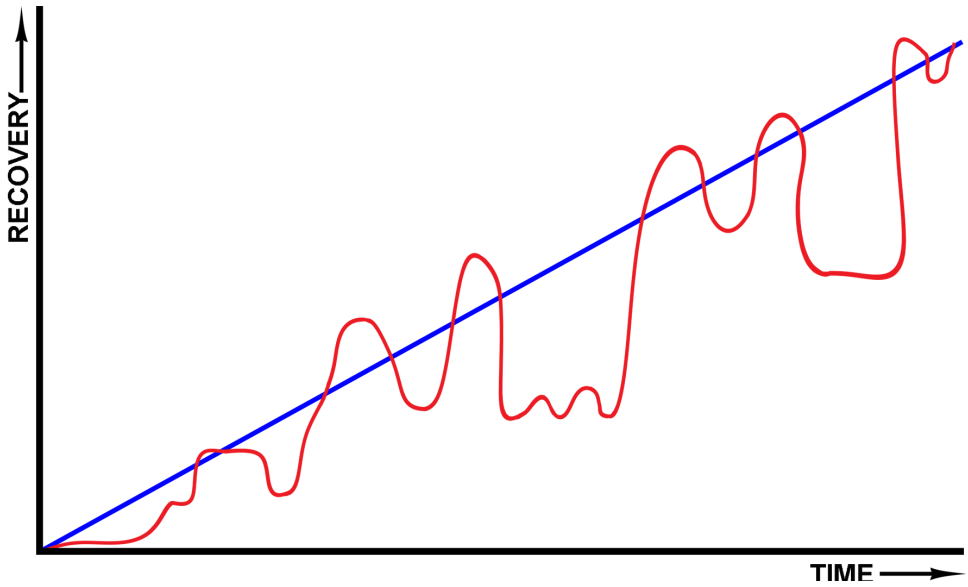
VIRTUAL REALITY REHABILITATION

Hypatia Specialist Clinics

HYPATIA
SPECIALIST CLINICS
EMPOWERED CLINICIANS • EMPOWERED PATIENTS

Thank you for visiting us and trusting us to get you back on track concerning your dizziness and/or balance. This is an initial information sheet to get you started with Vestibular Rehabilitation. Some people find that this is all they need, and others need more support. Either way, we are here when you need us - remember, recovery can be slow and is a bit of a journey. Your expectation should be around six months, but many patients can get their quality of life back to what it was before having symptoms.

The below graph represents what most people expect recovery to be like (blue line) vs a more realistic representation (red line).



Virtual Reality Therapy

Virtual reality therapy works in vestibular rehabilitation by desensitizing your body to mismatched visual-vestibular signals. When you have normal function from your vestibular system the signals correspond with the signals from the eye and your body and the brain can easily make sense of what is going on. Additionally, the signals from your vestibular system are prioritized therefore if you see the movement you don't necessarily feel movement.

Once you have a vestibular weakness or vestibular injury your brain continuously gets signals that no longer match those coming from the eyes and body, the brain learns it cannot trust your vestibular signals and prioritizes the signals from your eyes. This in combination with the signal mismatch can lead to visual vertigo and you may also feel symptoms of general unsteadiness, difficulties in busy places, and a general poor sense of well-being. Virtual Reality aims to normalise the mismatch and teach your brain not to be as sensitive to visual motion so your brain can comfortably cope in real-world environments.

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Case Study - Max

Max had a head injury and has since been suffering with his balance, he struggles to go to busy places such as shopping centers and supermarkets he also misses riding his motorbike., which prior to his injury was his favourite thing to do.

Max's first week with the Virtual Reality was difficult, he felt his balance got worse and he'd been very symptomatic during the first couple of goes. After changing the video to an easier one and using the device at the end of the day for shorter times he started to get the hang of it.

After 4 weeks Max could manage all the difficult videos on the suggested list below for around 10 minutes and noticed that the busy carpet in his friend's house no longer made him feel dizzy.

After 6 weeks Max felt confident enough to explore youtube videos for the content he liked, he enjoys documentaries, live concerts, and motorbike riding which give him some semblance of being on a motorbike something he thought he would never experience again. He can tolerate supermarkets for up to an hour without feeling too fatigued and continues to this day to use his headset 3 times a week,

Tips for optimal rehabilitation.

- If you have any symptoms of migraine this will need to be addressed first. In your first week, you should only have < 1 minute exposure at a time to ensure you are not triggered.
- If you are suffering from anxiety because of your condition this should be addressed first. Virtual Reality therapy relies on neuroplasticity and rewiring of the brain's neural network. A happy and calm brain has access to neurotransmitters required to do this
- Remain seated at all times unless you are in the room with a therapist.
- You should feel symptomatic whilst using the device. If you rate your symptoms out of 10. 1 = No Symptoms & 10 = Very Symptomatic you should be using the device at a moderate level 6/10.

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- Use a graded approach if you can manage 3 minutes this week can you work up to 5 minutes next week? etc. Use the video diary on the last page of this document to help with this.
- In the beginning, you should use it every day at the end of the day. Your brain will not get used to it without repeated exposure.
- Once you can tolerate the videos for over 10 minutes you are welcome to access games. Games that use hand-eye coordination are optimal. We never recommend you use games that require you to stand up nor games that are stressful,
- If you are bored/not enjoying the video - change it, remember neuroplasticity happens quicker if you are enjoying something. We have tried to compound a starting list to get you going but once you a familiar with what to do you are welcome to move away from that.

Suggested Video List from Youtube

Videos that involve drone filming are usually too much, to begin with, start with slower movement and fewer colours/people in the videos..

Easy

Virtual Nature 360° - 5.7K Nature Meditation for Oculus Quest
https://youtu.be/7AkbUfZjS5k
Surrounded by White Lions - 4K 360° VR
https://youtu.be/14O7AxqjiVY
Maldives VR 360 - 4K Video
https://youtu.be/MgJITGvVfR0

Medium

Ancient city of Petra, Jordan. Aerial 360 video in 8K. Virtual travel
https://youtu.be/xSiv4TkfSOE
360° VR Spacewalk Experience | BBC HOME
https://youtu.be/hEdzv7D4CbQ
Virtual Hike 360° VR - Forest Walk along the Trail of Ten Falls - 8K Virtual Relaxation - Part 1
https://youtu.be/hNFbO8Kmrbc
4K 360° New York City: Evening Walk to Times Square - 42nd Street from Columbus Circle
https://youtu.be/OgQtDFRWai8
Walk in Shinjuku, Tokyo, Japan @8K 360° VR / Sep 2020
https://youtu.be/YYQufxYrBiU
4K HDR // Tokyo Snowy Night Walk - Shibuya to Shinjuku - 2 hours
https://youtu.be/9CJLtzzUphU

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Hard

New York City 8K - VR 360 Drive
https://youtu.be/2Lq86MKesG4
Rosa Khutor Ski Resort. Southern slope. Sochi, Russia. 360 video in 4K
https://youtu.be/idCX7o-9Hr4
30 Minutes Workout - Virtual Scenery - Treadmill / Exercise Machine (Cotswolds UK) 1080/60fps
https://youtu.be/dCjt9eptadI
360° Underwater National Park | National Geographic
https://youtu.be/v64KOxKVLVg

Fun

VR 360 EARTH 8K ULTRA HD • Virtual Reality Tour Around the World
https://youtu.be/dpwsDMkab_o
360°Beethoven – 5th symphony / Rotterdam Philharmonic Orchestra / Virtual Reality concert / 3d sound
https://youtu.be/V_To4k9AJXc
Highway to Hell 360 VR Concert: Ever wondered what it would be like to go to see AC/DC ? Axel Rose
https://youtu.be/FWfMXyp7Xe8

Good Luck and use the diary on the next page to track progress.
With Best Wishes
Amy

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	How Long?	How Much Discomfort (Keep around 6/10)	Comments Notes (Include how much you enjoyed and any particular challenges)
Monday Video Name			
Tuesday Video Name			
Wednesday Video Name			
Thursday Video Name			
Friday Video Name			
Saturday Video Name			
Sunday Video Na			