HANDOUT

Clinical Reasoning and Dual Processing Theory

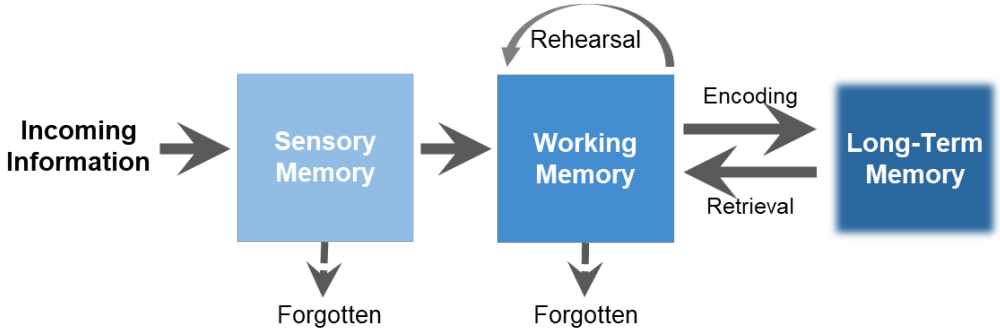
- Dual Processing Theory (DPT) is important for understanding human cognition, including Clinical Reasoning.
- DPT says humans have two modes of thinking System 1 (Fast and Intuitive) and System 2 (Slow and Analytical).
- Clinical Reasoning is System 2 thinking; however, we are not disposed to engage in System 2 thinking and instead naturally prefer to rely on System 1 thinking.
- Our System 1 thinking is important and helps us identify patterns and make quick decisions, but if we rely on System 1 thinking too much, we will be susceptible to cognitive biases and are likely to make mistakes.
- System 2 thinking is challenging, and we need to make a concerted effort to engage in it.
- To do so we need to check our fast and intuitive thinking by slowing down, pausing, and using the tools of good Clinical Reasoning.

System 1

System 2

Clinical Reasoning and Cognitive Load Theory

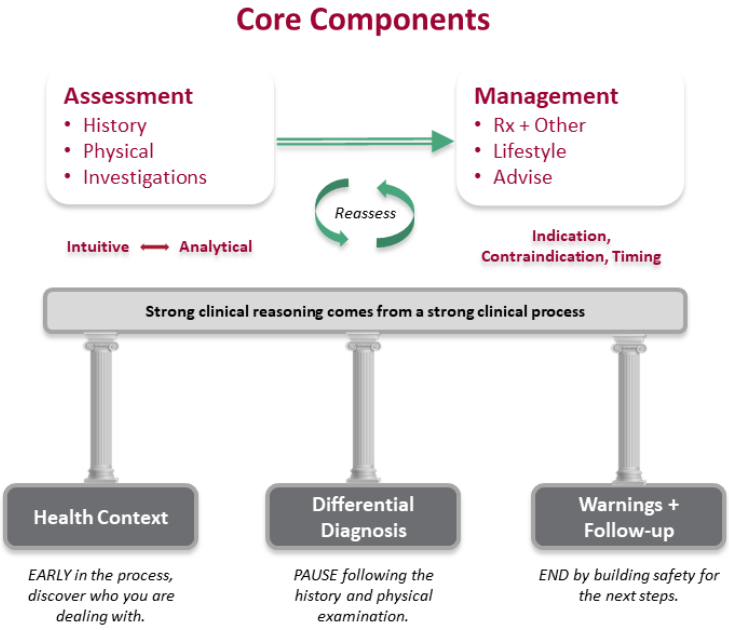
- Cognitive Load Theory (CLT) is a learning theory that in conjunction with DPT is important for understanding Clinical Reasoning and how we think.
- CLT says we have a limited cognitive capacity for processing information from our sensory systems, in particular our auditory and visual systems.
- Sensory information is sent to our Working Memory (WM) which can then be transferred to our Long-Term Memory (LTM), information from our LTM can also be called up into our WM.
- There are three types of cognitive load: Intrinsic (what is important information to us), Extrinsic (noise), and Germane (the strategies we use to transfer information to and from our LTM).
- The diagnostic process heavily taxes our cognitive load capacities, and our intuitive System 1 thinking wants to take over.
- Intuitive thinking is important, especially for pattern recognition such as drawing on illness scripts. But if we do not pause and check our thinking, we can miss important aspects of a case or not consider alternatives.
- Just thinking about a case is taxing on our CL capacities but if there is high extrinsic cognitive load good thinking becomes even more challenging and we are more likely to rely on System 1 and not check our thinking.
- We need to understand and identify how cognitive load can affect our thinking and then slow down, pause, and use the tools of good Clinical Reasoning.



HANDOUT

Key Components of Clinical Process

The **foundational elements** of clinical process flow upwards to support the **core components** of clinical process: Assessment and Management.



The Toolbox: HOW **clinical process** can support **clinical reasoning**.

Assets

Adhere to the foundations (Context, Differential, Warnings / Follow-up)

- **Assessment Assets**
  - Shift from **intuitive** to **analytical**
  - Move from **open ?** to **closed ?**
  - Capture all **key features**
  - **Assess** key features → Time, Description, Trajectory, Associations
  - **How many** problems are there?
  - **Ask** more than **tell**
  - **Listen** more than **lecture**
- **Management Assets**
  - **Multiple** strategies
  - **Indication**, **Contraindication**, **Timing** (Why should I? Why shouldn't I? When should I?)
  - Know when to ask for help/refer!

Assets strengthen the clinical process.

Liabilities

- Not **progressing** beyond intuitive mode
- **Premature diagnosis** (accepting probability, intuition or patient's diagnosis)
- **Ignoring** cues, clues and key features (history, physical/vitals, tests)
- **Dropping** a presenting problem
- Unaware of **bias** (implicit, priming, confirmation, anchoring)
- **Premature closure** to visit (Rx, test)
- **Mistaking** a part for the whole or confusing cause and effect

Liabilities compromise the clinical process.

HANDOUT

Apply Clinical Process to Cases

❑ Case presentation: The central presenting features of the case

- To understand how **rapidly** the initial **Expert Intuitive** mode can introduce risk by use of a "probability assessment" with premature diagnosis
- "What are your initial thoughts about diagnosis in this case?"

❑ Initiate the assessment: Open ended questions for the Expert Intuitive mode

- To recognize the value of **Open-Ended Questions** to allow the Expert Intuitive mode to unfold without misdirection imaging
- "What open-ended questions could you use to open the Assessment to get accurate HPI information?"

❑ Progress through the assessment: Transition to **Analytical** mode

- Using **Closed Questions** to fill gaps with necessary data and evidence
- "What Information is still needed to fill gaps in the **HPI (onset, description, trajectory, associations)** and **Health Context Information (personal and family Hx)**?

❑ Support or refute early impressions: Testing the strength of the initial working diagnosis

- Finding evidence from history, physical exam/vital signs and/or targeted investigations to support or refute the initial working diagnosis
- "What specific info would or did help you with the working diagnosis?"

❑ Open your mind to hidden dangers: Circle back to consider alternative diagnostic possibilities

- To routinely **pause** to consider potentially serious **differential diagnoses**
- "Are there other diagnoses that need to be considered?"

❑ Create safe management plans: Safe and appropriate drug and non-drug choices

- To justify interventions by considering **indication, contraindication, timing**
- "What must be considered before selecting the **management** options?"

❑ Build safety after the visit: Strategies to build safety for this person after the visit

- Using **warnings and follow-up plans** to reduce risk after the visit
- "What can you do now to reduce risk after the visit?"