**PPPD**
**Persistent Postural Perceptual Dizziness**
**(Functional Dizziness)**

Dizziness is a common symptom in neurology and has lots of different causes.

There are lots of different causes of dizziness - migraine, middle ear problems (vestibular disorders - like BPPV or labyrinthitis)- and drug side effects are all common ones.

Dizziness occuring as part of a functional disorder is also relatively common accounting for up to 20% of patients seen in a specialist dizziness clinic. When dizziness occurs as a functional disorder it is called 'Persistent Postural Perceptual Dizziness' (PPPD) or Chronic Subjective Dizziness.

Other names for it include Visual Vertigo, Phobic Postural Vertigo, Functional Dizziness or Space and Motion Discomfort.

PPPD has recently been defined by the World Health Organisation as:

"Persistent non-vertiginous dizziness, unsteadiness, or both lasting three months or more.

Symptoms are present most days, often increasing throughout the day, but may wax and wane. Momentary flares may occur spontaneously or with sudden movement.

Affected individuals feel worse when upright, exposed to moving or complex visual stimuli, and during active or passive head motion. These situations may not be equally provocative.

Typically, the disorder follows occurrences of acute or episodic vestibular or balance-related problems. Symptoms may begin intermittently, and then consolidate."

**Let's look at a typical history of someone with PPPD.**

Clara is a 24 year old woman, presents with a history of persistent dizziness for the previous two years. She had an initial illness where everything was spinning really badly (vertigo) she felt sick and could hardly get out of bed for a week. The doctor made a diagnosis of viral labyrinthitis - this is a viral infection of the middle ear that causes dizziness and usually resolves in a week or two.

As she recovered her complaint of dizziness changed to a more non- specific feeling of dizziness that she found really hard to describe to people. It wasn't the spinning sensation any more. She said that she felt light headed, as if she was swaying and had a feeling of motion present mainly on standing and walking but also had noticed it when lying in bed at night.

Every now and then she felt ‘spaced out’ as if she was floating and people seemed far away which she found frightening.

She also found that she’d become really sensitive to objects moving in her environment when she was still. It was really difficult for her to use a computer or be in busy environments such as supermarkets. She found that she was quite often thinking about the possibility of falling. She had only ever fallen once but felt that she had experienced some ‘near misses’ at times.

The thought of being embarrassed and falling outside made her feel anxious and so she had tended to avoid busy places and going outside as much as possible.

Over time she had found that the dizziness had started to take over her life. Initially she had become anxious about a possible sinister cause and had found herself looking up possible causes on the internet. She then saw doctors who had carried out detailed balance tests and she had a normal MRI scan of her brain.

Even when she became more confident that it wasn’t a sinister problem she found it very hard to cope with the symptoms. She developed symptoms of fatigue and poor concentration and had various periods of time off work. The whole thing was made worse by regular migraines during which her dizziness often got worse. She had occasional migraine.

She now felt at her wits end. What was causing this dizziness, why couldn’t anyone tell her what was wrong and how to get better?

**How does PPPD / Functional Dizziness develop?**

Clara’s story is very typical. She started out with an episode of viral labyrinthitis that upset her balance system. Other people with PPPD start off with dizziness from migraine, or dizziness after a mild head injury.

These causes of dizziness all upset the normal processes that your brain uses to stop you feeling dizzy. Our brains are actually doing a lot of work all the time to stop us from feeling dizzy.

Our head, body and eyes can all move independently. Yet our brain is able to sort all this out to make sure that for most of us we don’t get abnormal sensations of movement.

It does this through an incredibly complex process using information from the middle ear, our feet and vision that neuroscientists are still figuring out the details of. It’s amazing it doesn’t go wrong more often!

In PPPD what happens is that the normal ‘filters’ that the brain uses to suppress feelings of movement go wrong. Instead of the brain being able to balance everything up and give you a nice smooth feeling when you are moving, the person can feel a sense of movement that they shouldn’t.

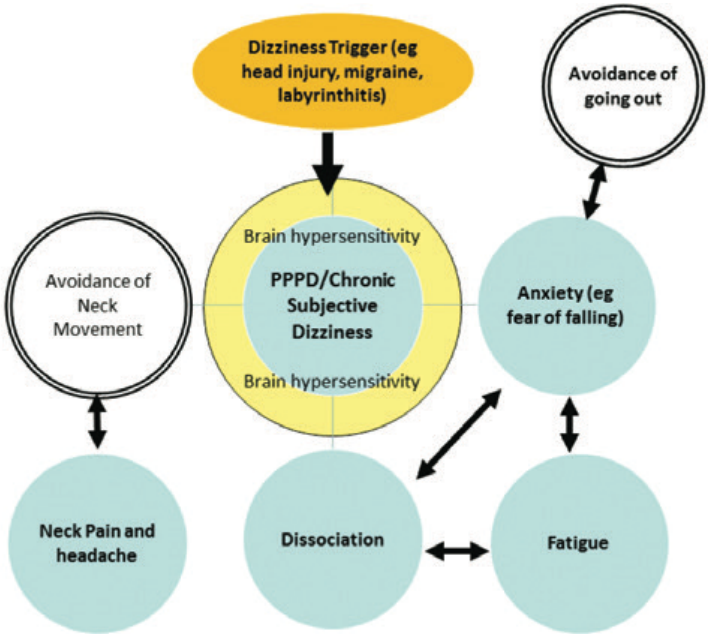
After a while, because the person notices it a lot, they start to wonder what it is. Thinking about dizziness or worrying about it “turns up the volume knob” on the sensation. That makes it even stronger - and so the vicious circle begins. I’ve tried to show this in the picture above.

Like all functional disorders this is not dizziness that is ‘all in the mind’. The person can’t just switch it off. After a while it becomes a constant intrusive sensation - a bit like a balance equivalent of tinnitus.

In PPPD one thing leads to another. Experiencing feelings of dizziness all the time understandably commonly causes anxiety. Anxiety about dizziness often revolves around concern about the cause, so called health anxiety, although if no one tells you what’s wrong with you that is not really the same thing. Health Anxiety is when someone can’t stop worrying about a serious cause even though part of them knows that such fears are irrational.

In PPPD an initial dizziness trigger sets things off and then other symptoms follow from it leading to hypersensitivity of the nervous system and the experience of dizziness.

Anxiety in PPPD may also be centred around concerns about falling or the consequences of falling such as embarrassment. Not everyone with PPPD has anxiety but it is common. The pathways for dizziness and anxiety in the brain turn out to be quite similar.



**Anxiety is really tiring for the brain. Fatigue is common in PPPD.**

Often feelings of fatigue and dizziness merge with a 'cotton wool' feeling in the head which people sometimes refer to as 'brain fog'. This is a feeling that merges between all of these symptoms as well as feelings of poor concentration.

People with PPPD become sensitive not only to their own movement, but also to things moving around them. This has been called visual vertigo - although strictly speaking the dizziness of PPPD is not really vertigo. They can feel intense discomfort in places like supermarkets or on public transport or with patterned surfaces. This discomfort can lead to avoidance of those places and feelings of fear when asked to endure them.

Another consequence of PPPD may be Dissociation, a feeling of being spaced out or zoned out. Sometimes people describe it as being disconnected or floating. Patients with PPPD may feel that they are walking on spongy ground sometimes or that their feet themselves feel spongy. There are other causes for this symptom but PPPD is one of them.

Neck movements may trigger feelings of dizziness in some people with PPPD (or indeed other balance problems). If you keep avoiding neck movements over a long time period then you may end up with a stiff painful neck or headaches. Worsening headache with dizziness only serves to make everything else worse. PPPD is a problem with motion sensitivity. Problems with light and sound sensitivity or even nausea from smell sensitivity are more common in patients with PPPD. PPPD may be one component of chronic fatigue syndrome.

**Treatment of PPPD / Functional Dizziness**

Specific treatment of PPPD takes time and there is no 'quick fix' but good recovery is certainly possible even after months or years of symptoms.

Ingredients of treatment include:

- A clear positive diagnosis and explanation that you can work with. An understanding of how the nervous system has become sensitised can help you work to desensitise it.

- Recognition during assessment of all the various component symptoms that may or may not be going along with your PPPD including dissociation, neck pain, anxiety, fatigue and poor concentration. Some of these problems may have treatment approaches in their own right.

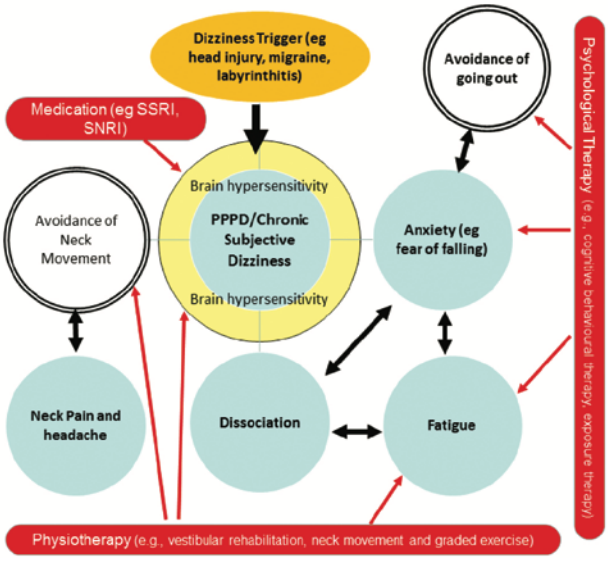
- Physiotherapy/ Desensitisation of movement. As the symptoms of PPPD have built up, most people avoid moving their eyes, neck and body as much as they used to. Physiotherapy and specific vestibular physiotherapy can be useful to

help desensitise the nervous system and start to overcome ingrained patterns of movement. There are additional special exercises for dizziness that a physiotherapists can introduce you to if they have training in that area.

- Medication. There have been small studies investigating the role of medications for patients with PPPD. These include medicines from the SSRI group (Sertraline) and SNRI group (Venlafaxine) which were developed to treat anxiety and depression. If anxiety is present, even if mainly about dizziness, then this may be a particular reason to try them. Anecdotally such medicines may be useful even in patients with PPPD who don't have anxiety or depression, but there are no randomised clinical trials and more studies are needed to be confident that medication has a role. Medication choices must be discussed with your doctor.

- Psychological treatment. Can be helpful in addressing understandable fears of falling, or other sources of anxiety. Treatment from a therapist who understands PPPD can help break bad habits that many patients with PPPD get in to with respect to their symptoms. Seeing a psychologist does not mean that your symptoms are 'all in the mind'.

*Prepared by Prof Jon Stone Consultant Neurologist (NHS Lothian)*




Have a look at the above diagram again and think about things on it that could be changed by the treatments listed above.

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*(Sourced from Whirled Equilibrium March 2017 – reprinted with permission from Prof Jon Stone to Anne Elias in July 2019)*