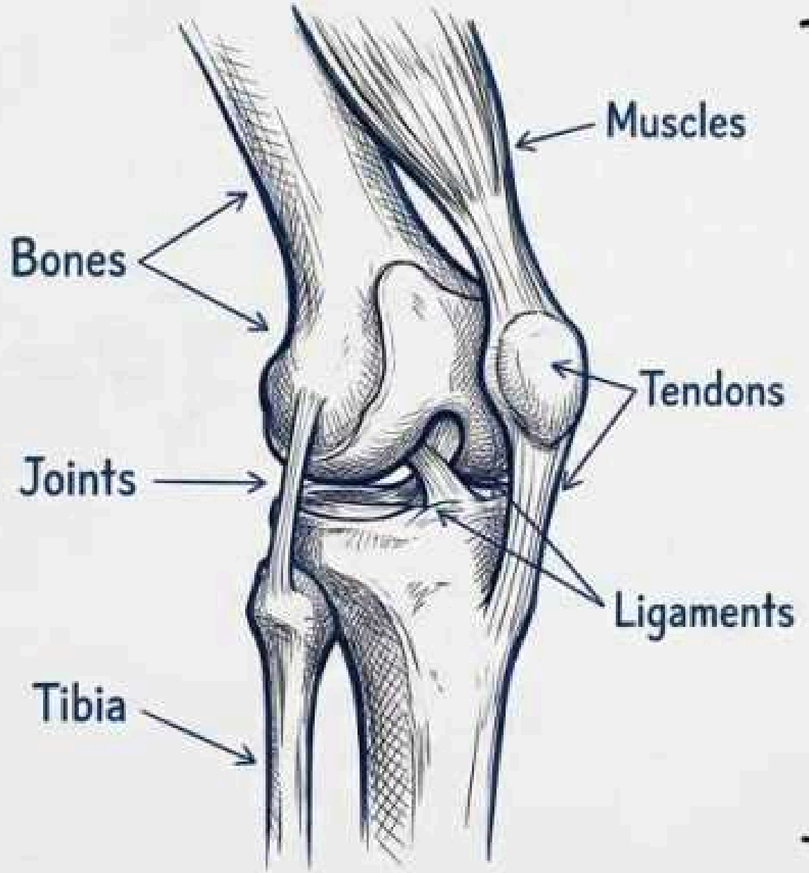
Medicine 533 B: Musculoskeletal Pathophysiology

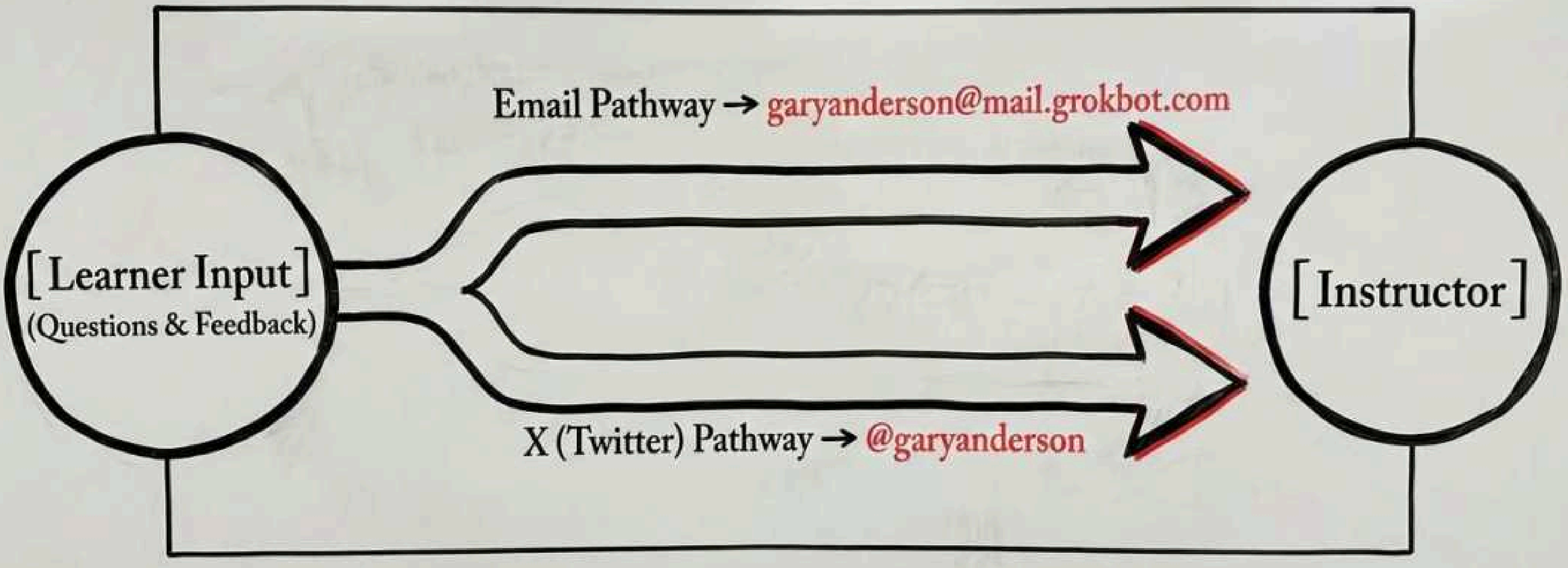
¶ 0.1

Third spring course, Year II, Anderson Academy Medical School
(Harvard/MIT Health Sciences & Technology model).



$$\text{Pathophysiology} = f(\text{Arthritis}, \text{Autoimmune}, \text{Fractures}, \text{Back Pain})$$

Communications Routing



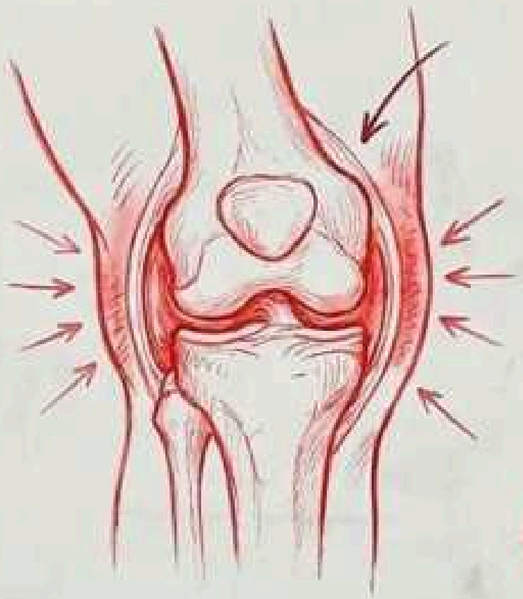
Strict Limitations

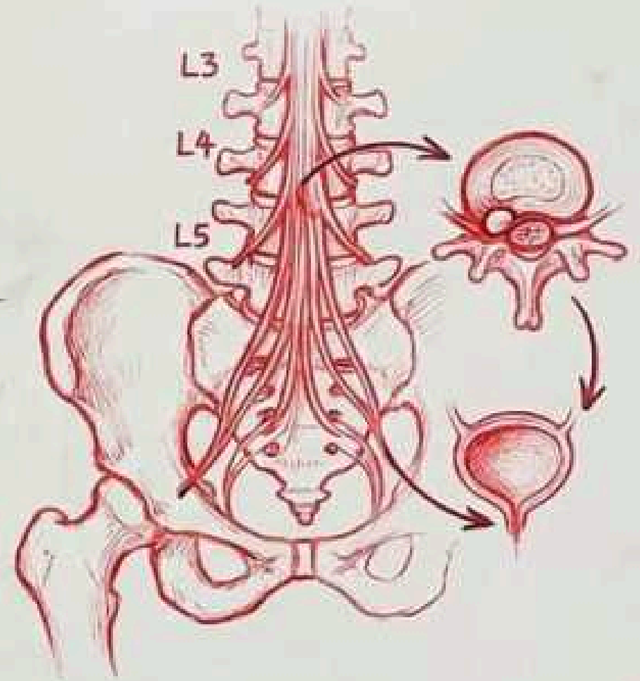
Course Knowledge $\neq$ Medical Training

[Ø Clinical Skills]
[Ø Medical Licence]
[Ø Medical Advice]

Completing this course does not make you a medical doctor.

Urgent Clinical Indicators





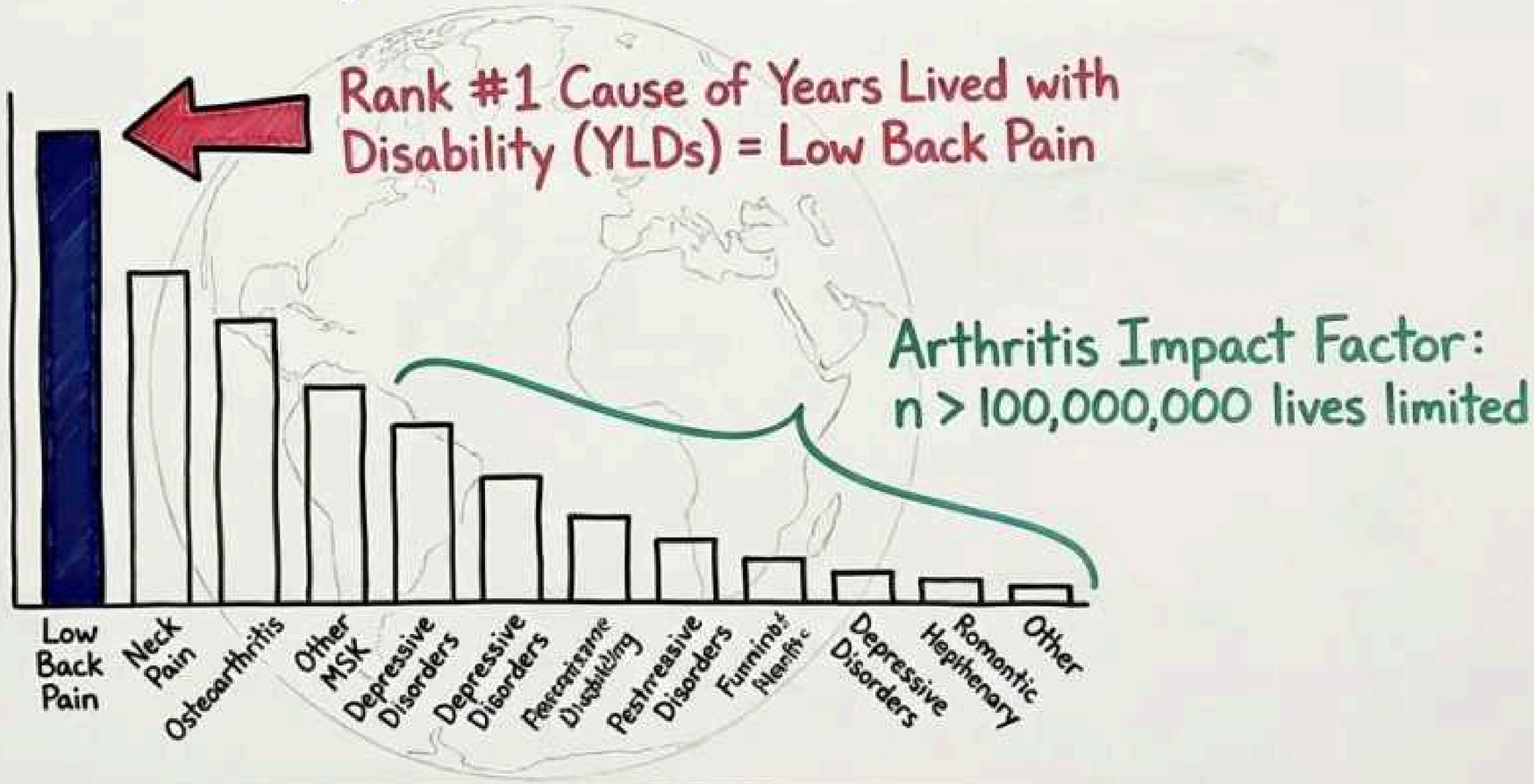
$$\left(\begin{matrix}\text{Hot + Swollen}\\ \text{Painful Joint}\end{matrix}\right) \cup \left(\begin{matrix}\text{Back Pain + Numbness/}\\ \text{Loss of Bladder Control}\end{matrix}\right)$$

= PROMPT MEDICAL ATTENTION

The Epidemiological Calculus

¶ 0.4

Global Disability $\max(x) =$ Musculoskeletal Conditions

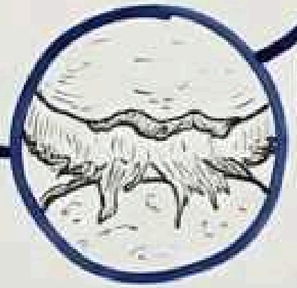


Therefore: These represent the commonest problems presented to practicing physicians.

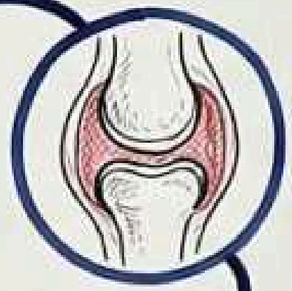
Curriculum Topography



L1: Bone, Joints & Muscle



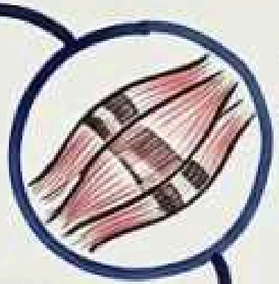
L2: Osteoarthritis



L3: Inflammatory Arthritis



L4: Gout & Crystal Diseases



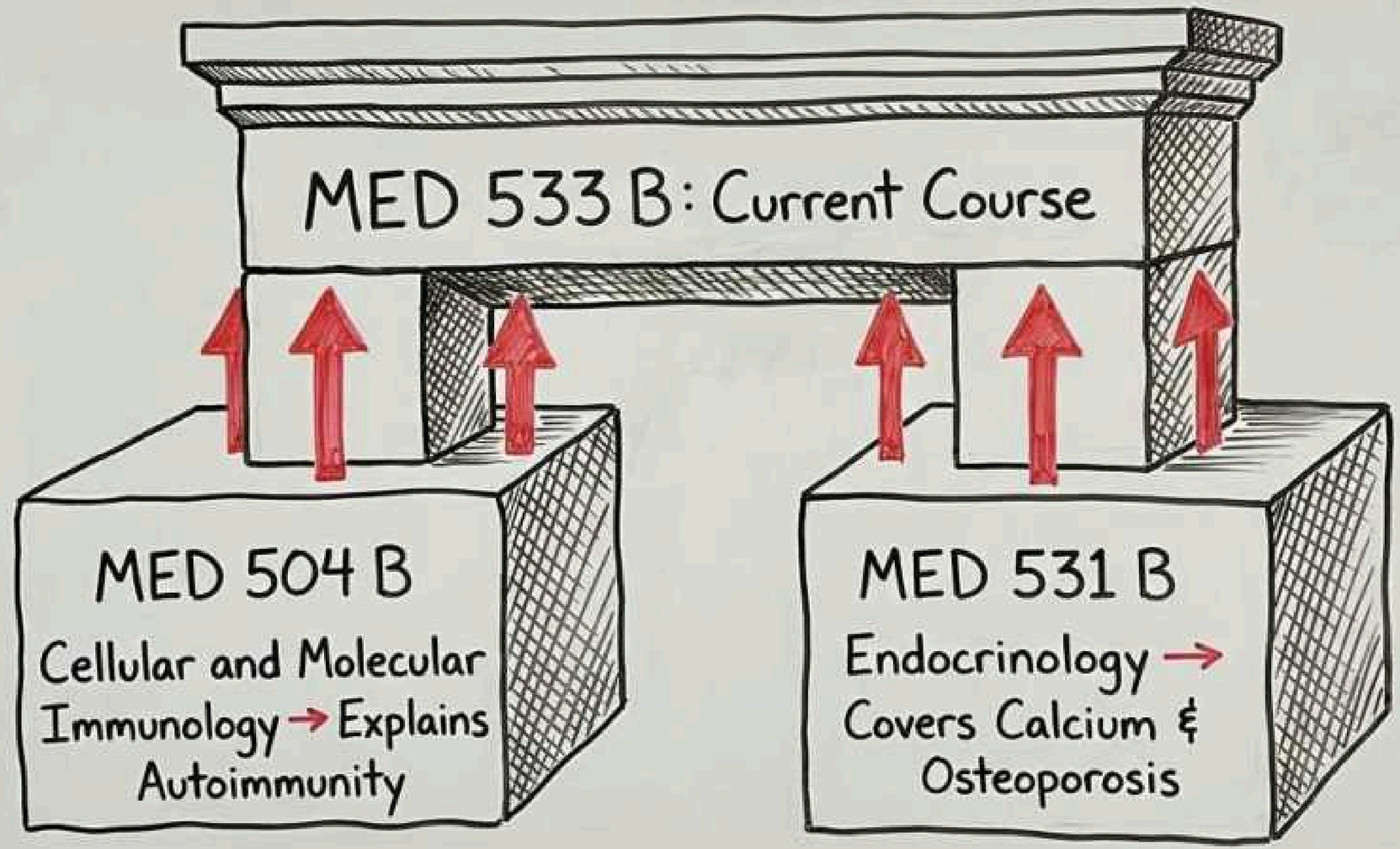
L5: Connective Tissue & Muscle Disorders



L6: Back Pain, Fractures & Sports Injuries

Prerequisite Scaffolding

¶ 0.6



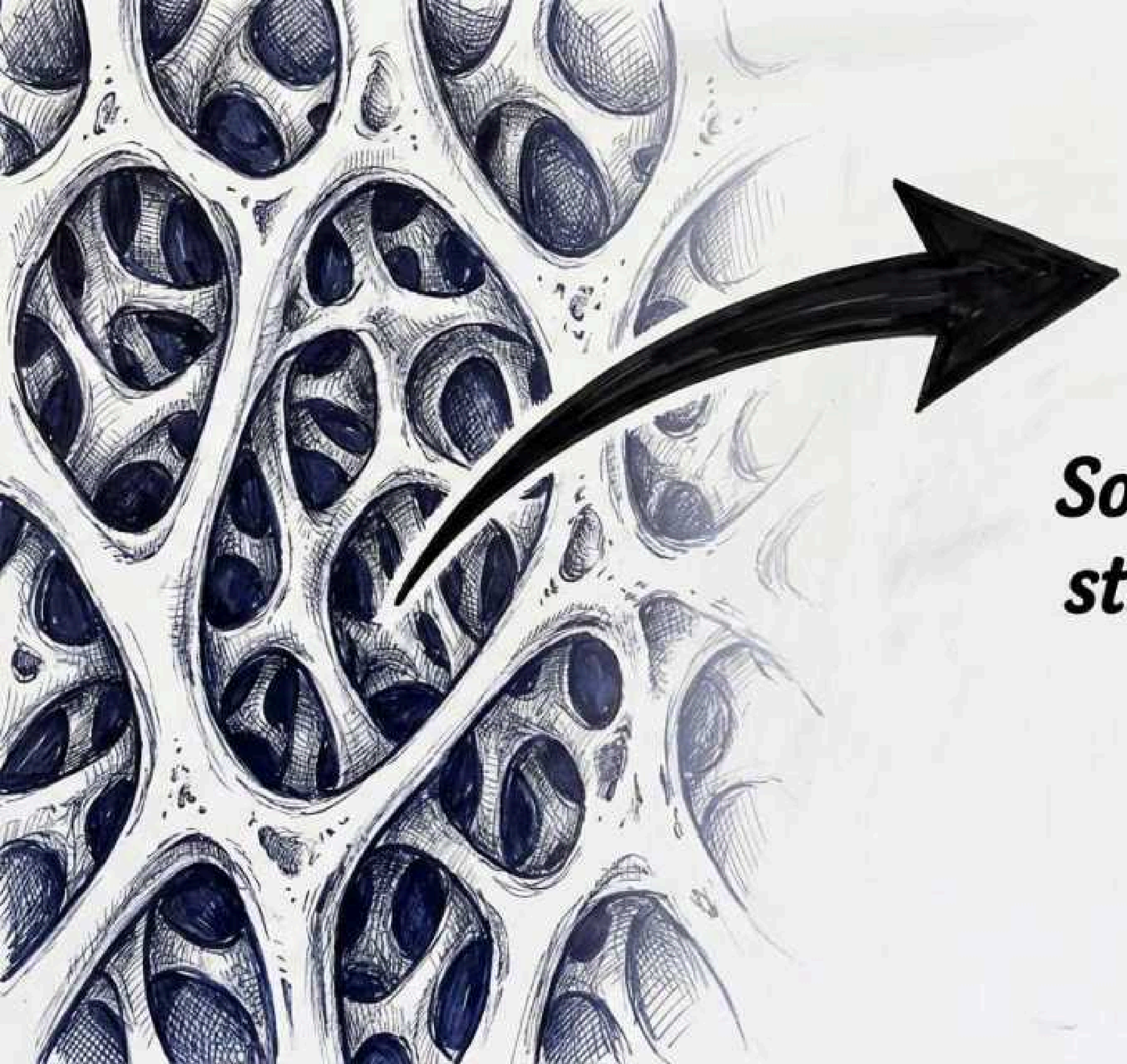
¶0.7

$\Delta(\text{Diagnosis}) = Q1(\text{How many joints?}) + Q2(\text{Which joints?}) + Q3(\text{Is it inflammatory?})$

These answers point to most diagnoses.

	Inflammatory Pain	Mechanical Pain (e.g., Osteoarthritis)
Morning State	Worse (Long-lasting stiffness)	OK
Effect of Movement	Eases 	Worse with use 
Effect of Rest	Stiffens	Eases 

¶ 0.8



So let us begin with the structures themselves.