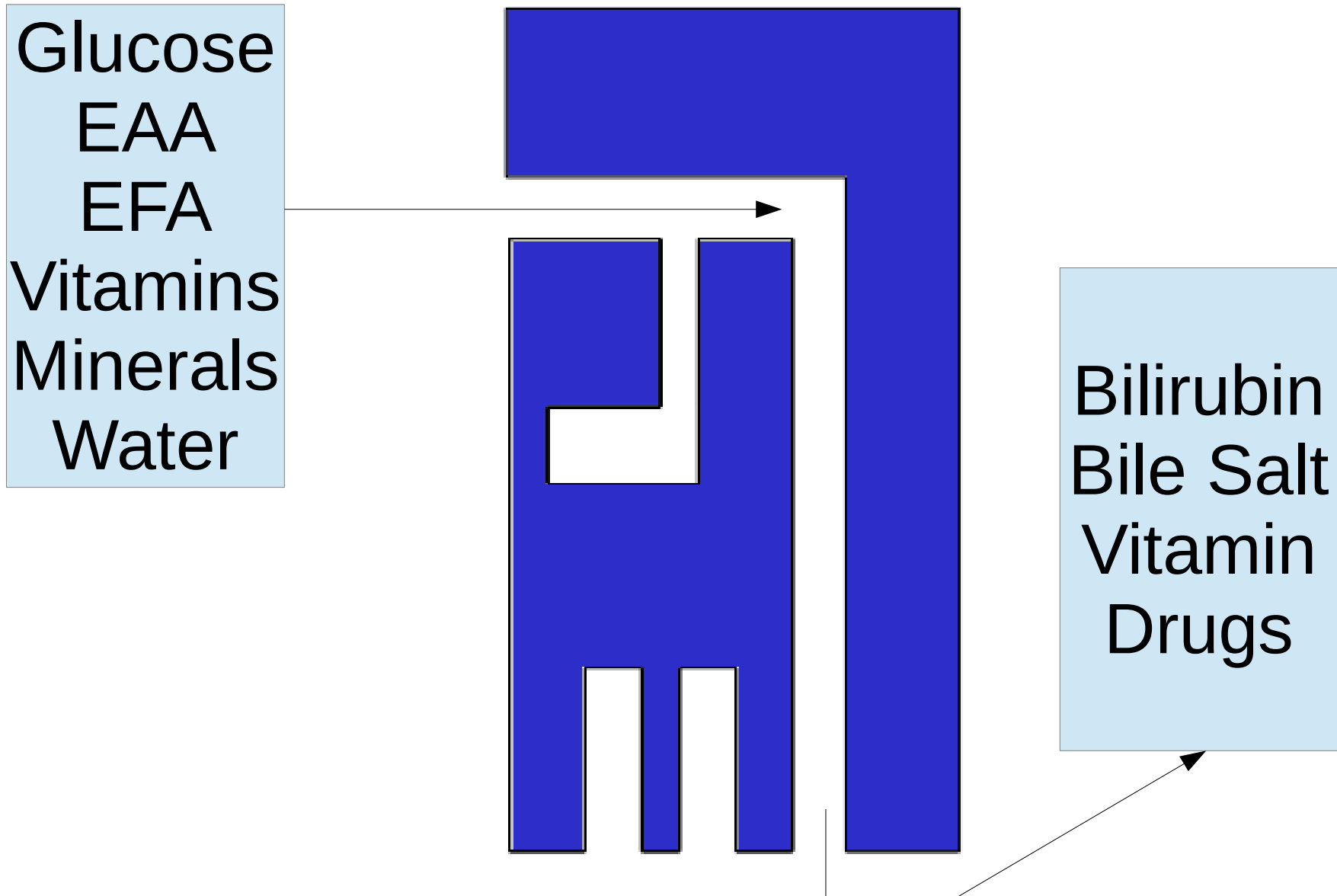
Body has boundary



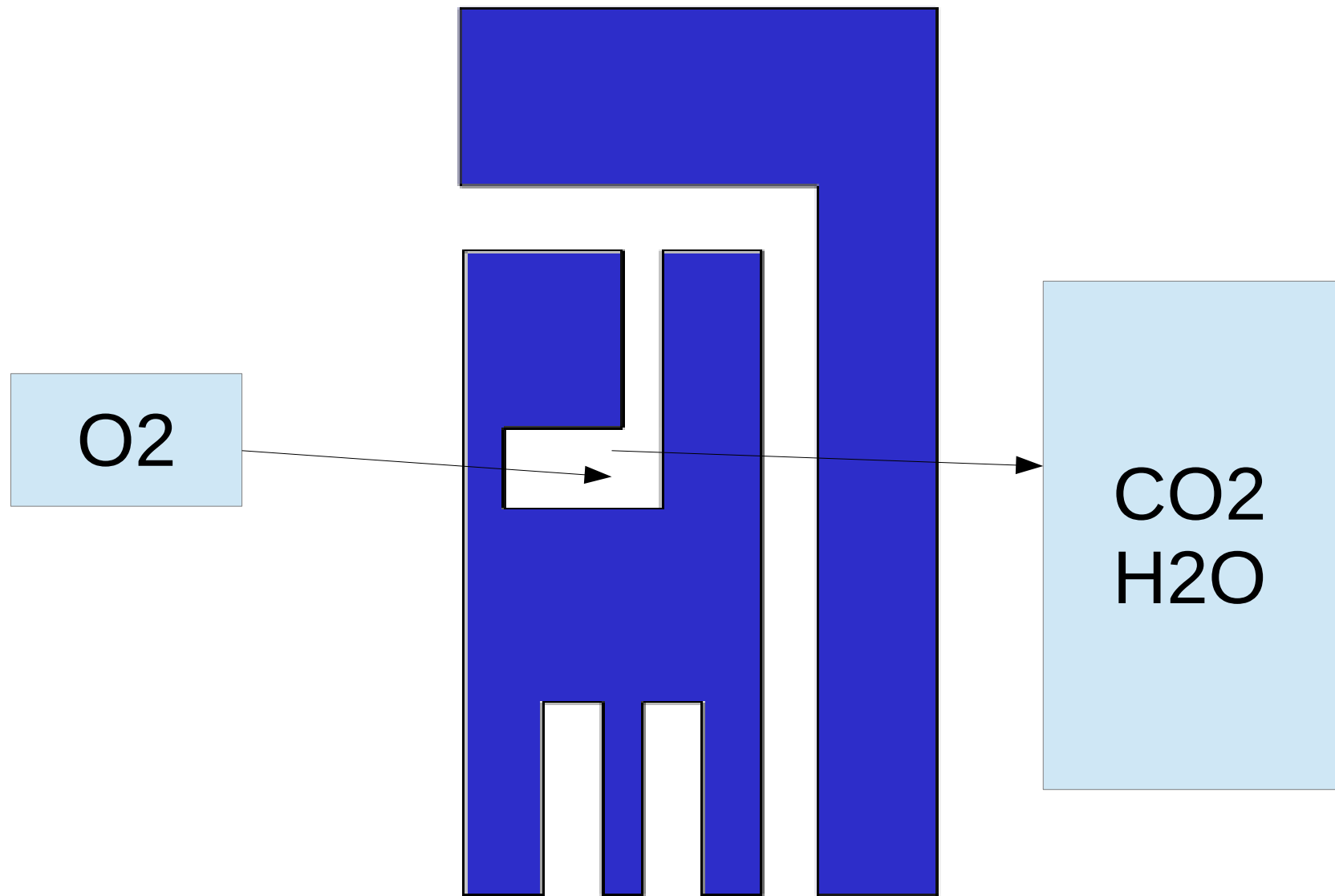
Body has boundary



Molecules crosses body boundary

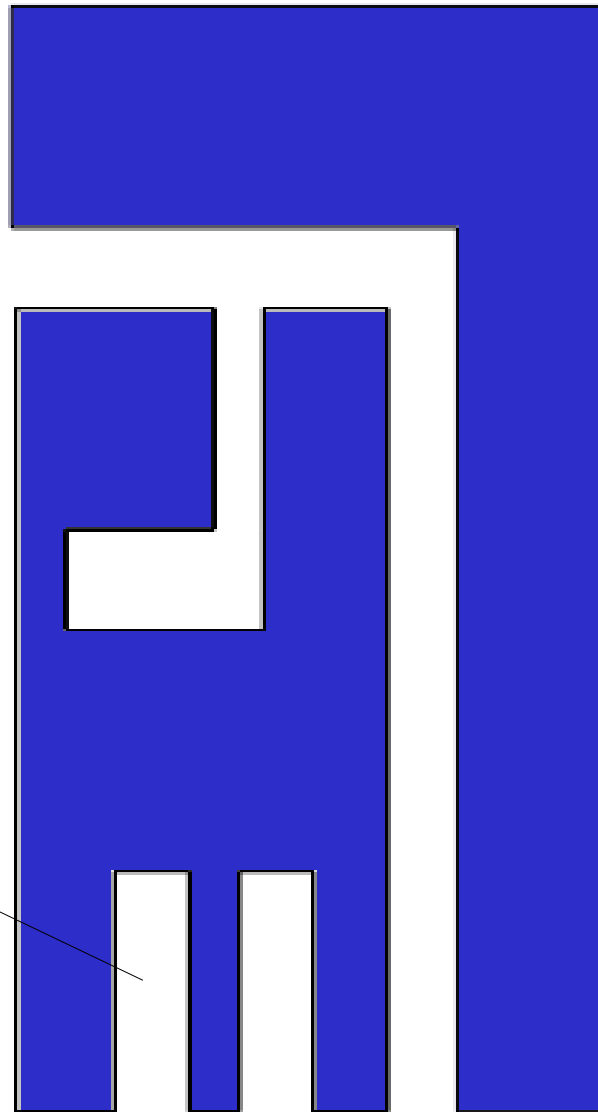


Molecules crosses body boundary



Molecules crosses body boundary

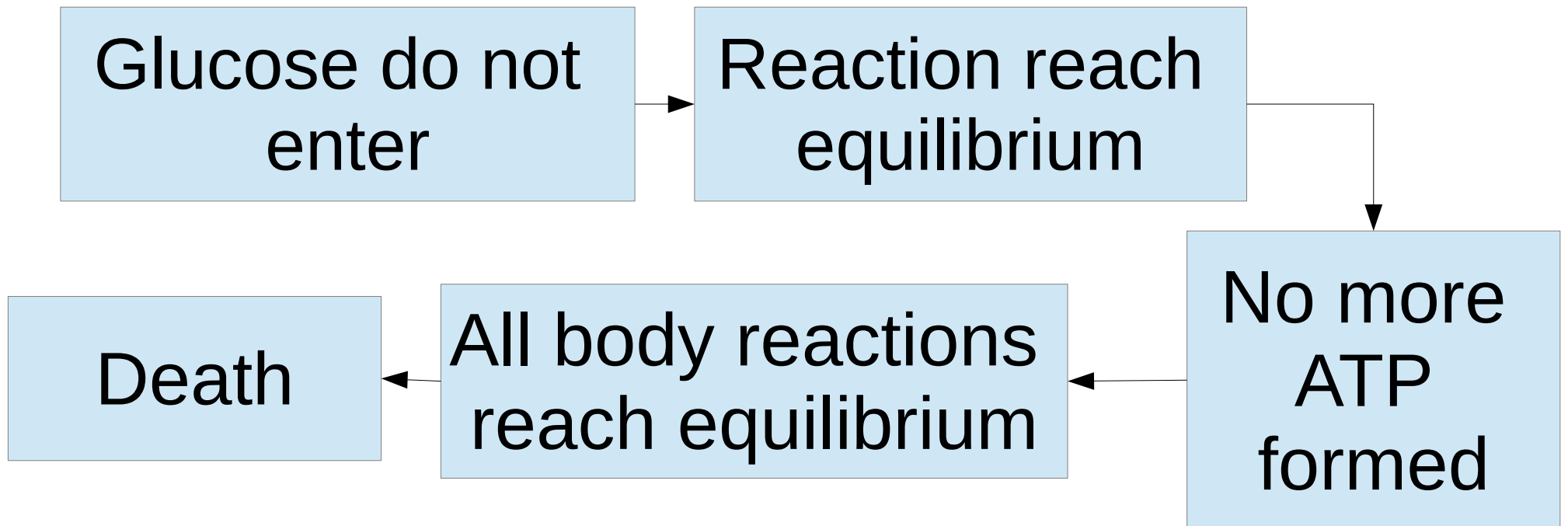
Na⁺ K⁺
Cl⁻ PO₄
Cr, Urea
H₂O



If molecules can not cross body
reactions reaches equilibrium

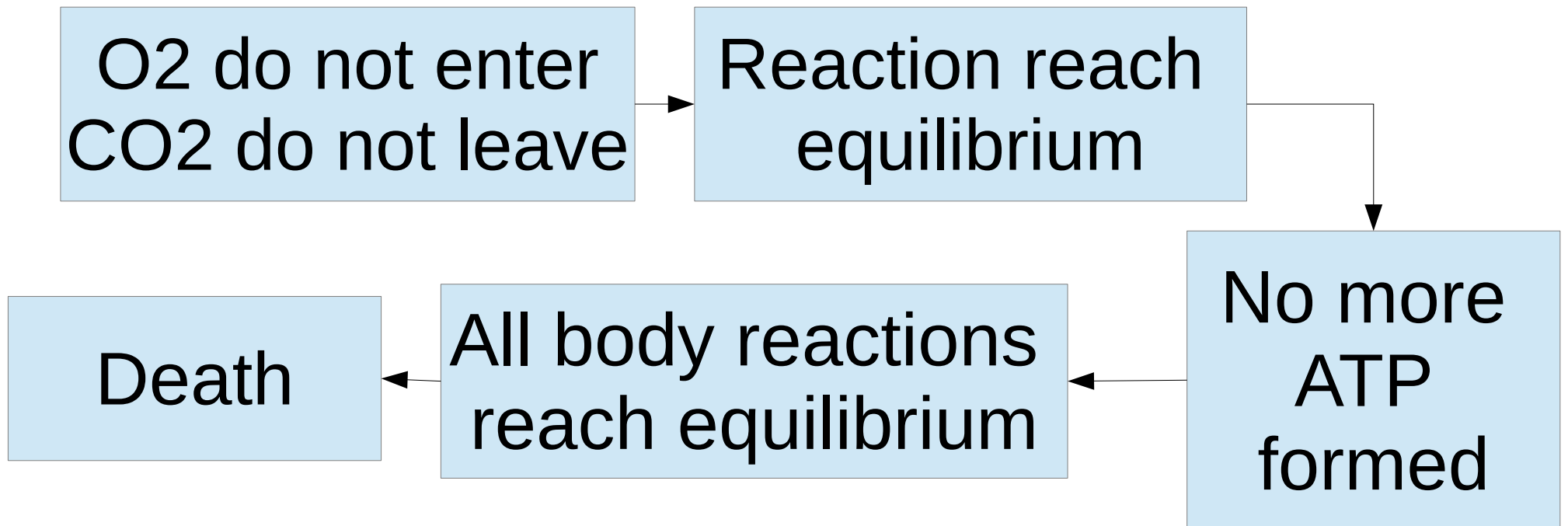
Malnutrition / Esophageal Cancer

- $\text{Glucose} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
- Continuous Glucose supply moves reaction to right



Severe Asthma / Pneumonia

- $\text{Glucose} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
- Continuous O_2 supply moves reaction to right
- Continuous CO_2 removal moves reaction to right



Chronic Kidney Disease

- H₂O, Na⁺, K⁺, Phosphate, Urea, Cr do not exit

H₂O, Na⁺ do not leave

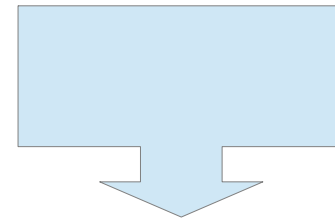
High BP

K⁺ do not leave

Arrhythmia

Phosphate do not leave

Bone disease

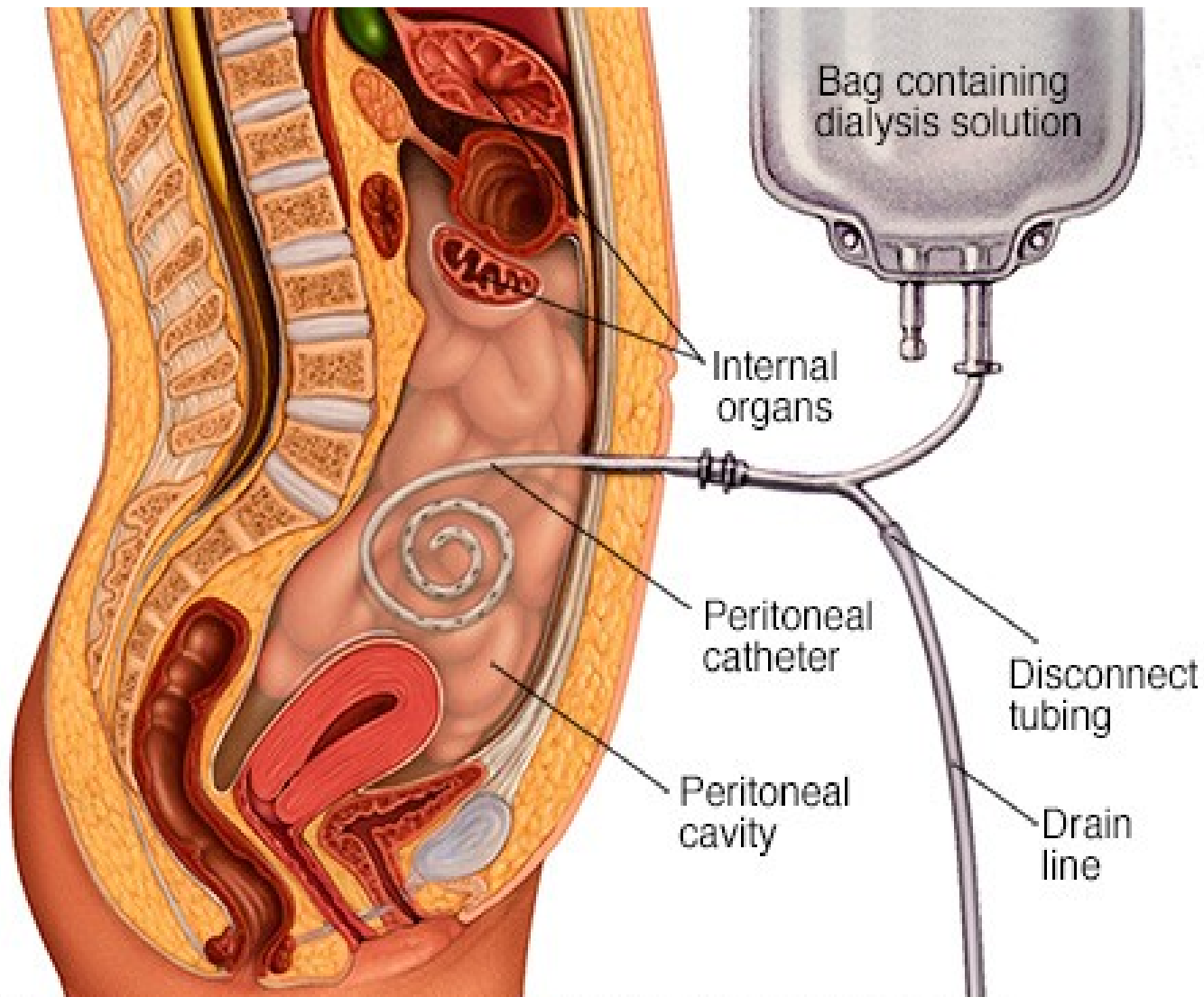


Death

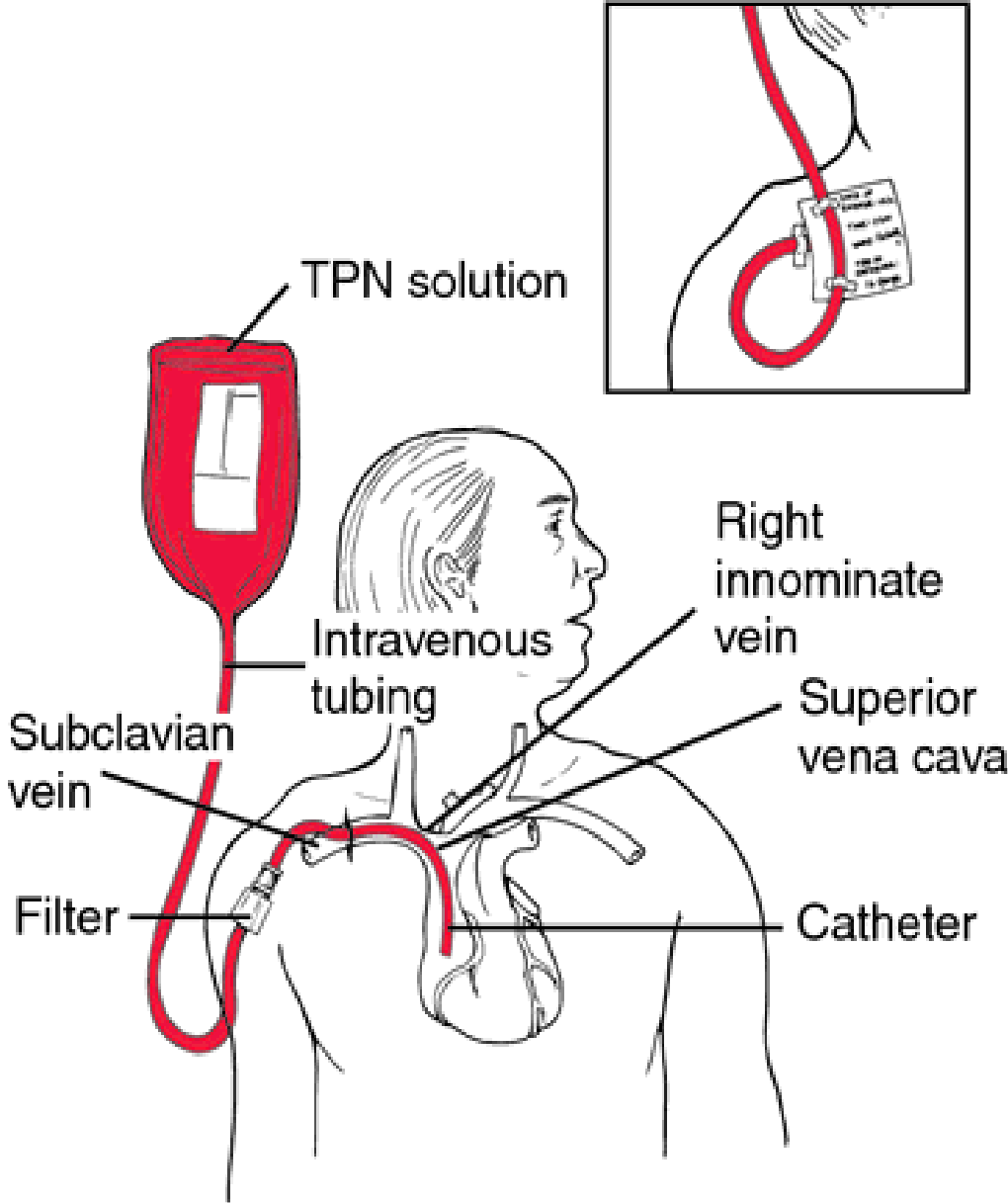
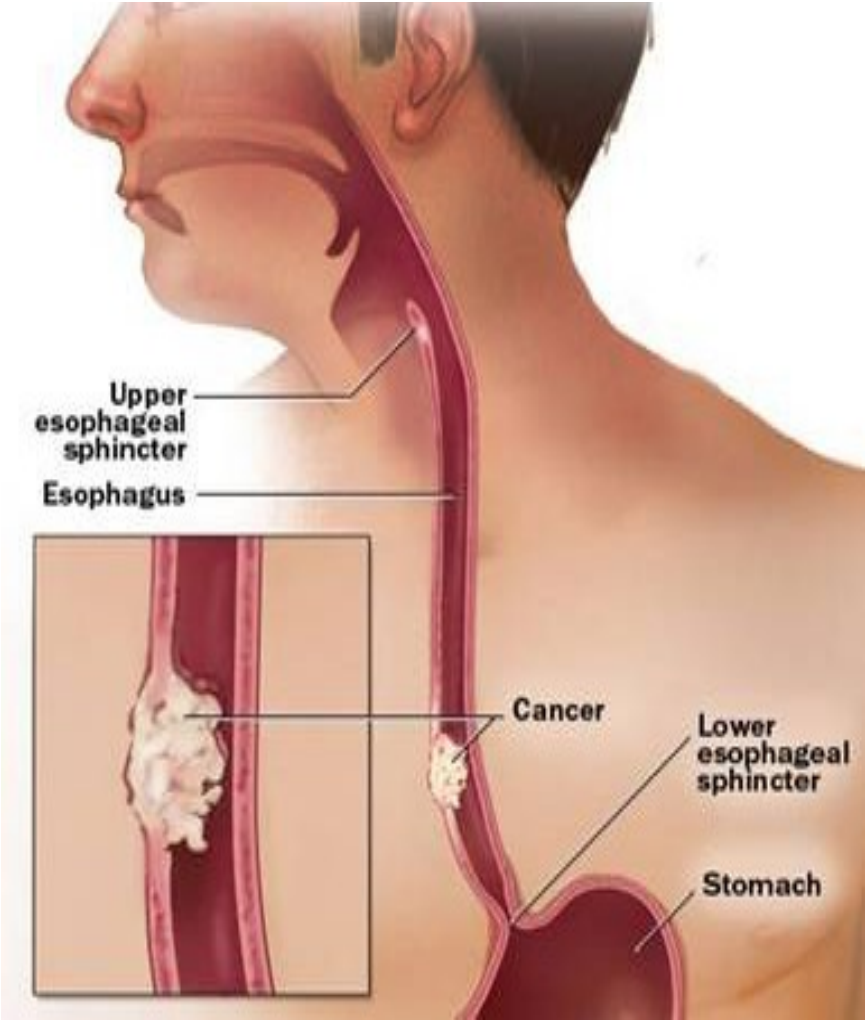
All body reactions reach equilibrium

**Treatment may help molecules
cross the boundary**

CKD → Peritoneal Dialysis



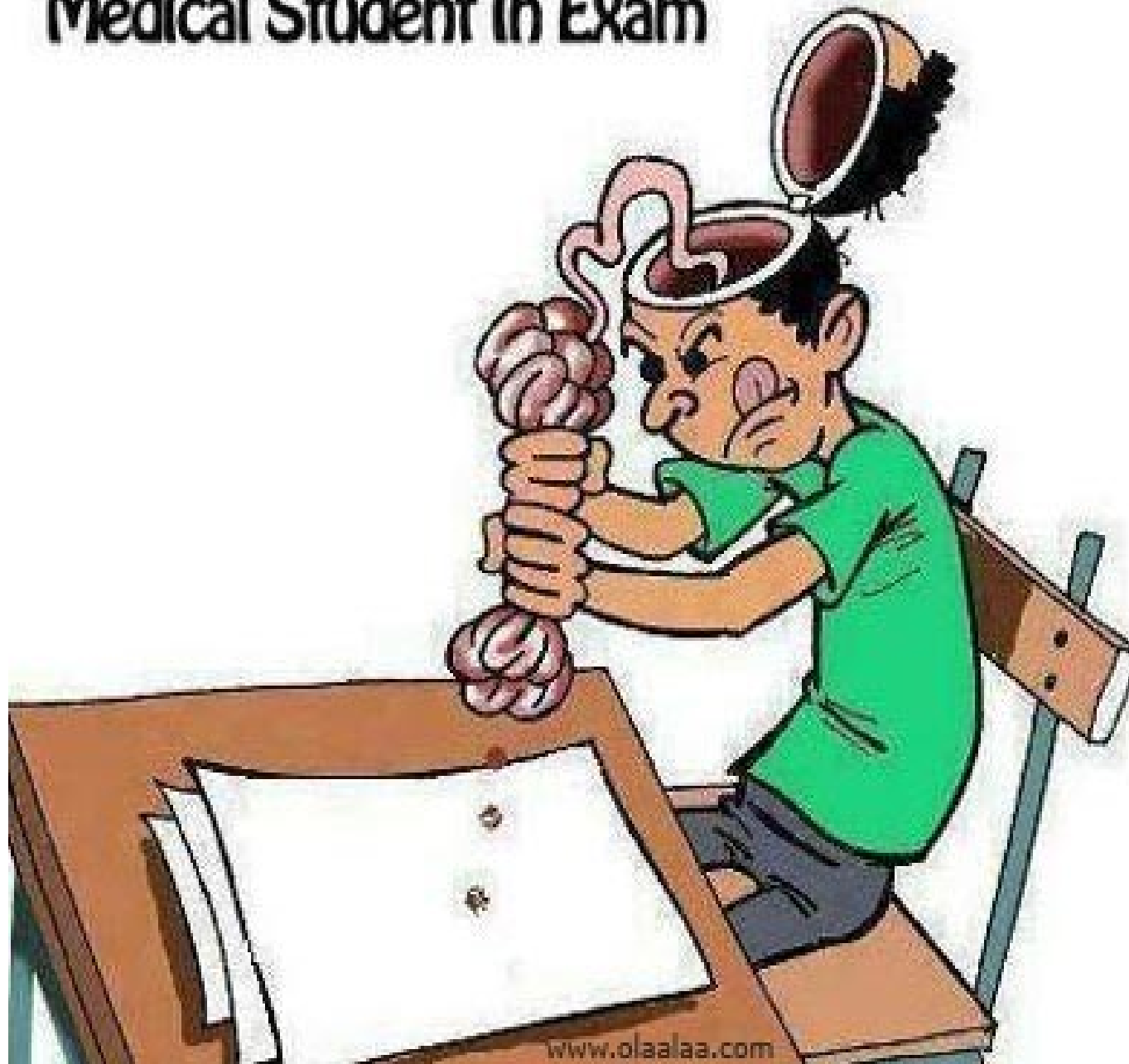
Esophageal Cancer → TPN





WHAT I LIKE ABOUT ANATOMY
IS THAT WE GET A CHANCE
TO WORK WITH PEOPLE!

Medical Student In Exam

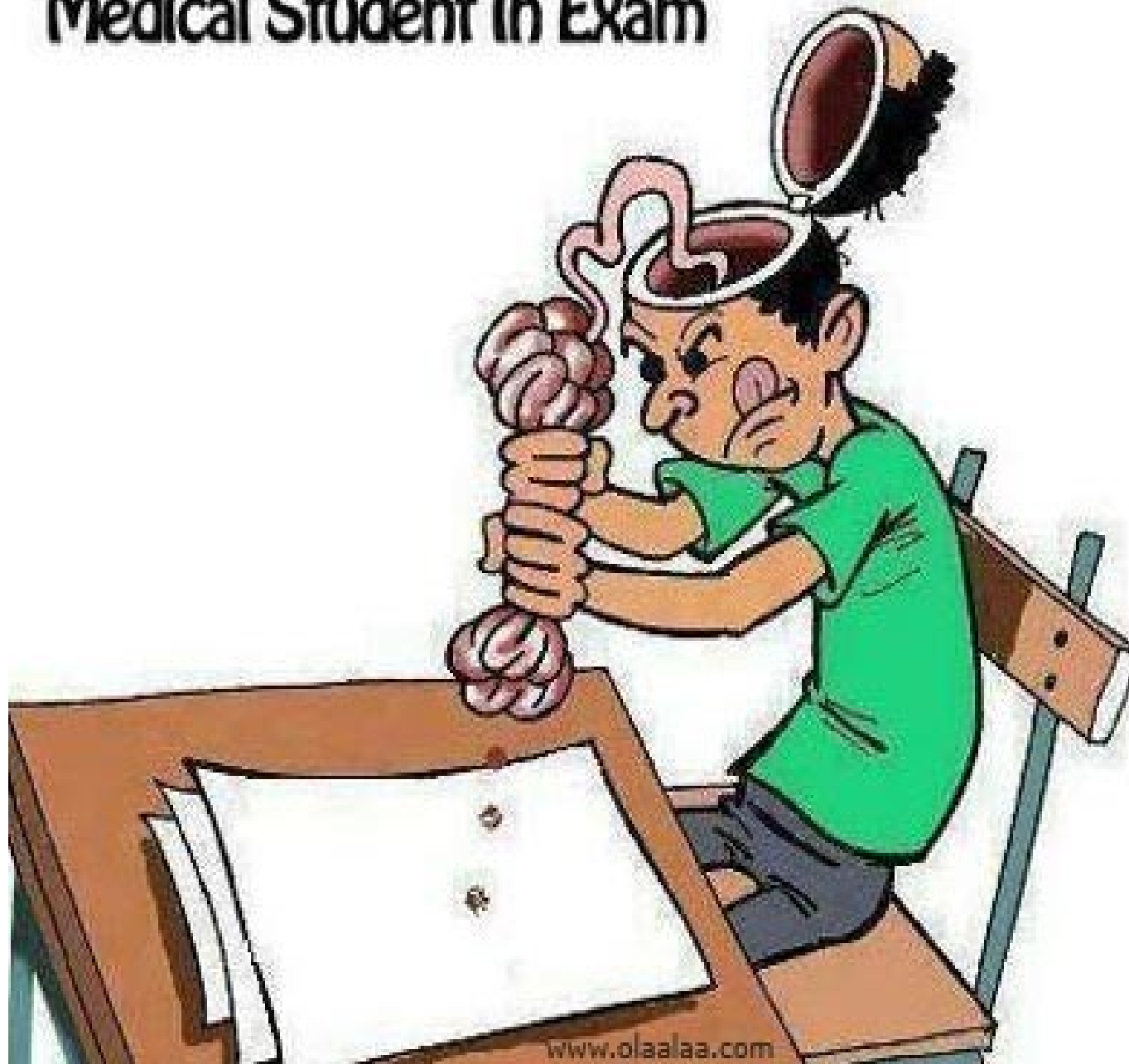


PHYSIOLOGY



.... AND IF I DIE BEFORE
I WAKE... THANKS...

Medical Student In Exam



HOW YOU SEE YOURSELF:



HOW MOST PRO

BRAIN

BRAIN

JORGE CHAM © 2009

DREAMS

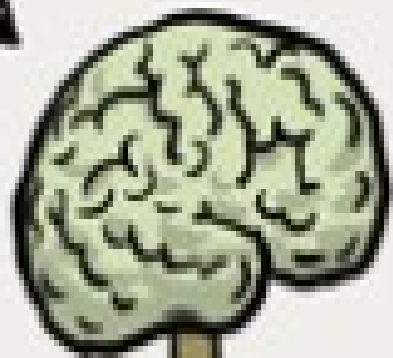


ASPIRATIONS



HOW MOST PROFESSORS SEE YOU:

BRAIN




SO, HOW'S RESEARCH?



STICK



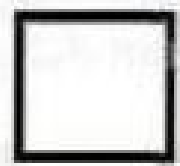
JORGE CHAM © 2009



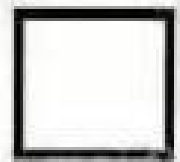
**Laughing is the best medicine.
But if you're laughing for no reason,
you need medicine.**



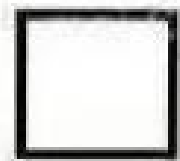
quotespage1.blogspot.com



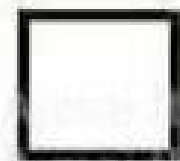
Single



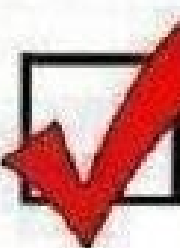
Married



It's complicated



In a Relationship



In Medicine