Neurooptometric rehabilitation
by mTBI / concussion
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While diagnosing a concussion is still difficult due to lack of visibility on available scans and other medical examinations, the clinical signs and subjective visual symptoms are much more obvious.


Examining and treating these patients represents a challenge, as most testing or training activities tend to trigger serious discomfort and fatigue.

Even small gains on vision function are often perceived as major steps towards recovery, and neurooptometric intervention should be offered early in the process of rehabilitation.

A few practical and theoretical things to consider before stepping out in this minefield, and, if time permits, examples on extended guidelines for existing procedures that have shown convincing in praxis
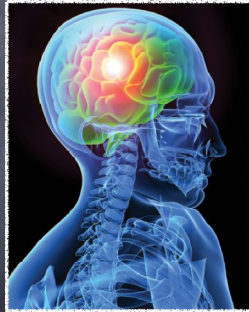
In spite of rapidly entering a state of overflow, many patients suffering PCS, when pushed, are able to show close to normal fusional ranges and fine stereo within normal "numbers", only, demonstrating this comes at a high cost.

Generally present skills cannot be maintained long enough to be put to practical use for any length of time.

Most likely the problems relate to regulatory problems and to overflow of neural information, that unintended triggers neighbor functions.

Inflammation, leaking of biochemicals as well as leaking of neural signals.

Regarding it's energy consumption, the brain can't afford this inefficient operational mode, which seem to quickly drains all resources and accumulate waste products

Thus the testing alone presents a major obstacle, and should be performed as gently and goal oriented as possible. The initial goal being threefold:

Are there any quick relief options available?

Do we have any rehab-options to offer,

and if so,
what should be the starting point.

Testing beyond this point is not productive, and really not necessary as more details can be collected during the rehabilitation program whenever needed.

Quick reliefs

Lighting control
Refrain from eye contact
Palming/Visualization (black)
Breathingtechnique
Heat treatment
Cooling treatment
Streaches
Binasals
miniprism
Filters
NC-headphones
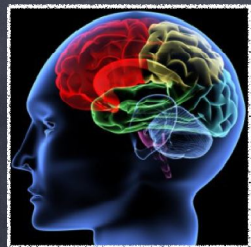
- During examination wear neutral colored clothing.
- During communication allow to suspend eye contact as needed.
- Don't chase break values or endpoints, but accept subjective and objective "JND"-levels (Just Noticeable Disturbance)
- Stop for breaks as needed, and apply identified and available quick reliefs.

Exam

Training

- JND(difference)-levels initially more important than ranges. pt must be able to sense the difference between relaxation and action. This is her only way of gaining control over the "leaking" and getting able to shut down haywired functions. It is also the most efficient way to improvement

Training

- Whatever the task: EYES ON EASY!!!

- This is an essential part of being able to sense what one is doing. In tuning signal to noice (preferably by reducing noice), we set the stage for better sensitivity, selectivity and control.

Training

- Stop for breaks as needed, and apply identified quick reliefs.
- The reason for seeking the QR's up front is that they can be useful while in office as well as in other situations.

Training

- Start on opening acceptance for peripheral input
- Proceed to gradually increasing foundation for stereo volume through simple tasks, and start with very low demand.
- Be aware of your own presence and voice, and observe for facial, postural and other signs of strain.

Training

- Clock fixations with coins
- Physiological diplopia with colored pencils
- Brock string
- +lens accomodative rock
- Vectograms
- Ecc. circles

Training

Realize that the value of VT comes from the experiences gathered through working with an activity, by gradually enhancing the efficiency of the neural network to function inside it's normal envelope