



Perceptual Processes and Assessments



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Neglect...

"...is an inability to integrate & use *perceptual* information from one side of the body or environment." (Guttman, 2009; p.73)

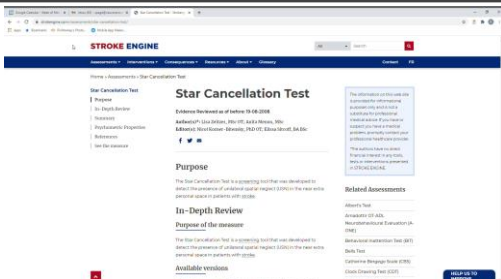
...causes worse admission & discharge scores (eg, Timbeck et al, 2013)

...is a significant predictor of mortality (Appelros et al., 2003)

...is significant predictor of dependence in ADLs 6 & 12 months post stroke (eg, Appelros et al, 2002)

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Stroke Engine Assess



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Catherine Bergego Scale (CBS)

10-items

Assesses performance of different daily activities (not test situations)

Can be given by proxy

	0	1	2	3
1. Forgets to groom or shave the left part of his/her face	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Experiences difficulty in adjusting his/her left sleeve or slipper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Forgets to eat food on the left side of his/her plate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Forgets to clean the left side of his/her mouth after eating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Experiences difficulty in looking towards the left	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Forgets about a left part of his/her body (eg. forgets to put his/her upper limb on the armrest, or his/her left foot on the wheelchair rest, or forgets to use his/her left arm when he/she needs to)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Has difficulty in paying attention to noise or people addressing him/her from the left	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Collides with people or objects on the left side, such as doors or furniture (either while walking or driving a wheelchair)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Experiences difficulty in finding his/her way towards the left when traveling in familiar places or in the rehabilitation unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Experiences difficulty finding his/her personal belongings in the room or bathroom when they are on the left side	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total score (/30)				
0=no neglect; 1=mild neglect; 2=moderate neglect; 3=severe neglect				

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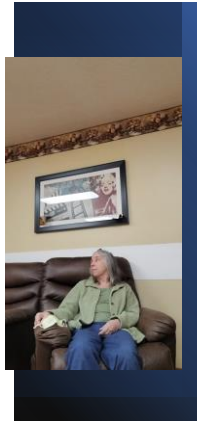
Neglect Video Example

Attends to stimuli on right

Neglects verbal & tactile stimuli to left

Bergago (by nurse):

- Personal: 2 (L slipper; L UE in sweater)
- Peripersonal: 0
- Environmental: 10



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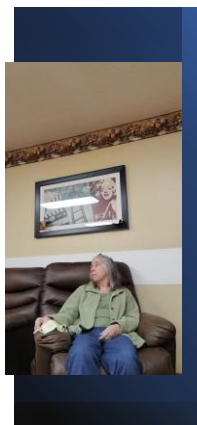
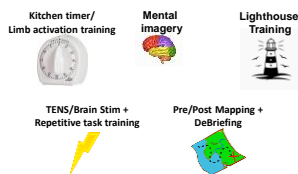
What would you do?

Bergego (by nurse):

- Personal: 2
- Peripersonal: 0
- Environmental: 10

STRETCH HER PERCEPTUAL FIELD

♥ INCORPORATE MEANINGFUL ITEMS



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Ideational Apraxia

- Breakdown of what is to be done
- Lack of knowledge of how to utilize items/may not know what to do with common items
 - Dissociation between "naming" and the praxis system "doing"
- Multiple objects, multicomponent tasks → greater difficulty

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Ideational Apraxia Video Example



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Reduce number of items/add back in as a single component is successfully accomplished (6-7/10)

Verbalize as they perform the task

Mental imagery

Ideational Apraxia:

What would you do?

Ask leading questions

Post a "to do" checklist on the wall or counter

Use brands & items from home with which they're familiar.

Reflect/Write out a diary/log. Recall how they did/how many correct/how long to recall, etc.

Tactile cueing

Verbal cueing

 This block contains a collage of images and text. At the top, it says "Reduce number of items/add back in as a single component is successfully accomplished (6-7/10)". Below this, there are several icons and text boxes. On the left, a speech bubble says "Verbalize as they perform the task". In the center, there is a small image of the coffee maker from the previous slide. To the right of the coffee maker, there is a brain icon labeled "Mental imagery". Below the coffee maker, there is a text box that says "Post a 'to do' checklist on the wall or counter". To the right of this, there is a text box that says "Use brands & items from home with which they're familiar." Below the coffee maker, there is a small image of a person writing in a diary, with a text box that says "Reflect/Write out a diary/log. Recall how they did/how many correct/how long to recall, etc." To the right of this, there are two icons: a hand pointing to a list labeled "Tactile cueing" and a person speaking labeled "Verbal cueing". On the far left, there is a question mark icon labeled "Ask leading questions".

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Ideomotor Apraxia

- Breakdown of knowledge of how task is to be performed
- May appear as:
 - Movement errors ("misses;" unusual fasciculations; unusual or "clumsy" joint coordination)
 - Postural errors (posture away from/unusual orientation to object)

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Ideomotor Apraxia Video Example ("Fasciculation")



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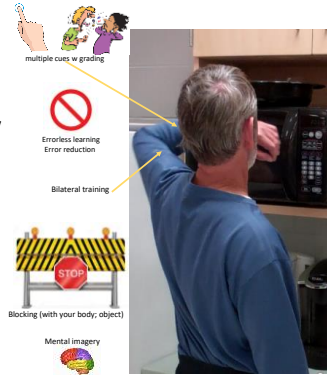
Ideomotor Apraxia Video Example ("Misses")



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Ideomotor Apraxia:

What would you do?



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Apraxia Treatment Strategies

	Apraxia Type(s)	Treatment Items	Duration	Intensity	Treatment Effect	Generalization	Maintenance	Apraxia Impact	ADL Impact
Multiple Cues (n=1)	BMA	gestures	2 weeks	One hour daily	Y	Y	Y (word items only 2 weeks)	NA	NA
Error Type Reduction (n=2)	BMA	gestures	Varied, 6-11 weeks	Varied, once daily 4 days/week twice daily 2 days/week	Y	N	Y (word error type only 2 weeks)	N	NA
Six Stage Task Hierarchy (n=1)	BMA + IA	gestures	8 months	45 minutes, once weekly	Y	N	NA	N	NA
Conductive Education (n=1)	BMA	gestures	3 weeks	Daily	Y	N	NA	NA	NA
Strategic Training (n=8)	IAT*	ADL	Varied, 8-12 weeks	Varied, 25 sessions, 15-35 sessions, 50 minutes each	Y	Y	N (3 months)	Y	Y
Transitive Intransitive Gesture Training (n=13)	BMA	gestures	10-11 weeks	35 sessions, 50 minutes each	Y	Y	NA	Y	NA
"Rehabilitative Treatment" (n=20)	IA or BMA	gestures	10 weeks	30 sessions, 50 minutes each	Y	Y	Y (2 weeks)	Y	Y
Errorless Completion-Exploration Training (n=15)	NA	ADL	2-5 weeks	3 days/week plus 20-40 minutes practice daily	Y	N	Y (8-10 months)	NA	NA
Errorless Completion (n=6)	BMA	ADL	2 weeks	6 sessions, one hour each	Y	N	Y (3 months)	NA	NA
Exploration Training (n=6)	BMA	ADL	2 weeks	6 sessions, one hour each	N	N	N (3 months)	NA	NA

Legend: BMA = ideomotor apraxia, IA = ideational apraxia, Y = yes, N = no, NA = not assessed or information provided
* "ability to carry out purposeful activities"

Buxbaum et al., 2008

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Apraxia Versus Ataxia

(see infographic in reference materials)

APRAXIA	ATAXIA
DEFINITION	DEFINITION
Motor planning disorder in which a patient has difficulty with motor planning steps needed to complete learned movements	Motor coordination disorder in which a patient presents with jagged, shaky or dysmetric movements, leading to poor balance and clumsiness of all movements
ETIOLOGY	ETIOLOGY
Central nervous system etiologies, most commonly in the parietal cortex and corpus callosum	Central nervous system etiologies, most commonly in the cerebellum
PRESENTATION	PRESENTATION
Ideational Apraxia: inability to complete previously learned, functional movements (e.g., comb hair when presented a comb)	Positive finger to nose test or heel to shin test with jagged movements when moving from one target to the other
Ideomotor Apraxia: biomechanically incorrect/awkward movement following verbal command, however, able to complete spontaneously	Dysmetria noted with abstract and functional movements in which the patient under or over shoots the target
TREATMENT CONSIDERATIONS	TREATMENT CONSIDERATIONS
<ul style="list-style-type: none"> Limit complexity and amount of cuing; use single joint, learned movements Visual and tactile cues Work first on simple, part to more complex, whole tasks 	<ul style="list-style-type: none"> Provide proprioceptive input using weights, braces, etc. to bring increase body awareness and slow movements to improve motor control and tremulous movement Provide visual targets for foot or hand placement

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Apraxia Screen of Tulia (Test for Upper Limb Apraxia)

- Apraxia is often accompanied by aphasia
 - Objects or gestures rather than language as the trigger for actions.
 - Are deficits after verbal instructions d/t apraxia, or not fully understanding instructions?
- >20 tests;
 - A "good" clinical measure should have objects and gestures; quick and easy for clinical implementation; cutoff scores; well vetted
- Apraxia Screen of Tulia (AST; Vanbellingen et al; 2011): "high diagnostic reliability with high specificity, sensitivity and positive predictive value, for the presence and severity of apraxia"

Novern et al., *Neurology*, 2012

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AST (in reference documents)

	right	left
1. Bring thumb extended on forehead, other fingers point upwards		
2. Wipe dust from shoulder		
Additional instruction: "For the next five gestures, imagine holding a tool or an object in hand, don't use your fingers as a tool"		
3. Drink from a glass		
4. Smoke a cigarette		
5. Use a hammer		
6. Use scissors		
7. Use a stamp to postmark		
Pantomime		
General instruction: "Now gestures are asked. Listen very carefully and perform them as precisely as possible"		
8. "Show as if someone is crazy" *		
9. "Make a threatening sign" **		
Additional instruction: "Again, imagine holding a tool or an object in hand, don't use the fingers"		
10. "Brush your teeth"		
11. "Comb your hair"		
12. "Use a screwdriver"		
Total Score		

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Questions?

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