



Topic

脑卒中单侧忽略研究进展及临床研究分享
Research Progress of unilateral neglect in post-stroke patients and a clinical study sharing

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Definition

q Unilateral Neglect (UN)

- § A common and heterogeneous behavioral disorder follows brain injury, especially right brain stroke ([Azouvi, Samuel, et al., 2002](#))
- § Typically feature of UN is described as inability to report or respond to the stimulation presented from the contralesional space ([Mesulam, 1999](#))

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Definition

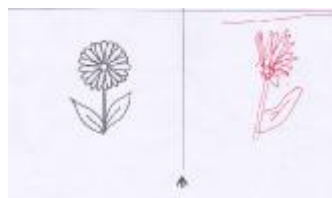
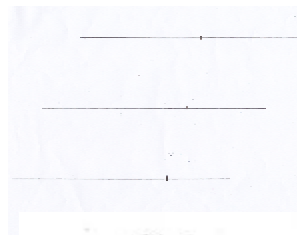
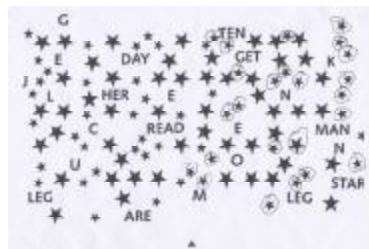
q Unilateral Neglect (UN)

- The left side of space appears to be invisible
- May fail to dress or wash the hemiplegic side of the body or brush teeth one side only
- May eat food only on one side of the plate
- May start reading a sentence from the middle of the page
- Fail to attend to objects and people on the left side
- Walking through a doorway, the individual may veer to one side or bump into the doorframe

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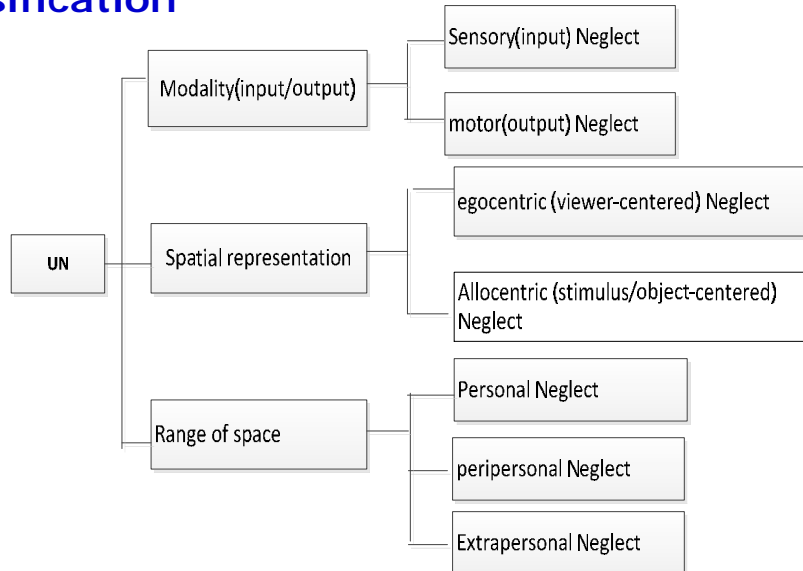
Definition

q Unilateral Neglect (UN)



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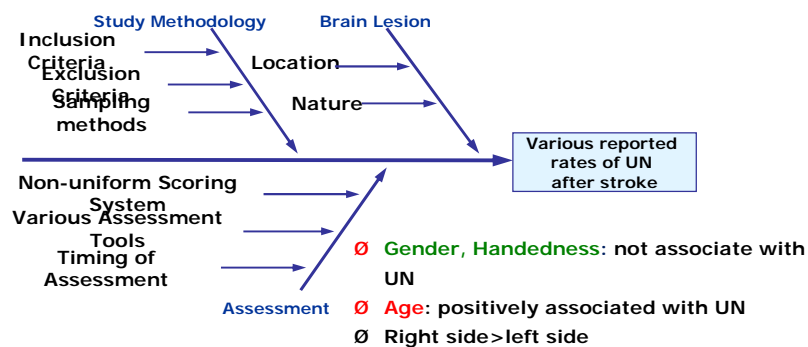
Classification



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Epidemiology

q The reported incidence in stroke patients varied from 8% to 90%



(Bowen, McKenna, et al.,1999; Ringman, Saver, et al.,2004; Gottesman and Hillis, 2009)

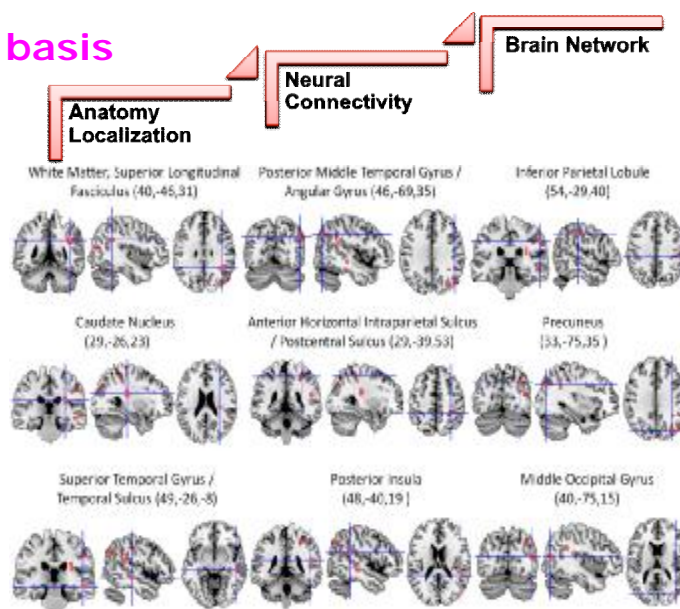
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Consequence

- q Significant negative impact on rehabilitation outcomes (Jehkonen, Laihosalo, et al., 2006)
- q A negative predictor for independent living (Furukawa, et al., 2012)
- q Associated with a lower health related-quality of life (HRQoL) in “self-care”, “pain-discomfort” and “anxiety-depression” (Franceschini, La Porta, et al., 2010)

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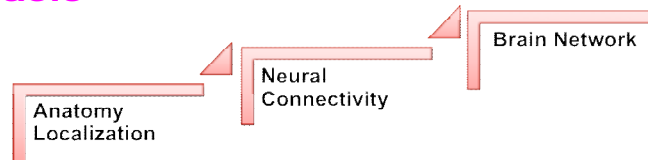
Neural basis



(Molenberghs, Sale, et al., 2012)

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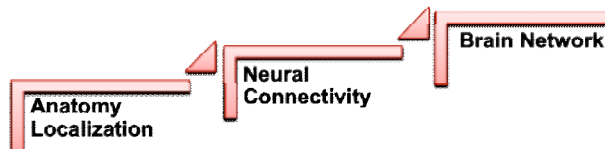
Neural basis



- n a large number of regions involved
- n the structural imaging and the functional imaging usually not consistent
- n Behavioral deficits can't be fully described with the anatomy character

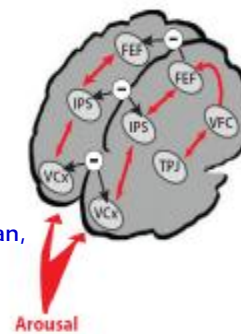
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Neural basis



- n neglect is better explained by the dysfunction of distributed cortical networks for the control of attention than by structural damage of specific brain regions

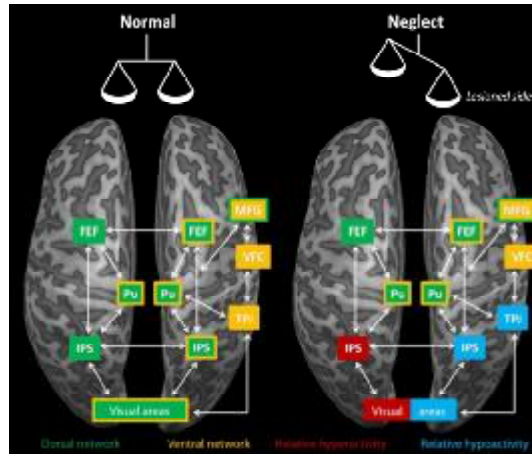
(He, Snyder et al., 2007; Corbetta and Shulman, 2011).



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Neural basis

q Brain network

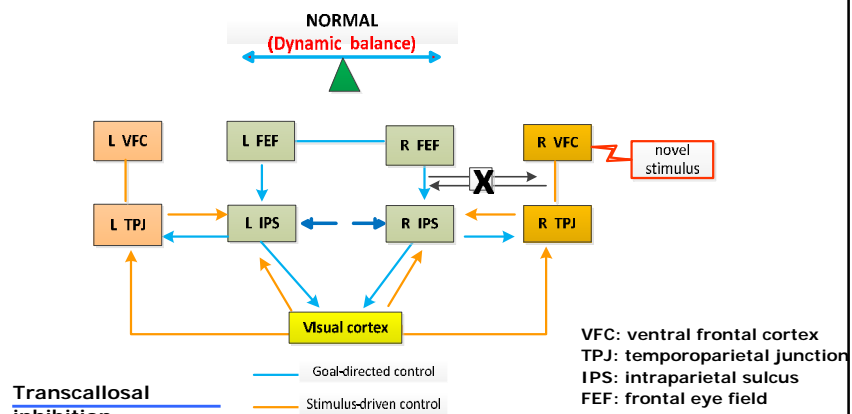


(图片引用并改编自vassel等)

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Neural basis

Model of the dorsal (DAN) and ventral (VAN) attention networks in healthy

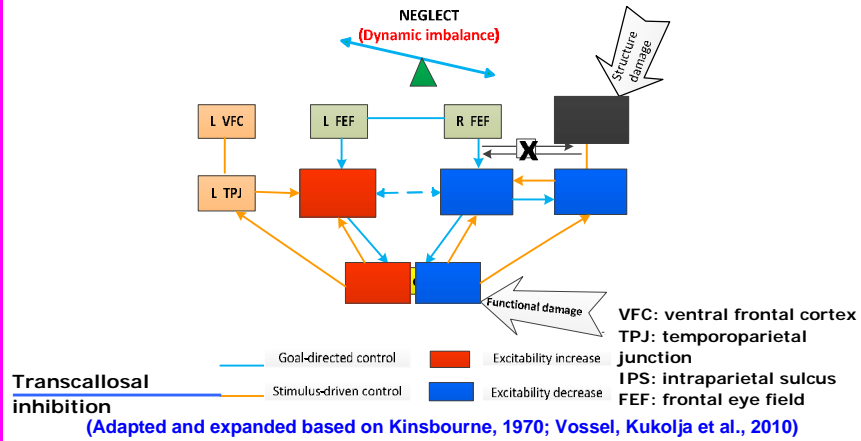


(Adapted and expanded based on Kinsbourne, 1970; Vossel, Kukulja et al., 2010)

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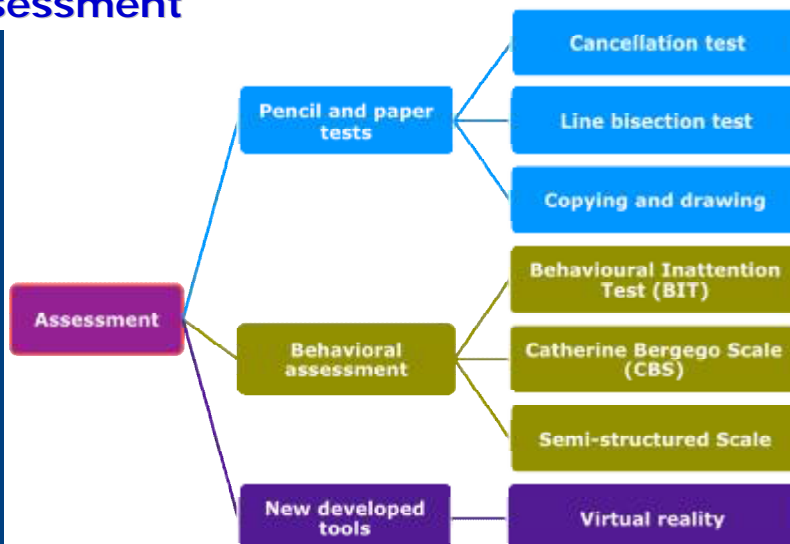
Neural basis

Model of the dorsal (DAN) and ventral (VAN) attention networks in UN



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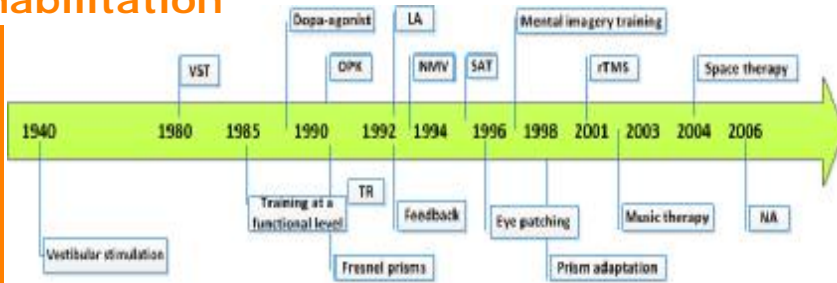
Assessment



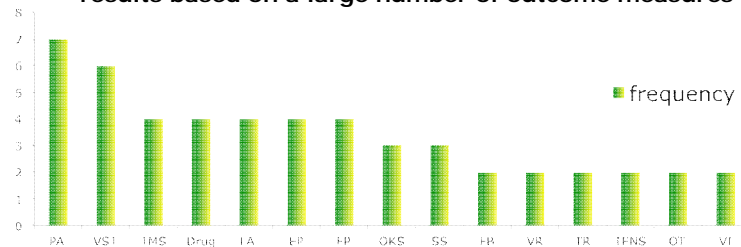
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Rehabilitation

Adapted from (Luauté, Halligan et al. 2006)



More than 18 methods have been put into practice with varying results based on a large number of outcome measures



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Rehabilitation

Classifications of intervention design

Passive **VS** Active

Restorative **VS**
Compensatory

TOP-DOWN Top-down **VS** Bottom-up **BOTTOM-UP**

q Patient voluntarily focus on their neglect symptoms by providing them with strategies

n E.g. Mental imagery, Visual scanning training

o Provide perceptual, motor, or other externally inputs to the lesioned network

n E.g. limb activation, Sensory Cueing, Prism Adaptation

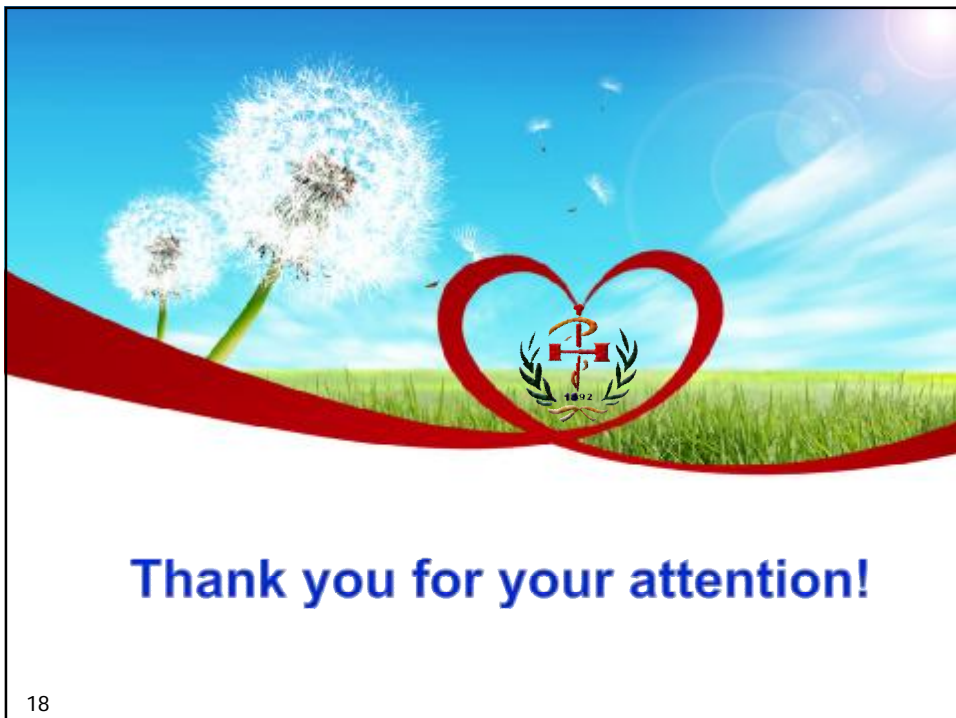
(Saevarsson, Halsband & Kristjansson, 2011)

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Challenge

- q The development of effective treatments
- q Select the best intervention
- q Combine different available treatments

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