

Fibrofog

Executive functioning in persistent pain

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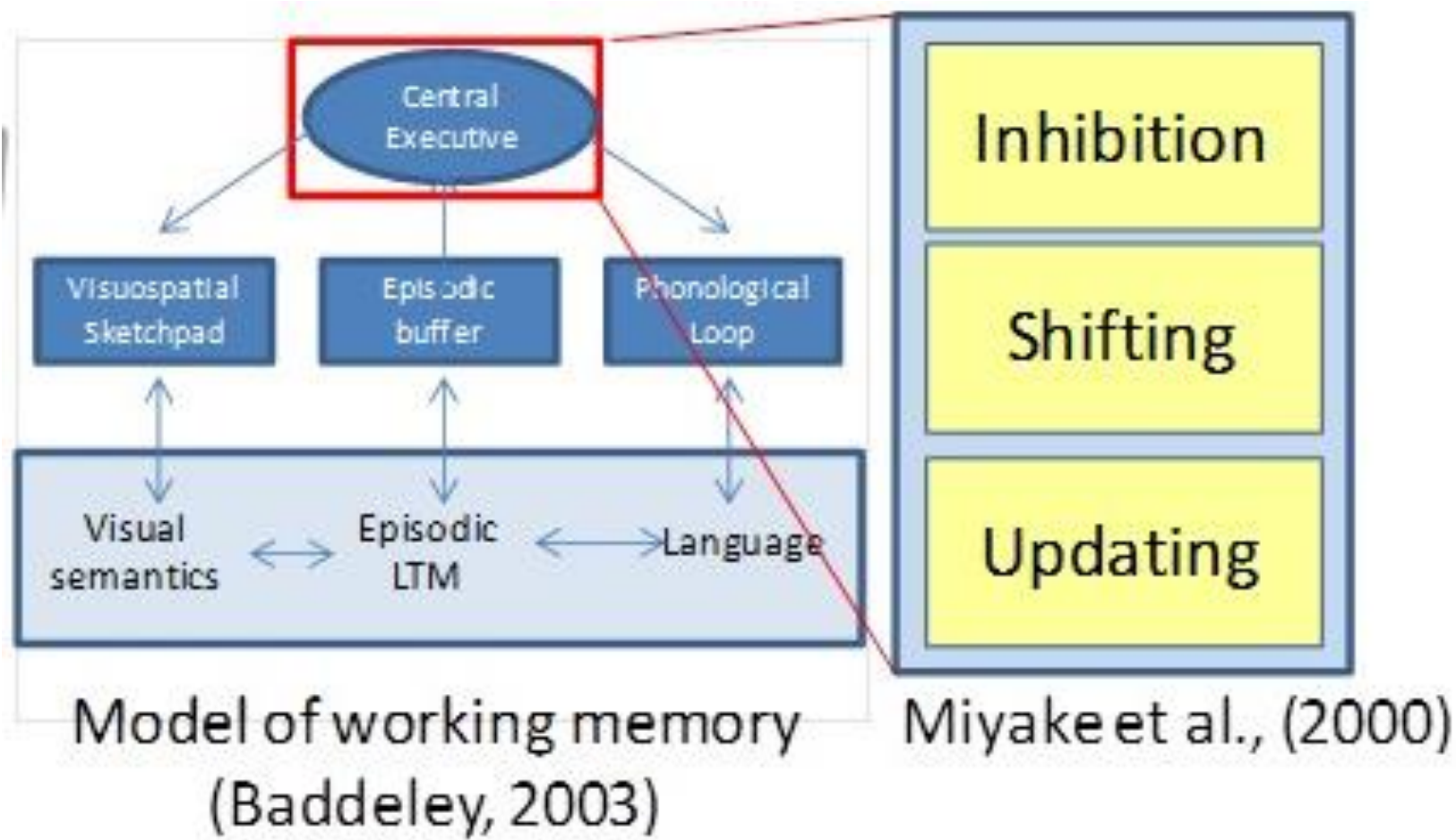
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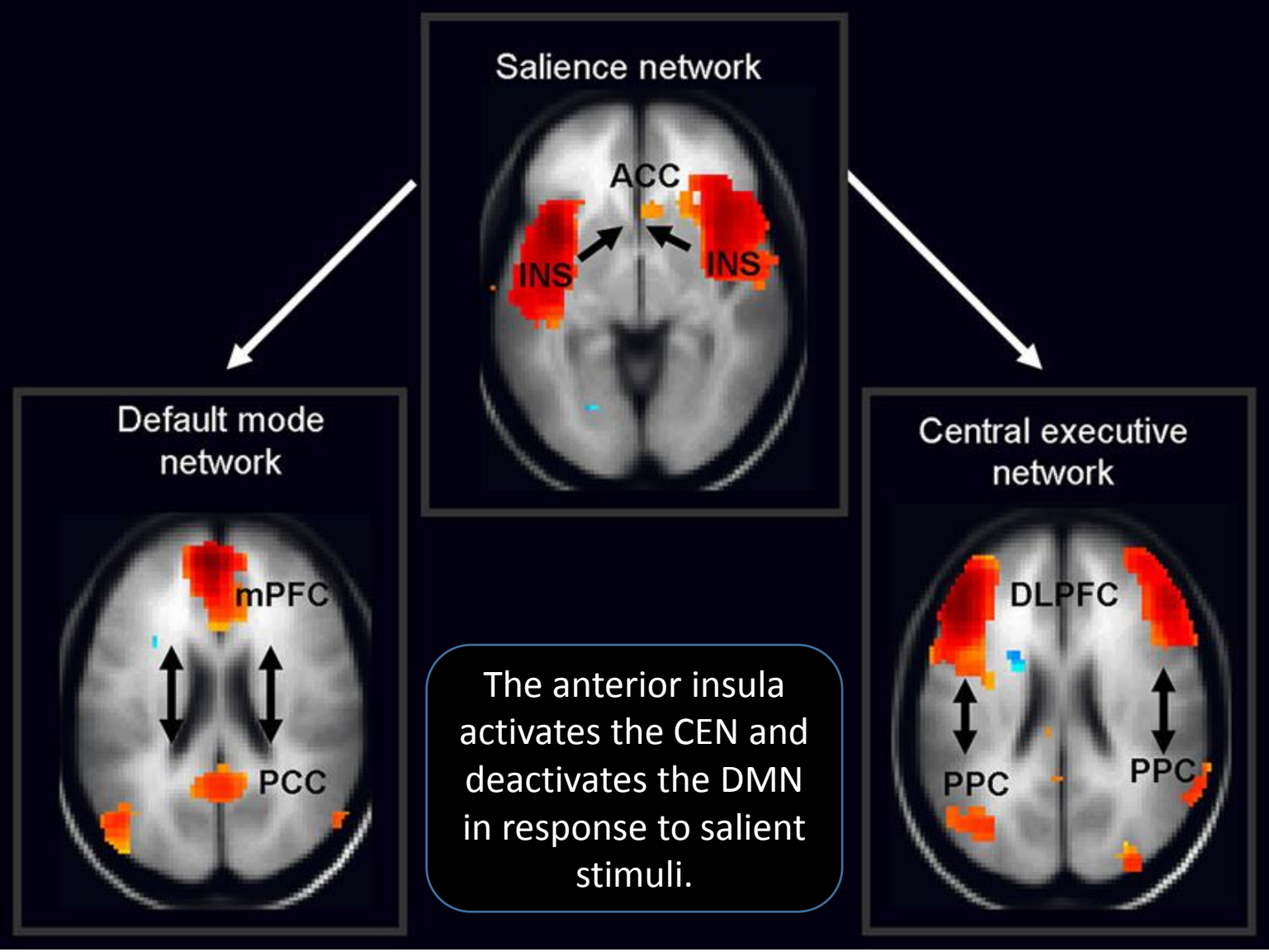
Summary of current knowledge

- **54 % of LT pain patients report a decline in executive functioning**
- However: studies fail to differentiate between different LT pain states
- There are large differences in experimental conditions
- Definitions and tests of executive functioning tend to vary
- Cognitive decline could be the result of misclassification

What does this mean?

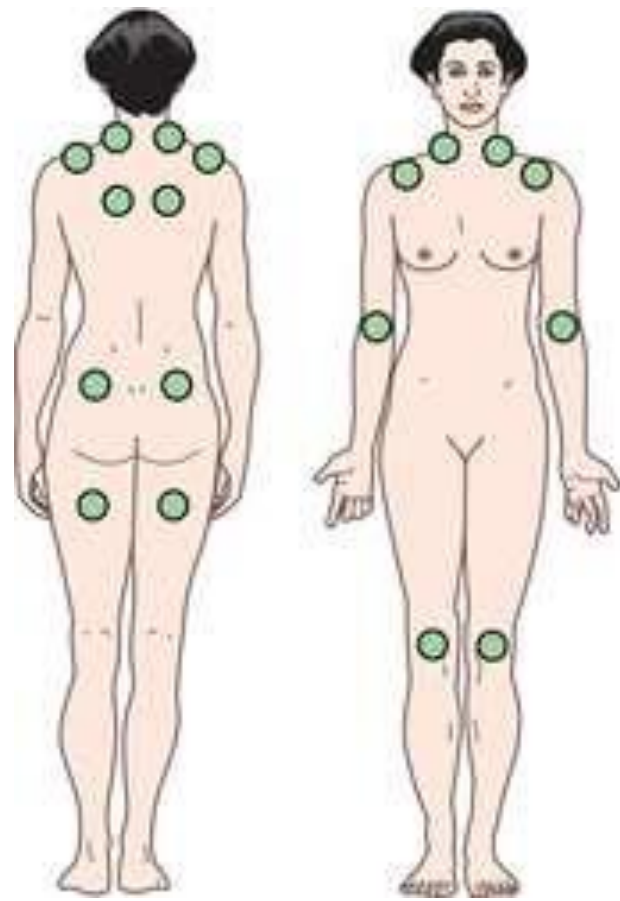
- Executive functioning describes a set of modifiable cognitive abilities important for almost all tasks in everyday life
- Three separate modifiable processes are essential to executive control and attention:
 - Updating
 - Shifting between tasks or mental sets
 - Inhibition





What is wrong with the functioning?

- **Two categories used in meta-analyses:**
 - Fibromyalgia pain
 - Non-fibromyalgia pain



Results related to correct answers:

- Chronic fibromyalgia pain was not associated with poorer Response Inhibition, pooled results from five comparisons across four studies showed a non-significant effect estimate of -0.07 (95% CI = -0.24 to 0.39).
- For Complex Executive Function in chronic fibromyalgia pain, pooled results from six comparisons across four studies showed a **medium, significant effect estimate** of -0.57 (95% CI = -0.94 to -0.20).
- Set shift was not associated with chronic fibromyalgia pain looking at pooled results from four comparisons across four studies.

Results related to reaction time:

- For chronic fibromyalgia pain, pooled results showed no significant effect on Response Inhibition.
- No studies of CEF recruited people with fibromyalgia.
- For **Set Shift reaction time, chronic fibromyalgia pain, pooled results from four comparisons across two studies showed a medium, significant effect estimate of 0.57 (95% CI = 0.18 to 0.96).**



Results related to correct answers:

- Chronic non-fibromyalgia pain was not associated with Response Inhibition. There was a non-significant effect estimate of -0.33 (95% CI = -0.86 to 0.20) from three comparisons across two studies.
- Chronic non-fibromyalgia pain showed no association with decreased Complex Executive Function with a non-significant effect estimate of -0.38 (95% CI = -0.83 to 0.07) from six comparisons across five studies.
- With regards to **set shift in chronic non-fibromyalgia pain, there was a small, significant effect estimate** of -0.32 (95% CI = -0.53 to -0.11) for pooled results from three comparisons across three studies.

Results related to reaction time:

- Chronic non-fibromyalgia pain here showed an association with **impaired Response Inhibition**. Pooled results from 17 comparisons across nine studies showed a small, significant effect estimate of 0.43 (95% CI = 0.15 to 0.70).
- In CEF non-fibro pain patients took longer overall to complete the chosen test ($F[1-63] = 5.28$, $p < .05$, $\eta^2 = 0.07$), had significantly more omissions in the second half of the test and showed significantly more completion time variance.
- **Also here, chronic non-fibromyalgia pain was associated with poorer Set Shifting**. Pooled results from eight comparisons across four studies showed a medium, significant effect estimate of 0.59 (95% CI = 0.26 to 0.92).

How to help?

- Lumosity
- Cogmed
- Brain HQ
- Cambridge Brain Sciences



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A Consensus on the Brain Training Industry from the Scientific Community



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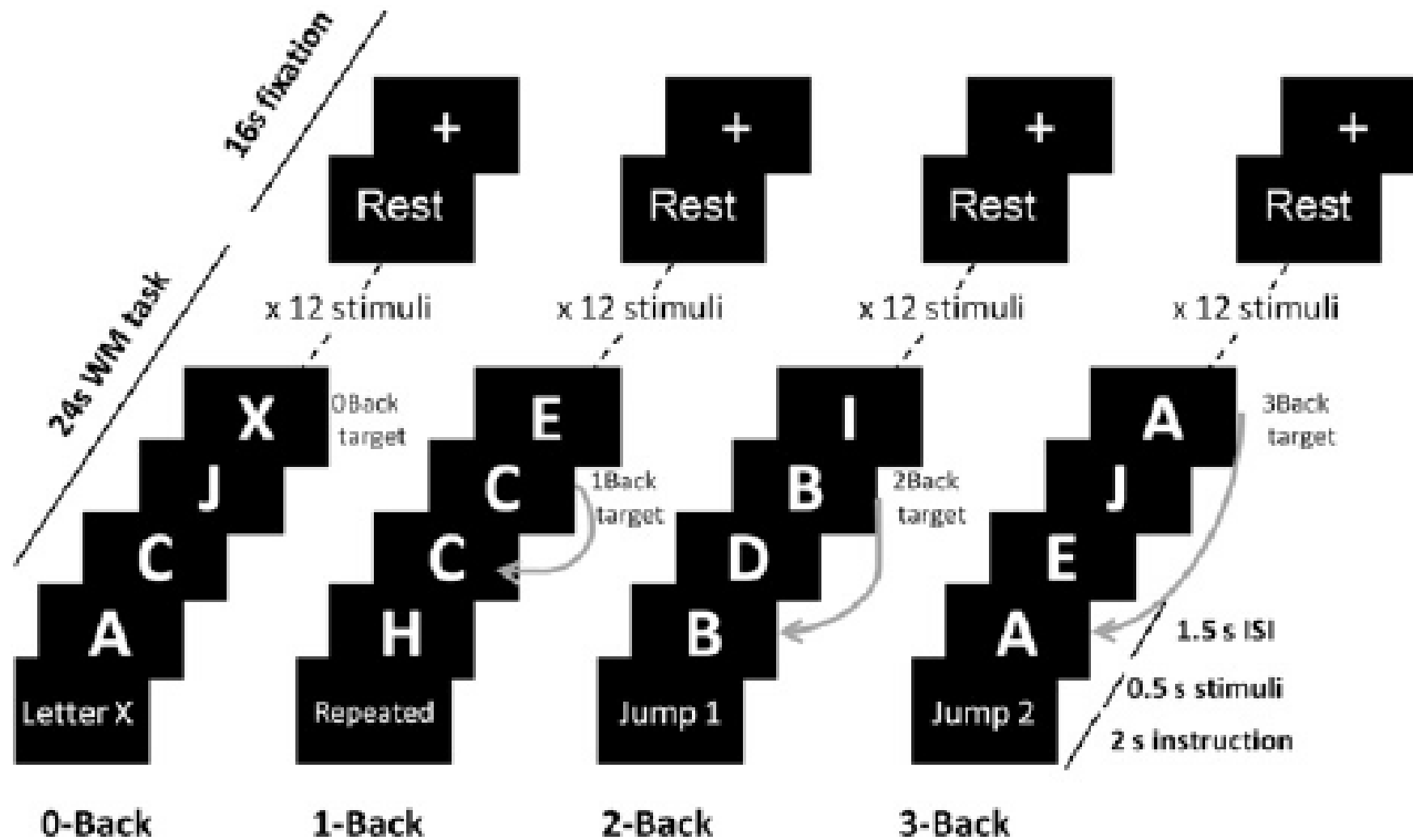
We object to the claim that brain games offer consumers a scientifically grounded avenue to reduce or reverse cognitive decline when there is no compelling scientific evidence to date that they do...

Effectiveness of working memory training among subjects currently on sick leave due to complex symptoms

Julie K. Aasvik¹, Astrid Woodhouse², Tore C. Stiles³, Henrik B. Jacobsen⁴, Tormod Landmark⁵, Mari Glette¹, Petter C. Borchgrevink^{1, 4, 5}, Nils I. Landro^{1, 5, 6}

Results indicate that working memory training does not improve general WM capacity per se. Nor does it seem to give any added effects in terms of targeting and improving self-perceived memory functioning.

Results do however provide evidence to suggest that inhibitory control is accessible and susceptible to modification by adaptive working memory training.



Then what to do?

- We can train attentional inhibition – but what about task switching and goal directed behavior?
- Brain regions that underlie language functions are also involved during preparation for task switches.
- Context-sensitive behavioral adaptation is linked to the triggering of cognitive control processes.
- We should train task switches and context-sensitive behavioral adaptation

Goal Pursuit in Individuals with Chronic Pain: A Personal Project Analysis

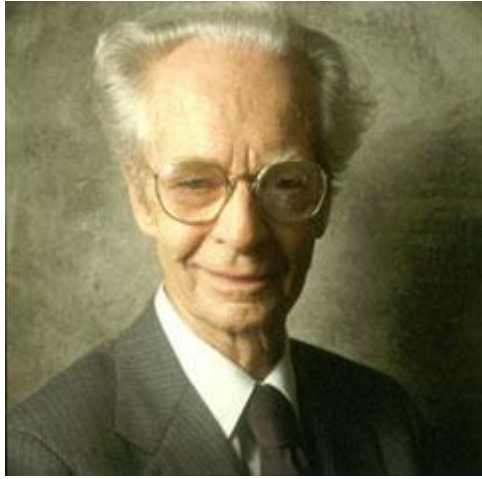
Geert Crombez^{1,2}, Emelien Lauwerier³, Liesbet Goubert¹ and Stefaan Van Damme¹*

Patients become stuck in attempts to control their pain...

The solution does not only require an understanding of how individuals appraise their pain, but also requires an understanding of how pain and non-pain goals interrelate.

In particular, the view that controlling pain is necessary in order to be able to achieve other goals seems detrimental.





	Baseline			Post-Intervention		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Full Scale IQ	82.88	8.29	70–92	95.88	10.62	76–111
Verbal Comprehension	82.25	7.32	73–93	92.38	9.20	83–110
Perceptual Reasoning	82.13	10.25	65–96	94.50	6.65	84–106
Working Memory	94.88	16.56	59–116	97.50	12.29	77–116
Processing Speed	91.00	9.84	83–109	107.00	15.64	78–121

