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Efficacy of Eye Patching in Post-Stroke Patients

Western Michigan University

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Background

The question is in regards to occupational therapy in an acute care setting. The treatment team is considering eye patching as a treatment for post stroke victims suffering from visual field deficits. They are interested in how eye patching can improve the effectiveness and use of the affected visual field. The team is also interested in having better long term outcomes for their patients after they leave acute care.

1 Ask: Research Question

What is the efficacy and best treatment protocol for eye patching post stroke?

2a Acquire: Search Terms

Patient/Client group: Stroke, TBI, Hemiplegia, diplopia, field cut, hemifield, visuo-spatial neglect, visual neglect. **Intervention:** Eye patching, visual occlusion, visual field blocking, occupational therapy, hemifield, treatment, intervention, protocol, gaze stability, vestibular rehab, vision therapy. **Comparison:** Traditional Therapy **Outcome:** Efficacy and best treatment protocol.

2b Acquire: Selected Articles

Machner et al. (2014): (level II) A RCT evaluating the effectiveness of hemifield eye patching combined with repetitive optokinetic stimulation in treating spatial neglect for acute stroke patients.

Smania et al. (2013): (level I) A systematic review of 13 studies analyzing the effects of eye patching in rehabilitation of hemispatial neglect.

Lauaté et al. (2006): (level I) A systematic review of current interventions for visuo-spatial neglect and their effectiveness.

3a Appraise: Study Quality

Machner et al. (2014): Preponderant: Large n-size. Additional variables could be manipulated to show comparison of eye-patching alone versus the combination of optokinetic stimulation to strengthen results.

Smania et al. (2013): Small sample sizes account for a lack of power of the studies, and future research with larger samples are needed for stronger evidence. The review included case-series and single cases as well as RCT's, which may have clouded results.

Lauaté et al. (2006): Preponderant: More studies needed that include long term follow-ups. Too few studies to warrant a firm conclusion at this stage since the long term effects of this method remain untested.

3b Appraise: Study Results Studies show improvements in behavioral inattention tests (BIT) of patients in acute and subacute settings with hemifield eye patching. However, effectiveness of EP of functional improvement in daily life activities is not demonstrated throughout these studies.

To conclude, the results of the present review show that eye patching is a promising procedure in the treatment of hemispatial neglect after stroke and that further research in the evaluation of EP is needed on exact protocol guidelines. The below table describes protocols for eye patching from Smania et al. (2013).

Study	Frequency	Duration	Treatment
Machner et al. (2014)	All day, Patches only removed for OKS treatment (15min)	7 days	R Eye Patching + Optokinetic Stimulation
Fong et al. (2007)	5 days/wk, 1h/day	6 wks	R Hemifield Eye Patching + Trunk Rotation
Tsang et al. (2009)	5 days/wk, 1hr/day	4 wks	OT + R Hemifield Eye Patching
Ianes et al. (2012)	Group 1: 8hrs/day Group 2: 40min/day	2 wks	Group 1: R Hemifield Eye Patching Group 2: Visual Scanning training
Zeloni et al. (2002)	NS	1 wk	Group 1: Visual Scanning training + R Hemifield Eye Patching Group 2: Visual Scanning Training
Beis et al. (1999)	12 hrs/day	12 wks	Group 1: Visual Scanning training + R Hemifield Eye Patching Group 2: Visual Scanning training + R Monocular Eye Patching Group 3: Visual Scanning training
Wu et al. (2013)	5 days/wk, 2hrs/day	3 wks	Group 1: Constraint Induced Therapy + R Monocular Eye Patching Group 2: Constraint Induced Therapy Group 3: OT

4 Apply: Conclusions for Practice Based on the findings of the research, eye patching has the ability to significantly reduce visual field deficits, which may have implications across the care continuum including increased functional abilities, shorter lengths of stay, and lower levels of residual disability. It is a cost effective method that can be used both in the clinic and all the way across the continuum of care into home exercise programs. While more studies are needed to state a final conclusion on the intervention, hemifield eye-patching shows promise for stroke patients.

References:

Machner, B., Koenemund, I., Sprenger, A., Von, D. G., & Helmchen, C. (2015). Randomized controlled trial on hemifield eye patching and optokinetic stimulation in acute spatial neglect. *European Journal of Neurology; Eur.J.Neurol.*, Vol. 22, 100-100.

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Lauaté, J., Halligan, P., Rode, G., Rosetti, Y., & Boisson, D. (2006) Visuo-spatial neglect: A systematic review of current interventions and their effectiveness. *Neuroscience and behavioral reviews*, Vol. 30, 961-982

Eye Patching shows promise as an effective intervention, but more research is needed.



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