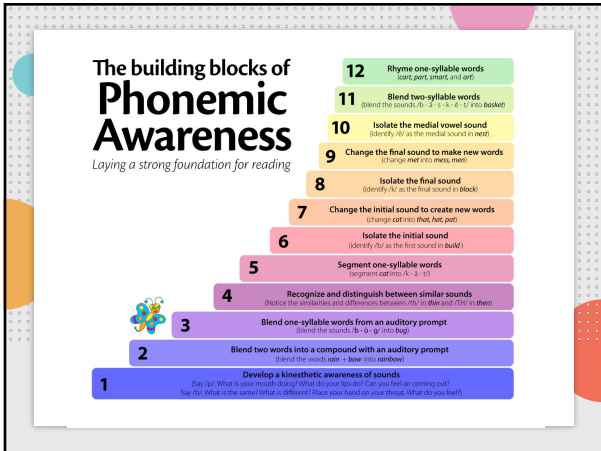


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Dyslexia: Early Intervention is Key

- **Dyslexia** is a specific learning disability that is **neurobiological** in origin.
- Research has shown that brain plasticity decreases through childhood. It takes 4 X as long to intervene in fourth grade as it does in late kindergarten (NICHD) because of brain development and due to the increase in content for students to learn as they grow older.
- Children at risk for reading failure can be reliably identified even before kindergarten.
- “Deficits in phonological awareness, rapid automatized naming, verbal working memory and letter knowledge have been shown to be robust precursors of dyslexia in children as young as age three” (Gaab, 2017). Extensive evidence exists that supports the fact that early intervention is critical.
- Struggling readers who do not receive early intervention tend to fall further behind their peers (Stanovich, 1986).

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Early Intervention: Detect Earlier

- Know to look for the signs and symptoms of Dyslexia, ADHD and DCD
- Be mindful of 40%+ comorbidity
- Refer students for Dyslexia screening if the following are present:

	Never/ not at all	Rarely/ a little	Sometimes	Frequently/ quite a bit	Always/ a great deal
1. Has difficulty with spelling	1	2	3	4	5
2. Has/had difficulty learning letter names	1	2	3	4	5
3. Has/had difficulty learning phonics (sounding out words)	1	2	3	4	5
4. Reads slowly	1	2	3	4	5
5. Reads below grade level	1	2	3	4	5
6. Requires extra help in school because of problems in reading and spelling	1	2	3	4	5

- Support a full dyslexia intervention if it is needed
- Use gestures and visual supports
- Maximize time outdoors for play + recess
- Add 5 minutes of cognitive-motor movement to your classroom every 45 minutes
- Look into Whole Brain Teaching

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Why is Rhyming Important?

1. Rhyming teaches children about timing and meter in speech.
2. Rhymes help children begin to learn prosody, speaking and reading with expression.
3. Rhyming helps children make predictions related to speech sounds.
4. Rhyming while reading engages the visual and auditory centers of the brain.
5. Rhyming is fun and leads to social entrainment.

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**Musical Patterns
&
Sequences**


Musical tempo, rhythm and timing are among the first patterning experiences children have, beginning when we play simple hand games like "Peek-a-boo" and "Pat-a- cake" as toddlers. We then move on to hiding games like "Where is thumbkin"? Next, songs and simple nursery rhymes like "I'm a little teapot," and "Itsy bitsy spider" introduce patterns in language and movement combined with response inhibition, attention and working memory.

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Rhythm Matters in Reading

- Rhythm plays an organizational role in the prosody and phonology of language, and children with literacy difficulties have been found to demonstrate poor rhythmic perception, Lundetræ & Thompson, 2018
- Size and synchronization of the auditory cortex promotes musical, literacy, and attentional skills in children, Seither-Preisler et al, 2014.
- Rhythmic cues provide a regular temporal scaffolding supporting motor coordination Cochen De Cock et al, 2018.
- Responding to music helps improve self-control, as students anticipate changes in rhythm and tempo engaging their ability to wait, listen and respond Antonietti, 2018.
- Music provides structure to help students manage their internal timing according to variations in the external time of music while they synchronize behavior with external stimuli, Antonietti, 2018.

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What do you now know about dyslexia that you will take with you to improve your work?

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Play Matters Too

The children in our classrooms have lower language development, core, and physical skills than in the past, this impacts their executive functions which precede learning. They no longer swing on jungle gyms, swing on swing sets or play hopscotch and hand rhythm songs/games. Parents of young child need to know the research. Children need to get outside and play. They need to interact, draw, color, sing, dance, move and be connected.

The LiNK Project®: Effects of Multiple Recesses and Character Curriculum on Classroom Behaviors and Listening Skills in Grades K–2 Children – Rhea et al, 2018
<https://www.frontiersin.org/articles/10.3389/feduc.2018.00009/full>

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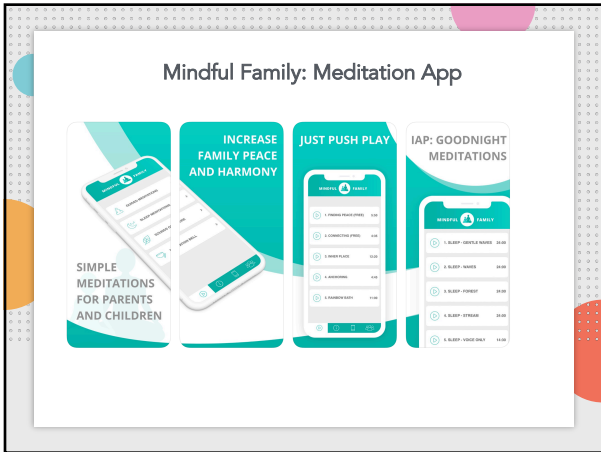
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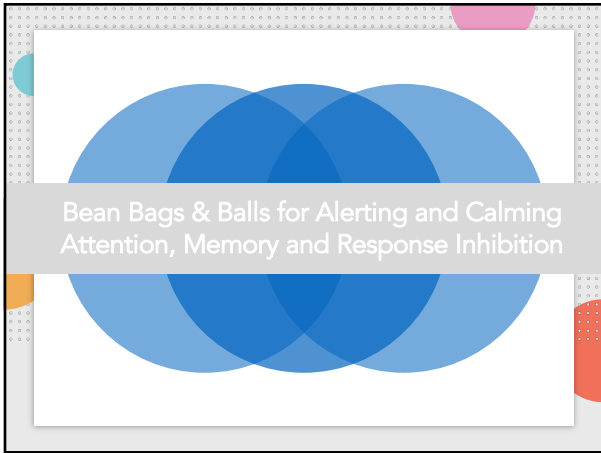
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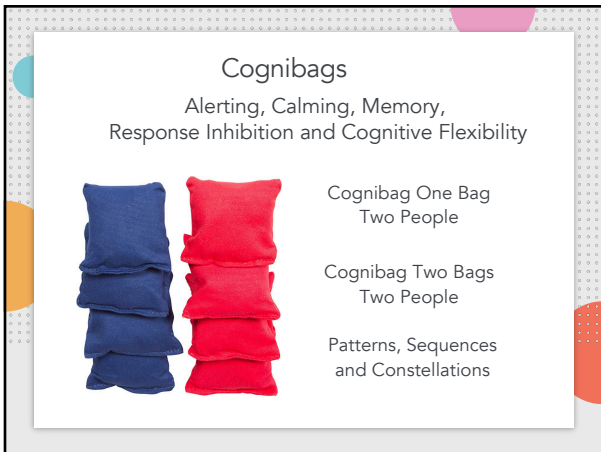
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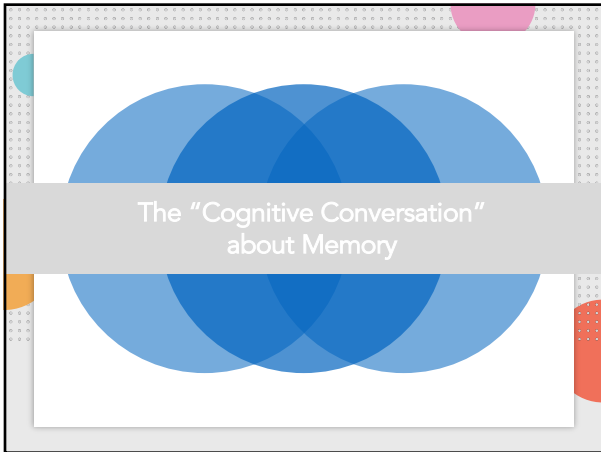
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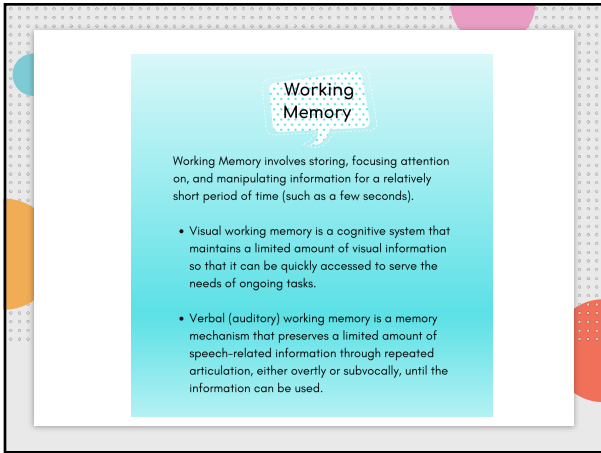
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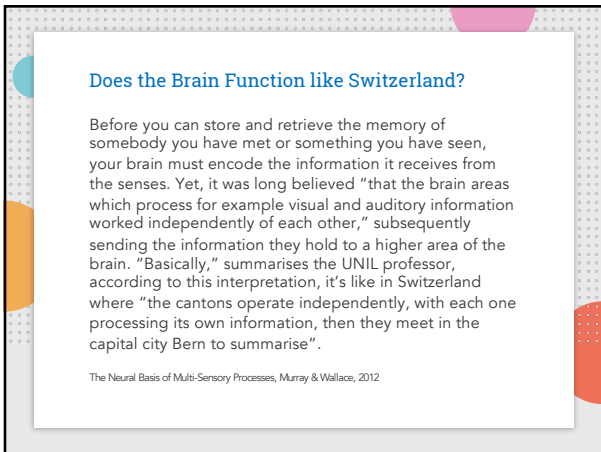
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A sound can help to remember an image...
 ... and an image can help to remember a sound

The better you are at combining visual and auditory information, the better you can remember what you've learned. This conclusion reached by neuroscientists at UNIL demonstrates the effectiveness of teaching methods which simultaneously make use of multiple senses.

University of Lausanne


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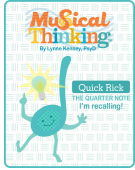
Memory Tips

- Use the V approach - What's the BIG concept, the specific concept and then the detail
- Make meaningful connections between concepts, how are these things related?
- Use visual + auditory stimuli when appropriate
- Let your student/child teach you
- Make a video of the child teaching the concept or information
- Create visual mindmaps
- Create written bubble or line webs of content
- Use Socratic questioning, ask more tell less
- Encode slowly with movement
- Walk it out, jump it out, walk up the stairs, do squats etc. while saying what you are trying to encode... in 4/4 time:).

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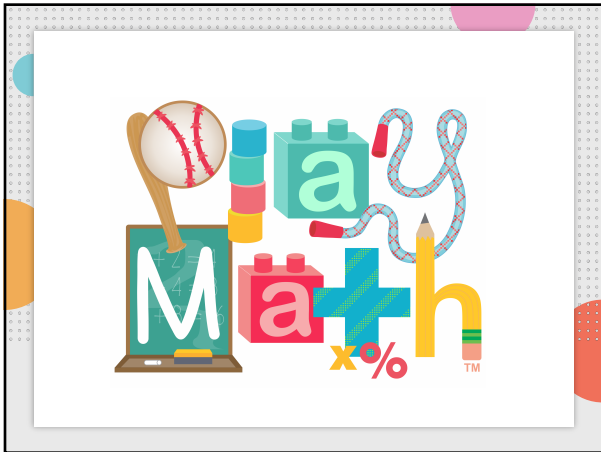
How We Encode and Retrieve



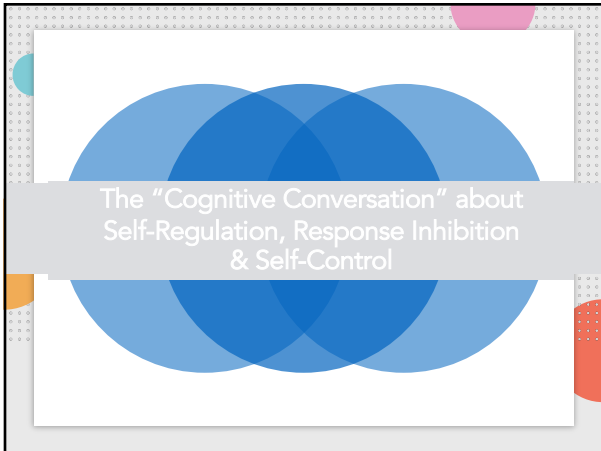


Memory _____

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The processes involved in self-regulation can be divided into three broad areas: **sensory regulation, emotional regulation and cognitive regulation**

Sensory Regulation allows children to maintain an appropriate level of alertness in order to respond appropriately across environments to the sensory stimuli present.

Emotional regulation is the ability of an individual to modulate an emotion or set of emotions.

Explicit emotional regulation requires **conscious monitoring**, using techniques such as learning to construe situations differently in order to manage them better, changing the target of an emotion (e.g., anger) in a way likely to produce a more positive outcome, and recognizing how different behaviors can be used in the service of a given emotional state. We often refer to this as **employing cognitive control**.

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Implicit emotional regulation **operates without deliberate monitoring**; it modulates the intensity or duration of an emotional response without the need for awareness. Source: APA

Cognitive regulation refers to the self-directed regulation of cognitions (thoughts, beliefs, affects) toward the attainment of goals. ... Some important processes are goal-setting, strategy use and adaptation, monitoring of cognition and performance, motivation (e.g., self-efficacy), and self-evaluation.

Cognitive regulation may also be referred to as self-control and effortful control.

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Someone who has good emotional self-regulation has the ability to recognize, identify and manage their emotions.

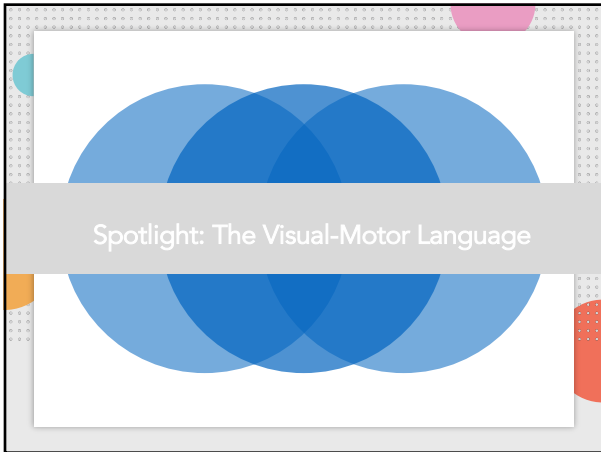
- This allows them to cope with the ups and downs of daily life without falling apart.
- They are able to shift their mood to a new state by employing positive coping skills.
- They are able to interact with others when over-energized by resisting responding with impulsive words, thoughts or actions.
- They experience a flexible range of thinking, communication and behavioral responses allowing themselves to adapt their thinking and behavior to best suit the task demands and stimuli in their environment.

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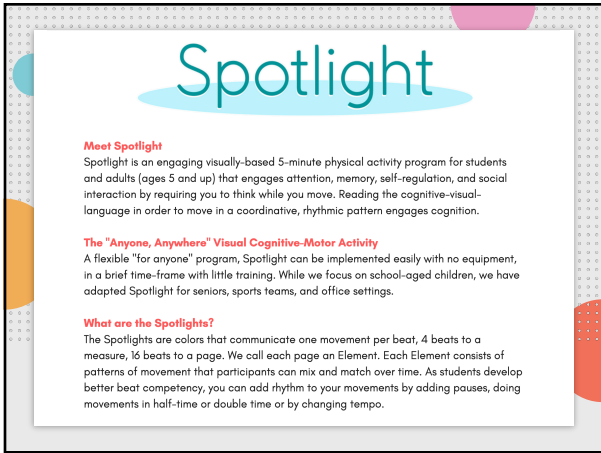
Q:

What do you now know about self-regulation and self-control that you may take with you to improve your work?

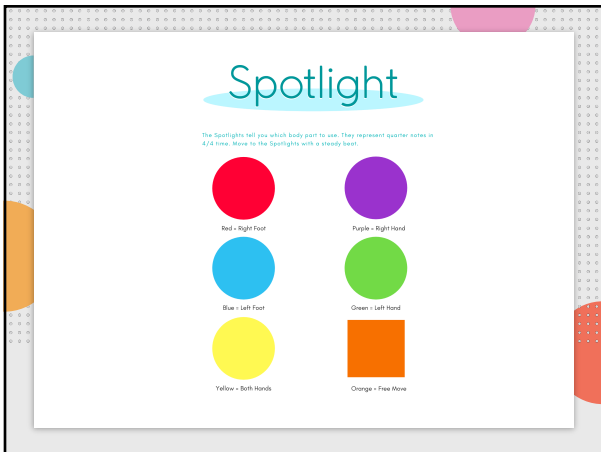
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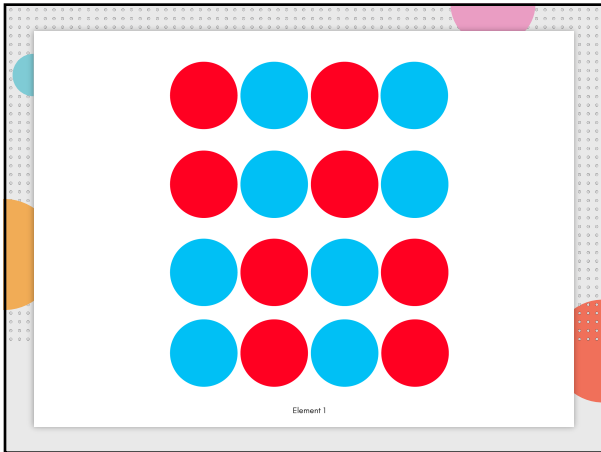
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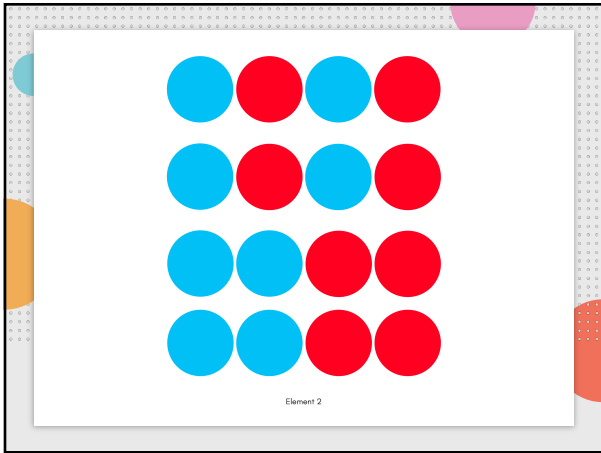
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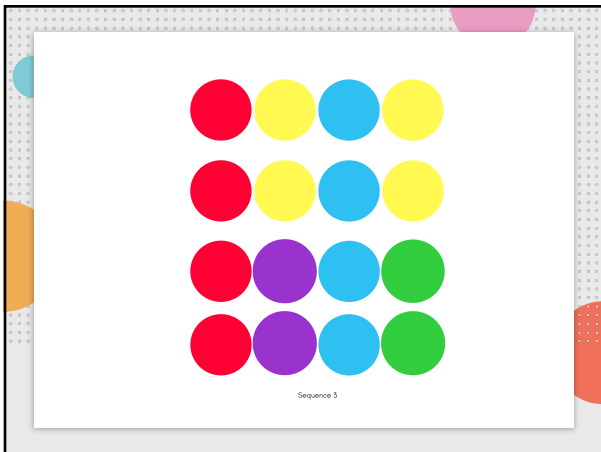
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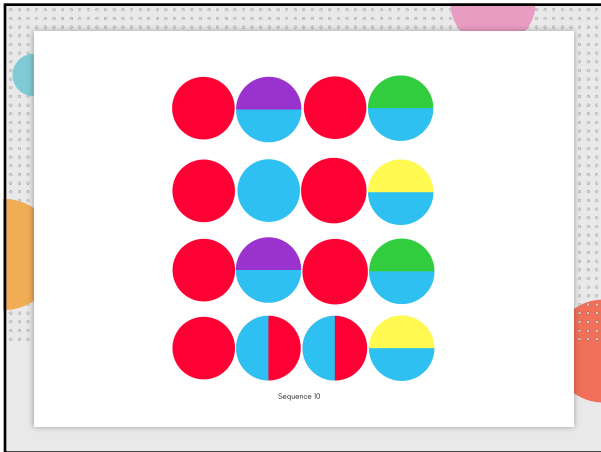
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Limitations of the Research and Potential Risks

- RCT's have been conducted in some areas of physical activity and cognition.
- The body of literature is larger for adults than it is for children e.g. gait and Parkinson's.
- Embodied cognition in children is a newer area of neuroscience in education, research is ongoing.
- Concepts such as the impact of tempo, timing and rhythm on cognition are theoretically driven, more research needs to be done.
- We are not yet sure what dose and duration of which types of activities are best for children with which types of symptoms.
- Research does suggest frequent dosing, e.g. 5-20 minutes several days a week may be best, more research is needed.
- Risks of these activities should be properly considered in light of a child's motor skills and fitness level.

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Rhythm Ball for Calming

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Swing, Sway, Swaddle, Sing, Hum

- Yoga
- Meditation
- Tai Chi
- Movement in 3, 5, 7, 9
- Hydration
- Deep Breathing
- Stretching
- Rocking
- Pressure Point Hand Massage
- Yoga Ball Belly Rocking
- Heavy Work

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Self-Regulation: Heavy Work

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Think-Ups Push-Ups
Count Aloud as You Move

<p>1 Medical Thinking</p> <p>4 Count Push-ups</p> <p>Whole push-up 1 2 (down) 3 4 (up) Repeat 5-4 sets.</p>	<p>2 Medical Thinking</p> <p>4 Count Push-up holds</p> <p>Whole push-up 1 2 (down) 5 4 (up). Hold (up) 2 3 4. Repeat 5-4 sets.</p>
<p>3 Medical Thinking</p> <p>8 Count Push-ups</p> <p>Super Slow</p> <p>Whole push-up 1 2 (down) 5 4 (up). Half-way down on 5 4 slowly up on 1 8. Repeat 5-4 sets.</p>	<p>4 Medical Thinking</p> <p>Half Push-up holds</p> <p>Whole push-up 1 (down) hold 2 3 4. Half-way up on 5 4 call the way up on 7 8. Repeat 5-4 sets.</p>
<p>5 Medical Thinking</p> <p>8 Count Pulse Push-ups</p> <p>Super Slow</p> <p>Whole push-up 1 (down) hold 2 3 4. Up on 5 pulse 6 7 8. Repeat 5-4 sets.</p>	<p>6 Medical Thinking</p> <p>4 Count Leg Push-ups</p> <p>Push-up position. Right leg "up 2 3 down", left leg "up 2 3 down" Repeat 5-4 sets.</p>

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