

# Clinical Reasoning in Health Education

Jamie Fox, MD, FAAP  
Associate Professor of Pediatrics

August 10, 2018

# Disclosures

Financial and other important stuff...



**NONE**



# Learning Strategies

Illness Scripts

Dual-process Theory







**System 1**



**System 2**

“Thinking without thinking”

Subconscious

Pattern  
recognition

Intuition

LOW  
cognitive load

**Fast**

**System 1**

“Thinking about thinking”

Conscious

Deductive  
reasoning

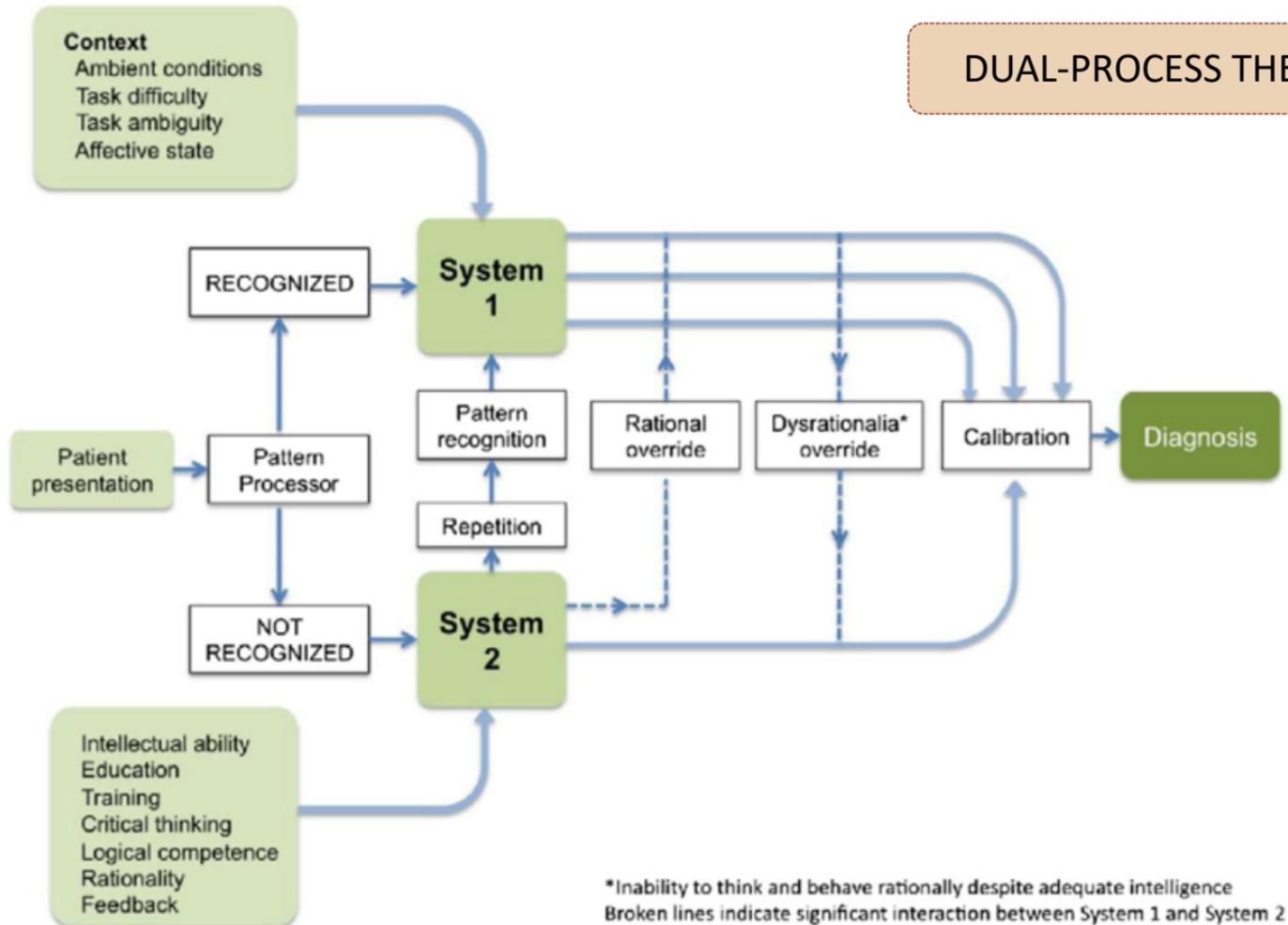
Metacognition

HIGH  
cognitive load

**Deliberate**

**System 2**

# DUAL-PROCESS THEORY



\*Inability to think and behave rationally despite adequate intelligence  
Broken lines indicate significant interaction between System 1 and System 2







What's this have to do with

**Learning?**



# Learning Strategies

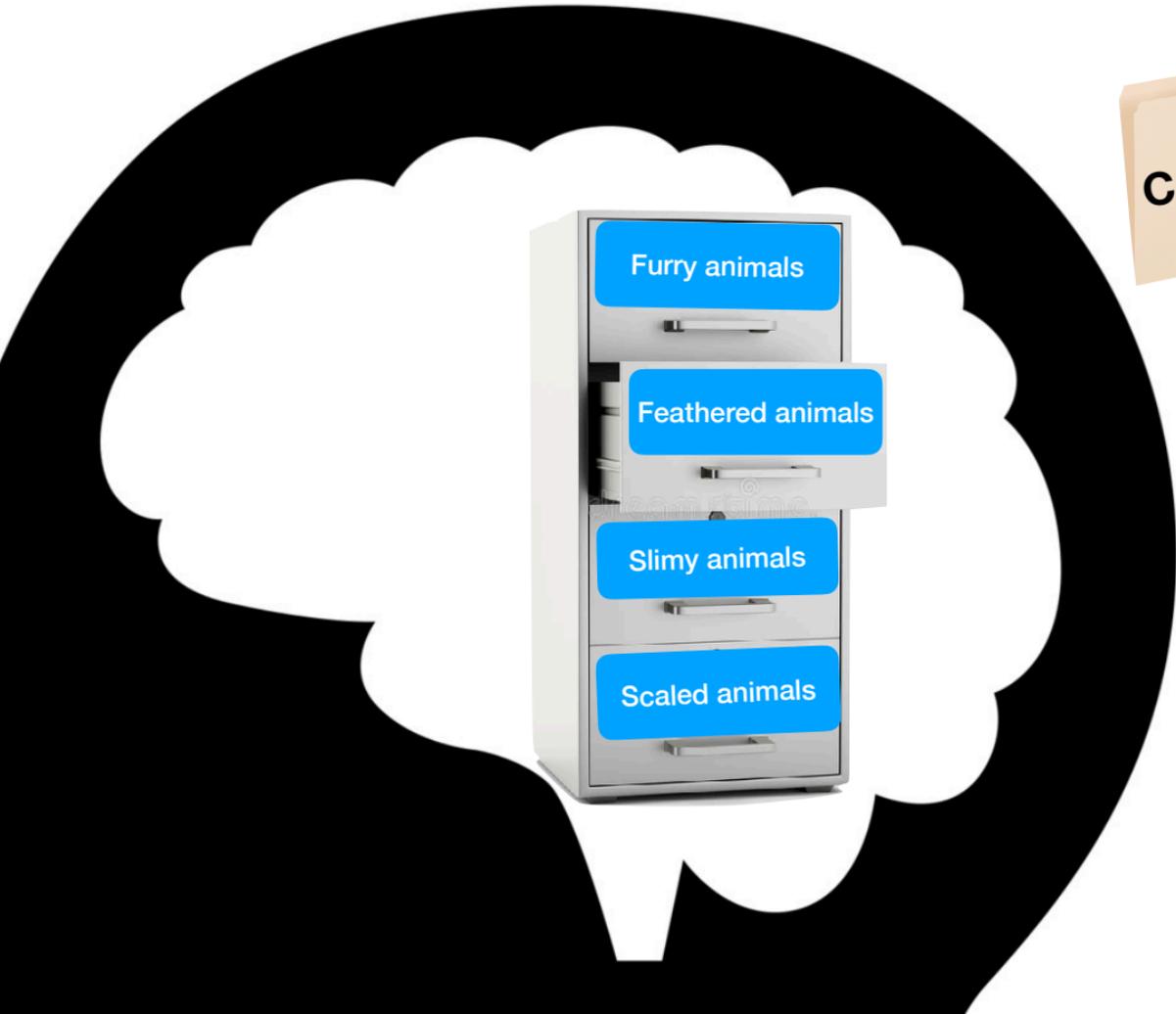
Illness Scripts

Dual-process Theory









Can swim

Can't fly

Long-legged

Tropical

Migrate



Can swim

Can't fly

Long-legged

Tropical

Migrate



Can swim

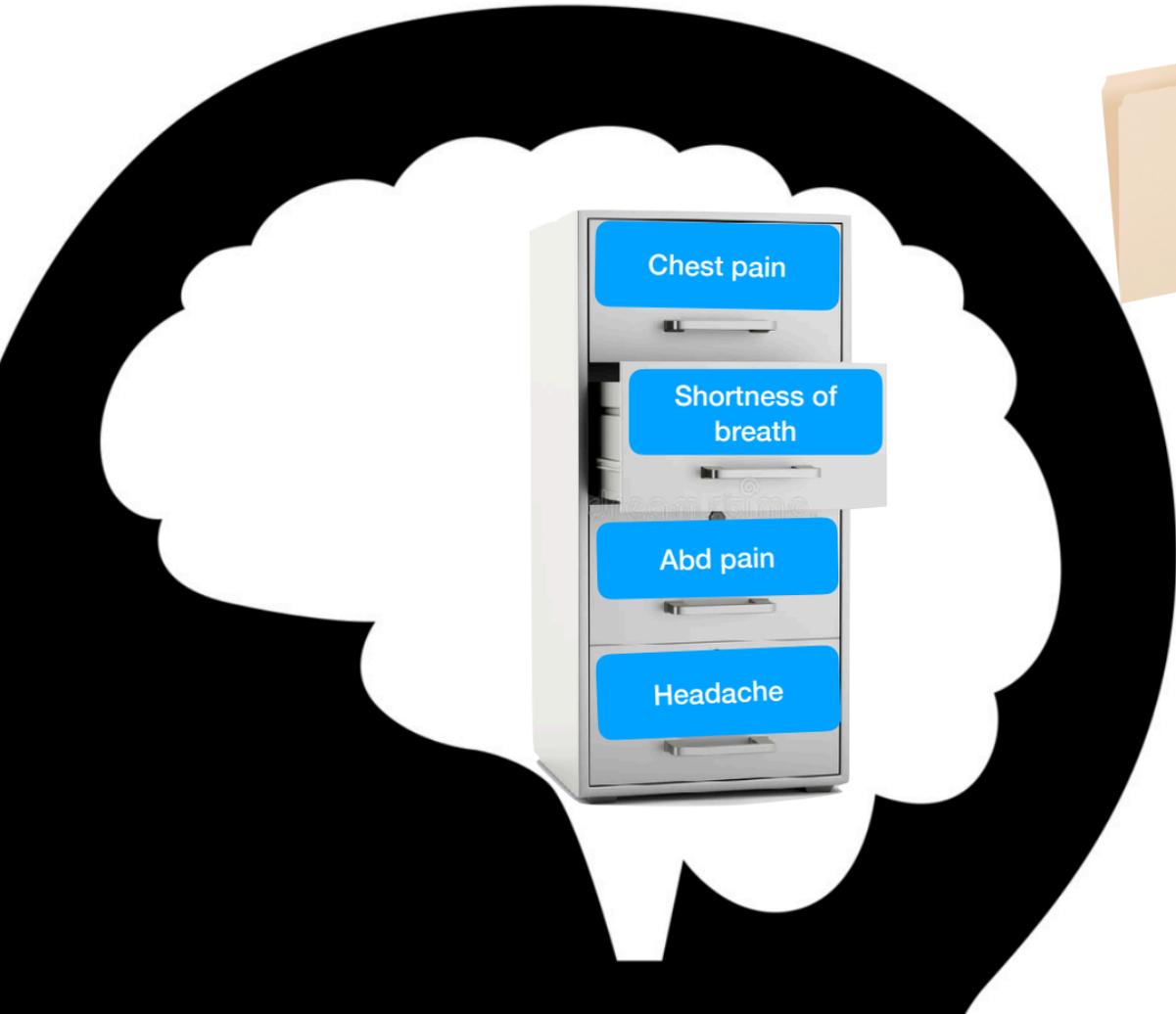
Canadian  
goose

Penguin

Mallard  
duck

Trumpeter  
swan

Pelican







# Bronchiolitis



## Predisposing Factors

- 6mos - 3yo
- Sick contact
- Upper respiratory tract infection
- Prematurity
- Chronic lung disease

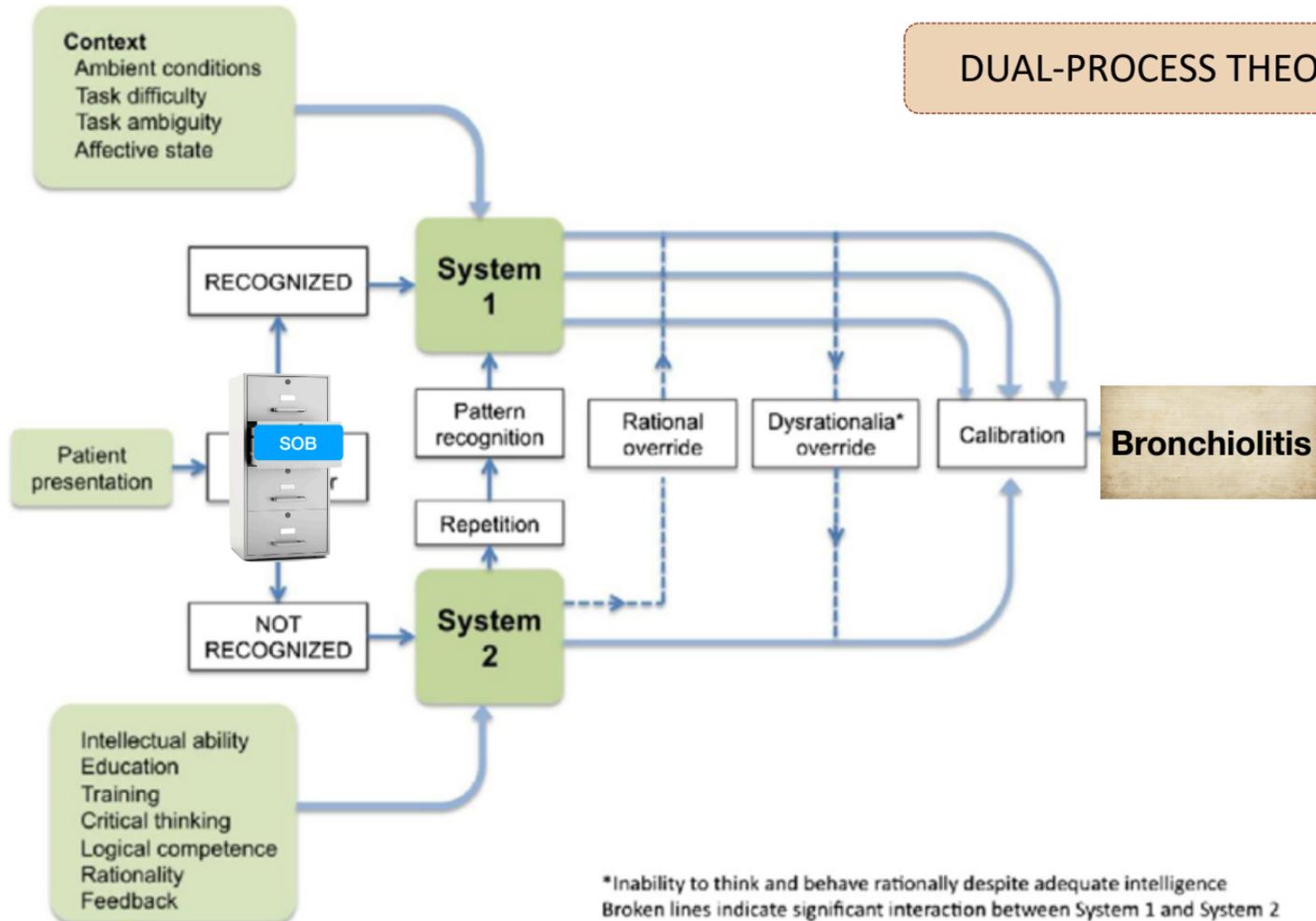
## Pathophysiologic Insult

**Virus (classically RSV, but many others) invades respiratory epithelium in bronchioles leading to inflammation, sloughing of epithelium into bronchioles, thereby impairing airflow**

## Clinical Consequences

- Fever
- Nasal congestion
- Cough
- Acute, progressive incr work of breathing
- Tachypnea
- Hypoxia
- “Washing machine in chest”
- If mild, “happy wheezer”

# DUAL-PROCESS THEORY



\*Inability to think and behave rationally despite adequate intelligence  
Broken lines indicate significant interaction between System 1 and System 2







Situation

Background

Assessment

Recommendation

Our patient's pneumonia is progressing to respiratory failure and sepsis. I'll be right there.

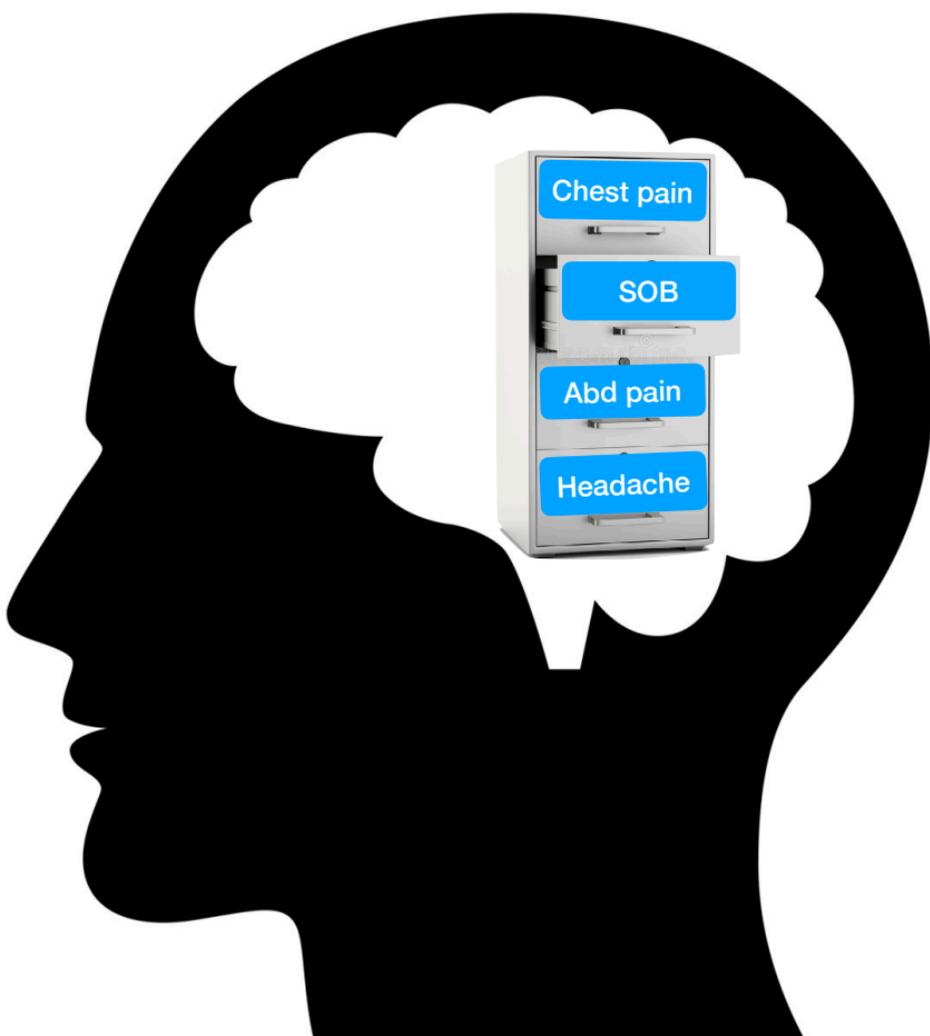




# Learning Strategies

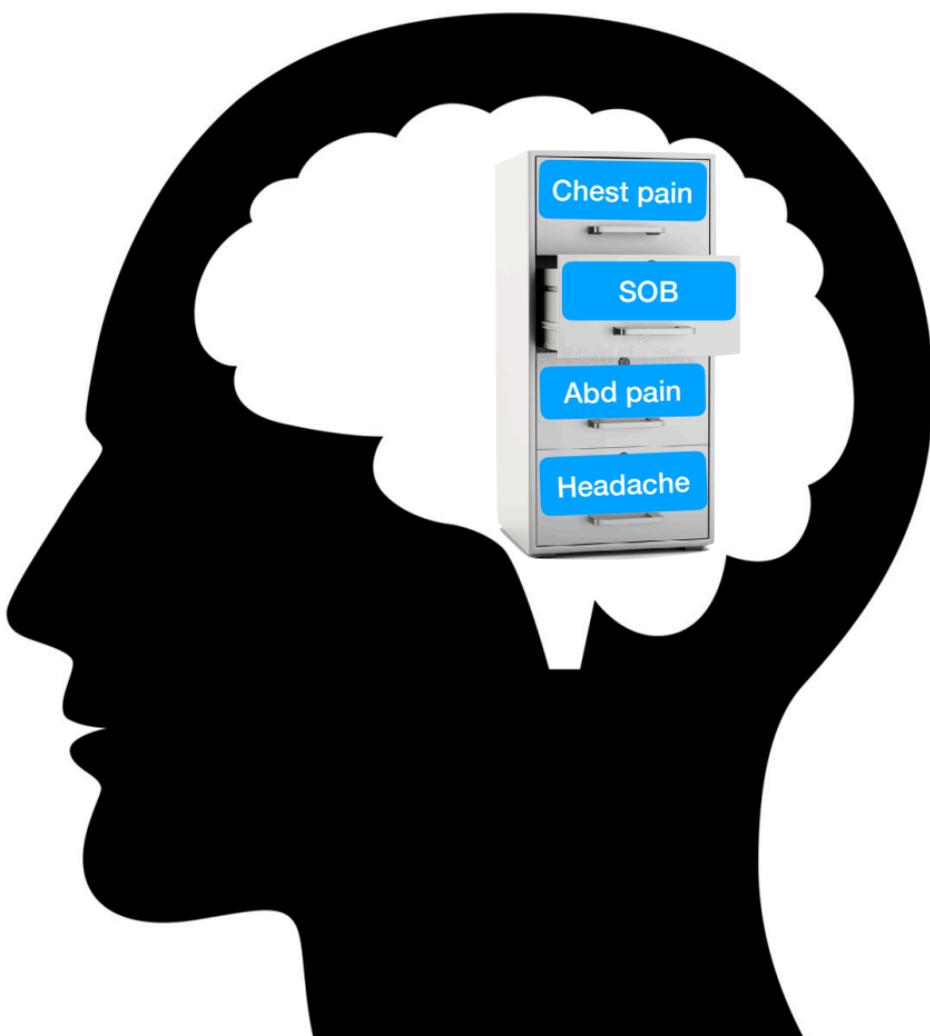
Illness Scripts

Dual-process Theory



## Read about **SIMILAR** illnesses

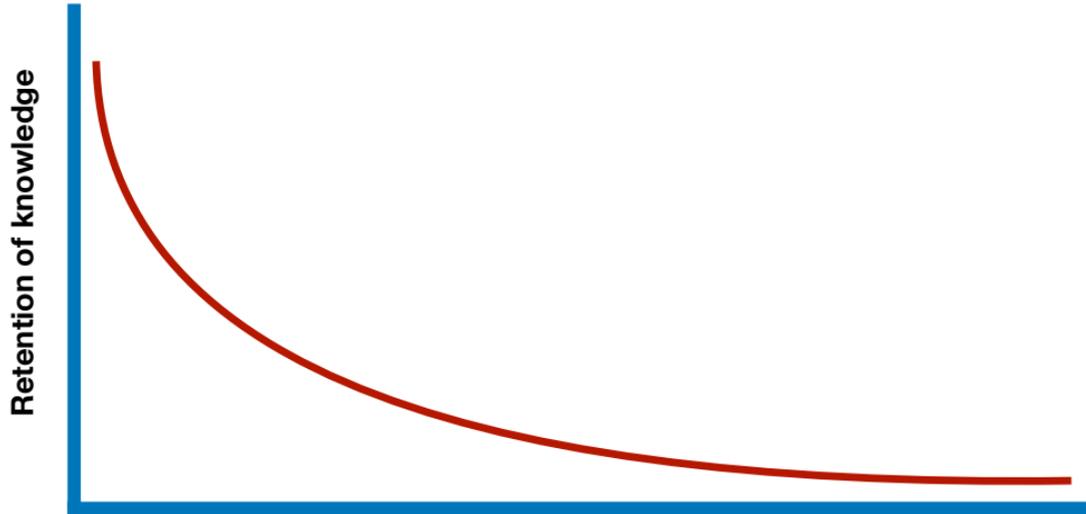




# STRUGGLE with the content



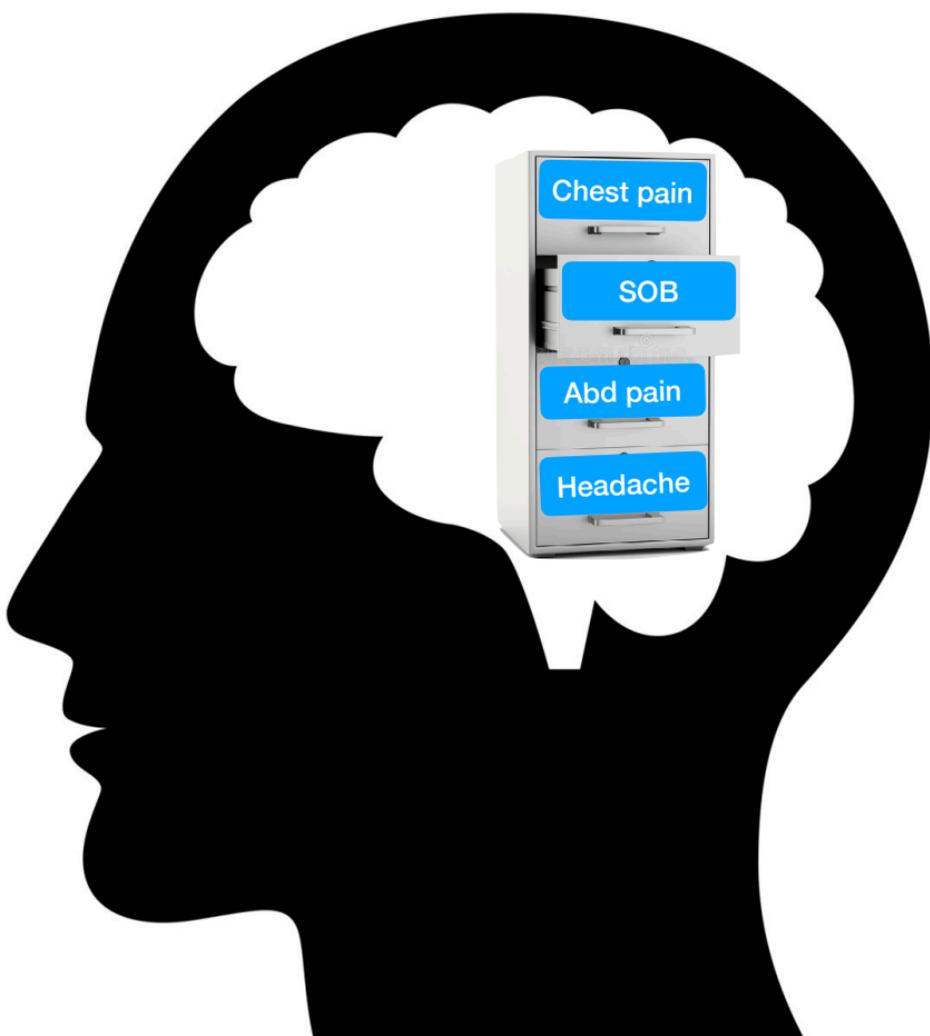
# Ebbinghaus Forgetting Curve





# STRUGGLE with the content





# STRUGGLE with the content

Pneumonia	Asthma	Bronchiolitis



# STRUGGLE with the content

## QUIZ:

ANSWER A

ANSWER B

ANSWER C

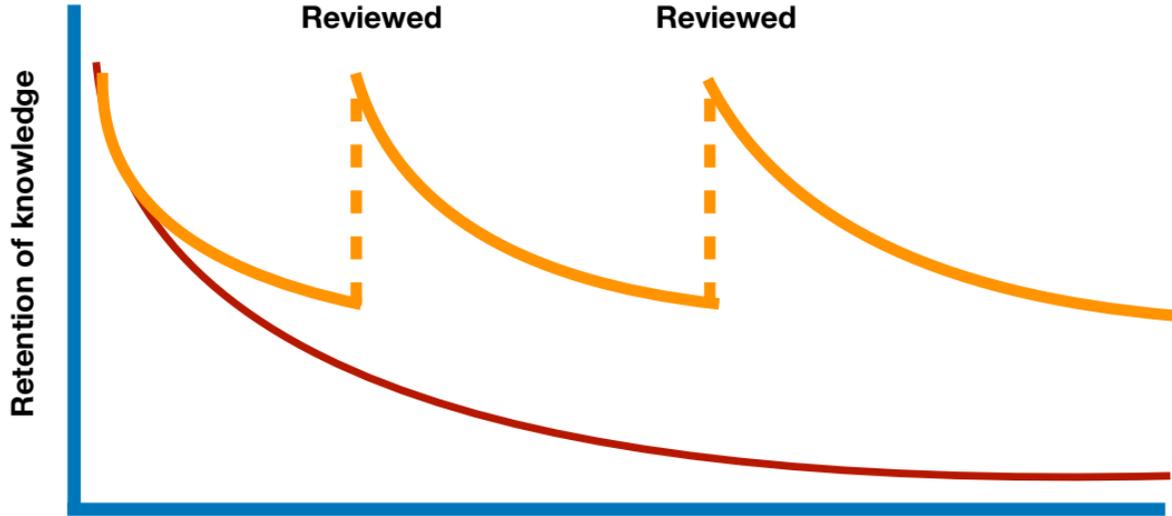




# STRUGGLE with the content



# Ebbinghaus Forgetting Curve





Experienced Nurse

**Expert** Nurse



# Experienced



Occurs naturally

# Expert



**HELLO**  
I AM...

**AN EXPERT**



FEEDBACK

Patient charts

Self-reflect

Colleagues

Team members

**HELLO**  
I AM...

**AN EXPERT**



**Dr. Gurpreet Dhaliwal**  
**Professor of Medicine, UCSF**

**Becoming an expert isn't easy.  
No one is pretending that it is.  
But, it's worth it!**

**More Cases!!**

**HELLO**  
I AM...

**AN EXPERT**



**Mobile Classroom**

More Cases!!

**HELLO**  
I AM...

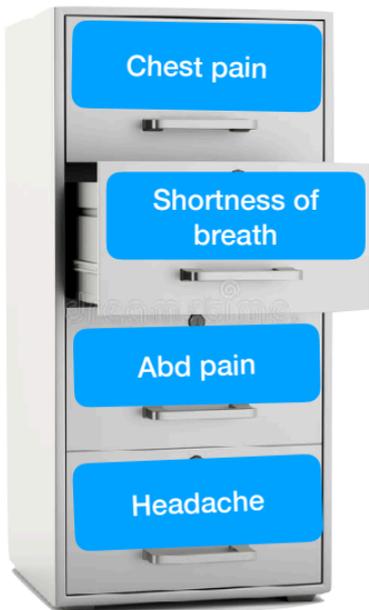
**AN EXPERT**



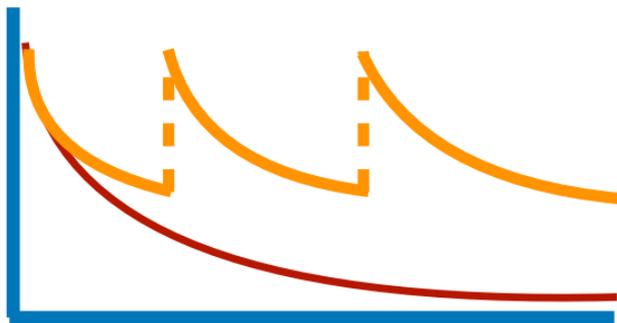
Life Hacks



Build/Organize  
Scripts



Battle  
Forgetting



Become  
Expert





**Any questions**

