Training the Visual in Visual Attention

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1

Visual Attention

We are aware of only a small portion of information that is bearing down on us.

What determines what we attend to?

How can we strengthen visual processing for attention?

2

Vision Involves Two Visual Systems

Focal - identification, eyesight

Ambient - localization in space, speed of processing information, spatial orientation

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Important Visual Factors

- Fixation / Visual Tracking and Locating
- Focus Flexibility
- Eye Teaming

These skills lead to sustained visual attention *over time* and fast processing speed

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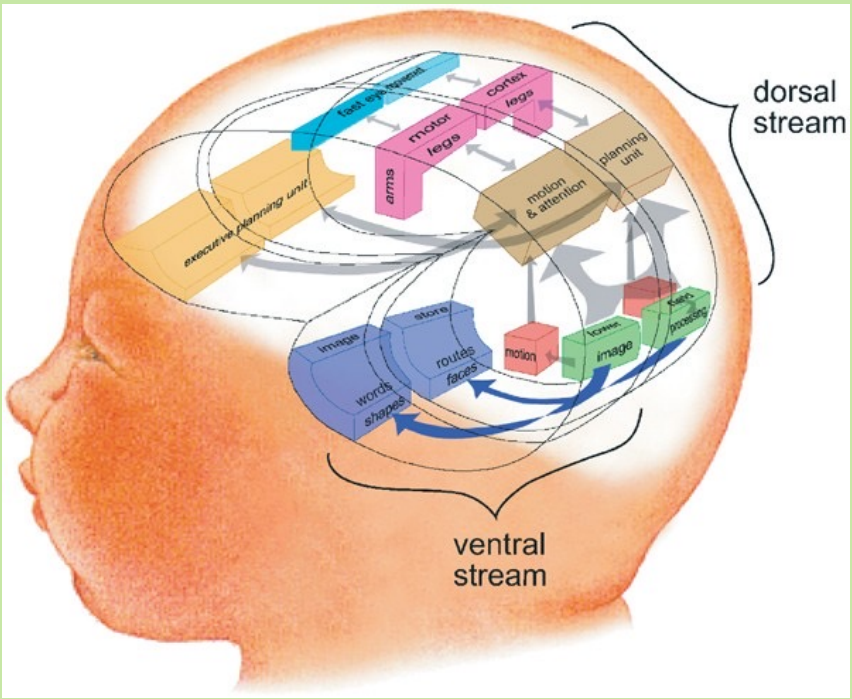

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Skeffington Circles for Visual Perception

Dr. Arthur Skeffington, known as the "Father of Behavioral Optometry", developed the 4 circles model for visual perception.

This model illustrates key areas to better understand the vision system and its capacity.

For instance, we can use the model to determine where a patient is in their vision development and diagnosis.

The following diagram illustrates Skeffington's circles

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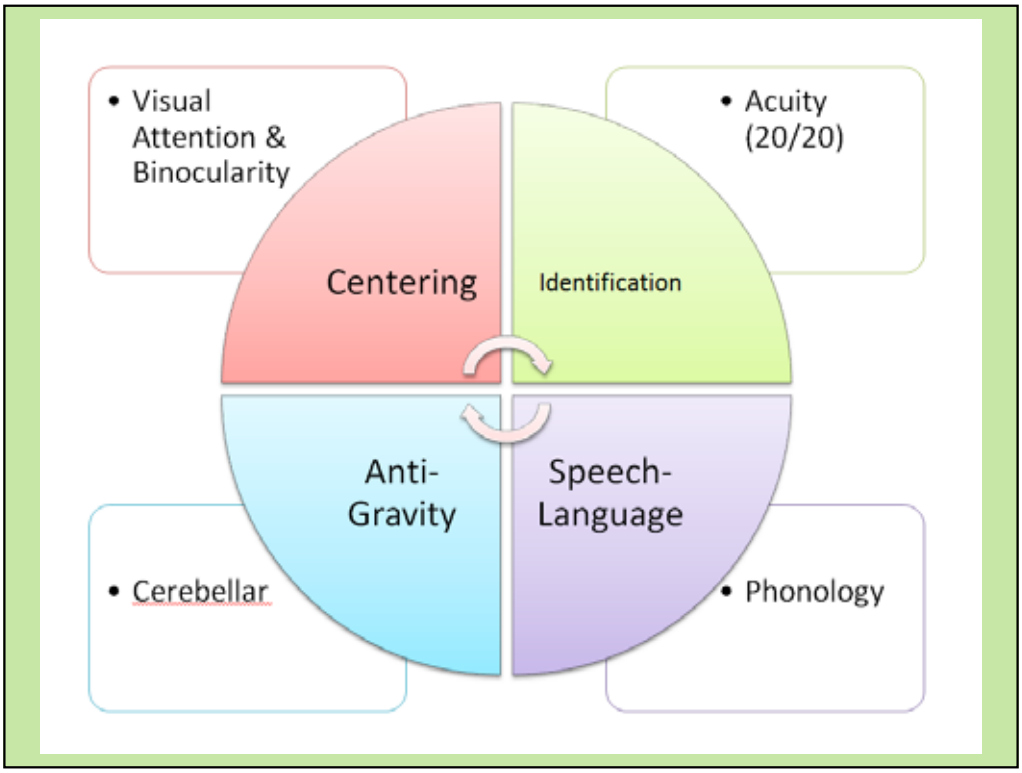

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Why is Selective Attention Necessary?

Conscious experience seems to have a limited capacity

We can only attend to one thing at a time.

Attention helps us decide where to move our eyes next.

Our perception of a scene is developed by a combination of attention, eye movements, and memory.

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The task has a strong influence on where you attend and look

The Unexpected Visitor

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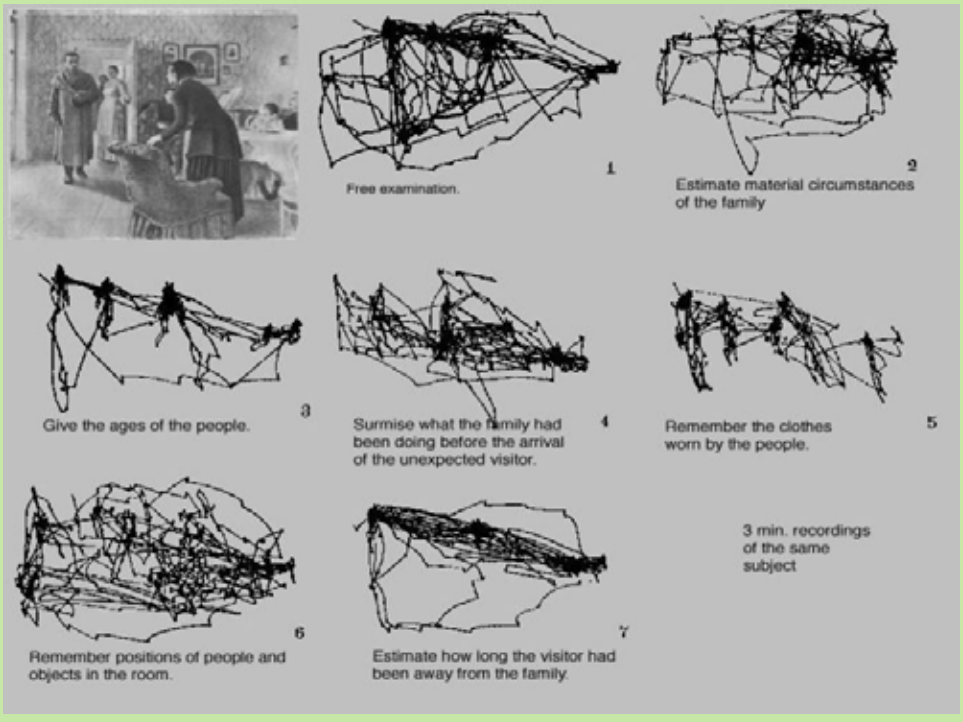

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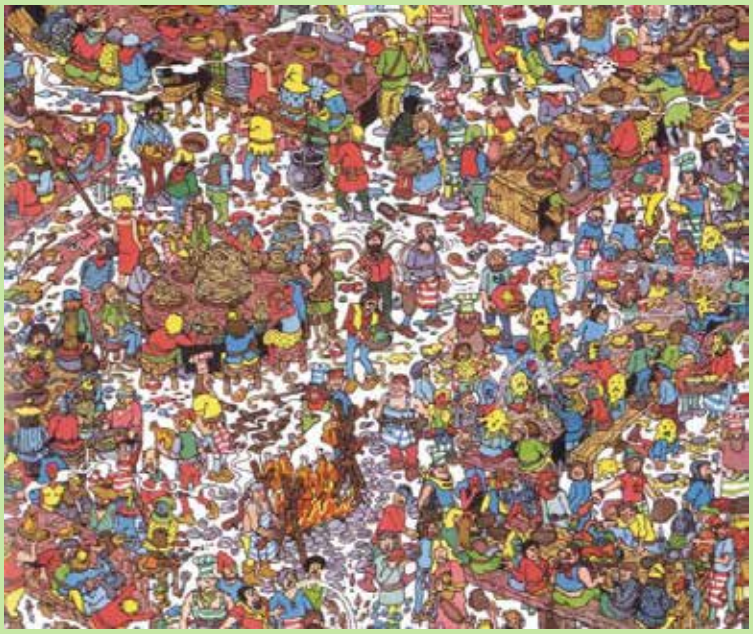
We use attention to determine where to move our eyes (saccade) next.



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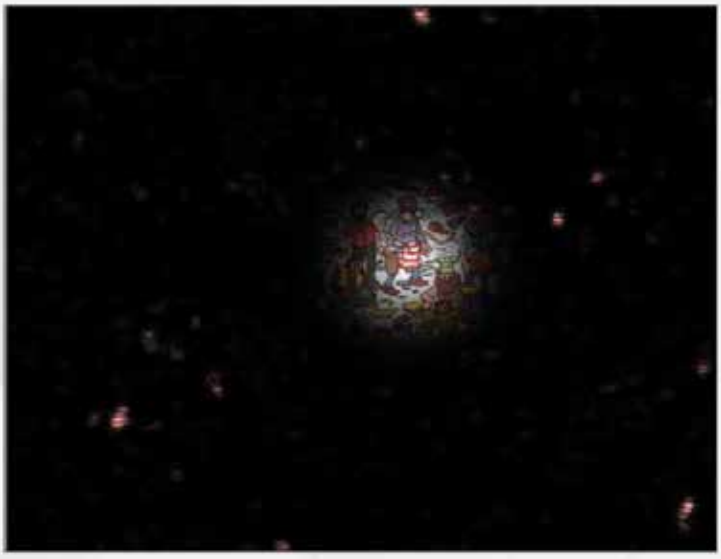
We use **spatial attention** to highlight everything at a particular location



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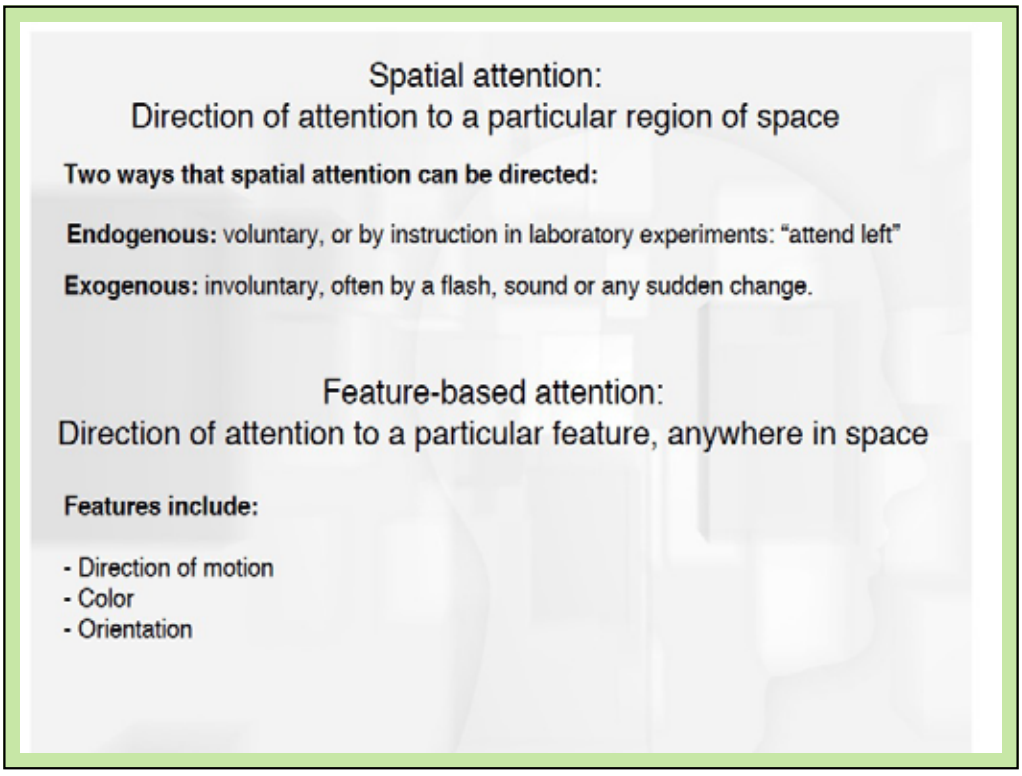

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Video

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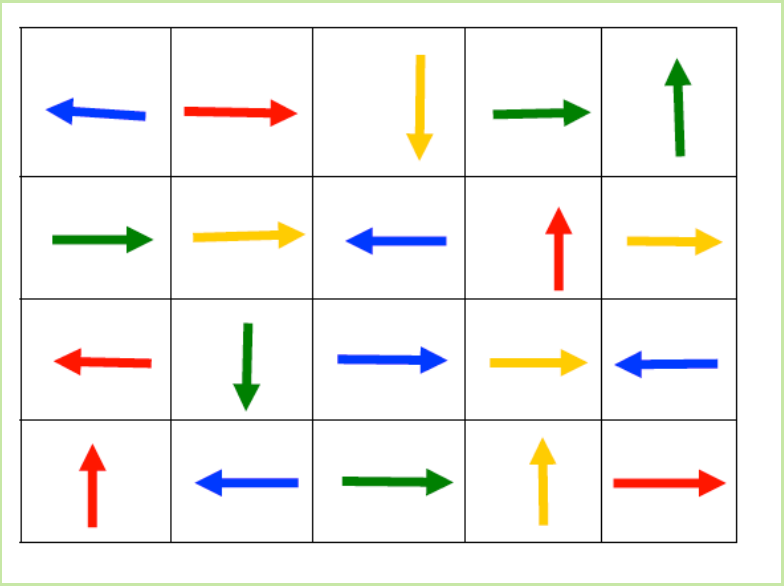

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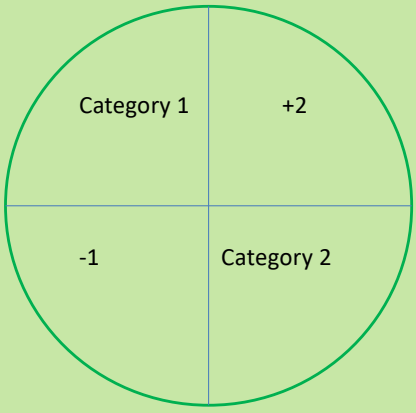
Fukushima Circle



- Start with the number e.g 2.
- Say a word that belongs to the first category in the top left of the circle.
- Move clockwise to the next section of the circle. Add two (+2) to the number you said last (here it's the one you started with) and say the answer: 2 + 2 = 4.
- Say a word that belongs to the category at the bottom right of the circle.
- Then going clockwise, subtract one (-1) from the last number you said and say the answer: 4 – 1 = 3.
- Continue moving around the circle clockwise without repeating a word.
- Try to go until you e.g say the number ten or see how long you can go before scoring three outs.

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Figure 1: What is this? This picture is not an illusion but a photograph of a familiar subject. Can you see what it is? Figure 2 overleaf should help you

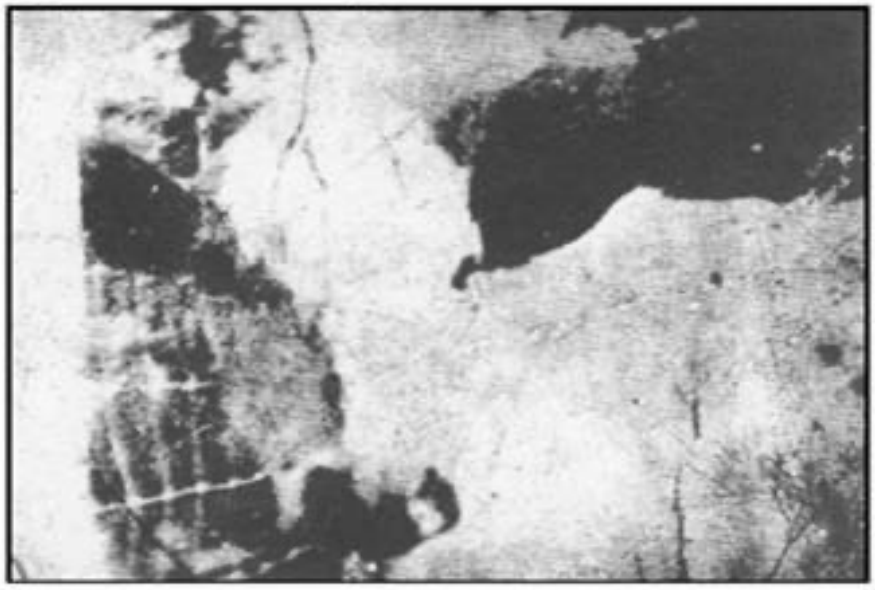

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Figure 2: The same as Figure 1 but with enhancement

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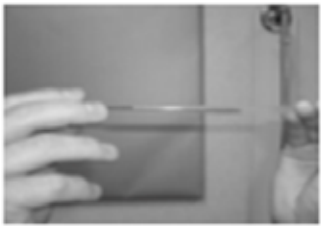
Pointer and Straw

Start with one eye patched and the child's dominant hand.

Child holds the pointer behind his ear.

Three positions for the straw:

a. face on (open end toward the child)
b. straw held vertical
c. straw held horizontal



Repeat with the other eye.

Repeat with both eyes together.

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Integration of Sensory Movement Action

SLAP TAP - To integrate visual processing with physical action and speech-language.

The shapes and the patterns are read in a left to right, top down sequence with the symbols being converted to both physical actions and verbal labels along with the metronome for processing speed.

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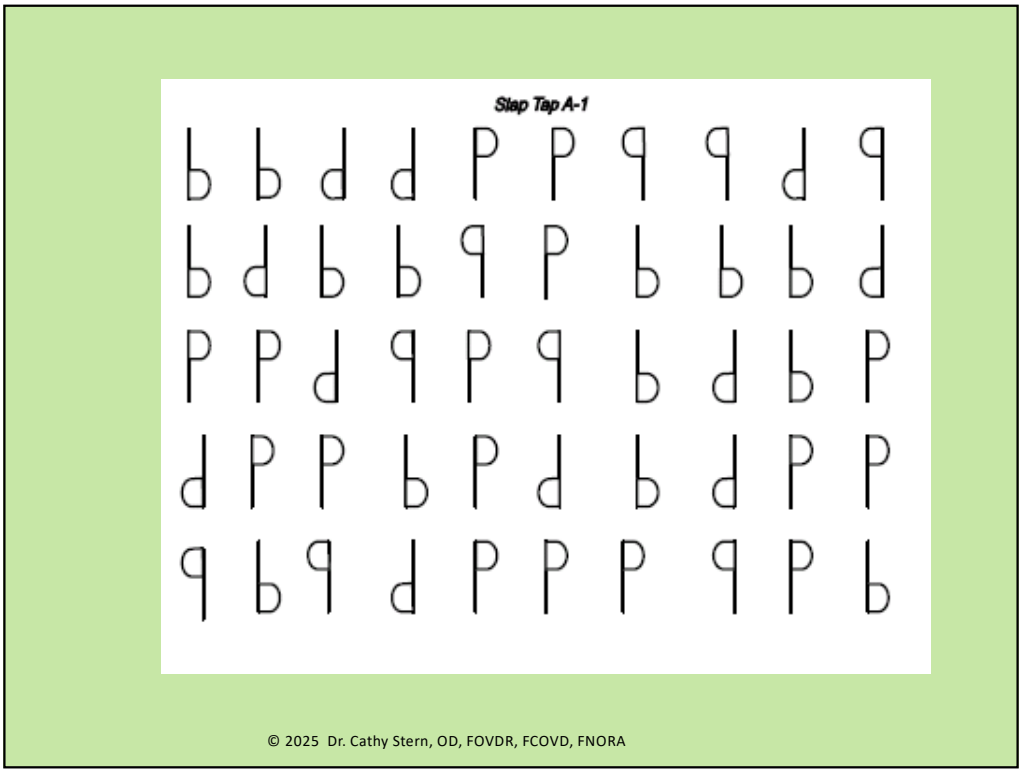

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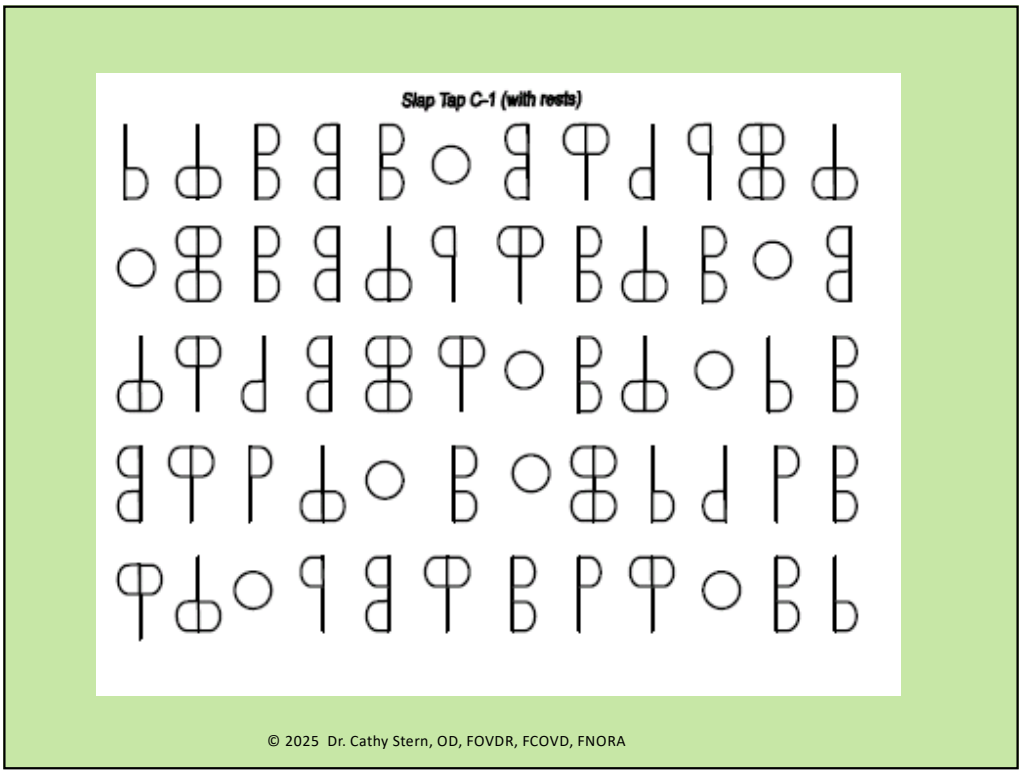

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