

BWS/PWS & NEURONAL DAMAGE

Benzodiazepine Withdrawal Syndrome Protracted Withdrawal Syndrome Neuronal Damage

Informative Handout

WORLD BENZODIAZEPINE AWARENESS DAY

JULY 11

BWS

BENZODIAZEPINE WITHDRAWAL SYNDROME

Benzodiazepine Withdrawal Syndrome (BWS) is a serious physiologic condition associated with benzodiazepine (BZD) dependence and discontinuation, even from normal or low doses. Most people suffering BWS/PWS from prescribed BZDs are not addicts and have taken their medicine as directed by a healthcare professional. Experts estimate around 30% of people taking a BZD may experience severe BWS and a smaller percentage may develop PWS. Not everyone may be affected.

One of the most upsetting features of these syndromes is how long lasting they can be. The duration and severity of BWS varies by individual. It may be more severe in people with a history of seizures, anxiety, or insomnia, but can also be severe in otherwise healthy people.

Withdrawal symptoms are due to altered (downregulated) GABA receptors in the brain caused by BZD discontinuation and dependence. When the BZD is reduced or removed, the altered receptors can't function normally, increasing risks of seizures, anxiety and causing the withdrawal syndrome, BWS. Slow tapering methods such as diazepam substitution tapering (the "Ashton Protocol") may reduce the severity of BWS and the risk of PWS.

Withdrawal symptoms can appear...

- Following cessation of BZDs – even from low doses
- While taking BZDs – due to tolerance to the medication's therapeutic effects after physical dependence has formed ("tolerance withdrawal")
- Between doses of BZDs – known as "interdose withdrawal" – common in short-acting BZDs, such as alprazolam (Xanax), lorazepam (Ativan) and similar medicines, like zolpidem (Ambien)
- During paradoxical or adverse reactions to BZDs – when the medicine does the opposite of what it's supposed to do or causes unwanted side effects.

BZDs can be necessary medications, but with risks. BWS can be especially dangerous for people who are medically compromised or frail, elderly or near the end of their life. Special care and consideration should be taken in decision-making for these people. Some people may be able to lower their dose but not fully withdraw, and a small few others may not be able to withdraw. Support is quite important during and after withdrawal. Support can be as simple as reassurance or helping with simple daily tasks.

Anxiety	Sensory hypersensitivity	Derealization
Tremor	Paresthesia	Depersonalization
Insomnia	Dizziness/vertigo	Perceptual disturbances
Tachycardia	Tinnitus	Agoraphobia/fears
Fatigue	Cognitive problems	Panic attacks
Nausea	Muscle cramps/stiffness	Mood changes
Diarrhea	Psychosis*	...and more
Headaches	Seizures*	* Severe/less common

PWS

PROTRACTED WITHDRAWAL SYNDROME, POTENTIAL NEURONAL DAMAGE

Sometimes symptoms resolve in as little as a few weeks or months after discontinuation, but symptoms may persist for many years in some. After significant time has passed after removal of the BZD, persisting symptoms may be from altered (possibly damaged) GABA receptors. This is often called Protracted Withdrawal Syndrome (PWS) or Post-Acute Withdrawal Syndrome (PAWS), but there's uncertainty if these are the best terms to use, as, after some time off the BZD, it may no longer be "withdrawal" as much as it may actually be damaged neurons. Lingering symptoms may wax and wane in severity over time until the receptors can return to normal.

According to Professor Ashton, "...recurrent symptoms are all signs of GABA underactivity with its accompanying increased output of excitatory neurotransmitters, resulting in a hyperactive, hypersensitive central nervous system. The mechanism is exactly the same as that of benzodiazepine withdrawal, which is why the symptoms are the same." – Professor Ashton, DM, FRCP, 2011

The risk of developing PWS increases in susceptible people who over-rapidly tapered, quickly "detoxed" or quit abruptly ("cold-turkey"). A slow, as-tolerated taper may reduce the risk of developing PWS, but it can sometimes happen even after tapering. Ups and downs with symptom flares and GABA receptor underactivity may happen until the receptors return to normal.

Some BWS/PWS symptoms are neurological, making them more specific to BWS/PWS than rebounding anxiety. Many PWS sufferers compare their experience to recovering from a mild Traumatic Brain Injury (TBI). Some people get misdiagnosed with other conditions. A thorough health exam by a knowledgeable healthcare professional can help rule out possible other causes of symptoms. More research is needed to determine if some PWS symptoms may permanently persist.

Acute BWS is one of the most dangerous withdrawal syndromes because it can precipitate seizures, psychosis, suicide, and even death – and this, along with the risk of the longer lasting PWS, is why anyone physically dependent on a BZD shouldn't be forced off against their will, or be made to taper at a pace that exceeds their body's rate of adjustment.

While PWS can persist for years, it is less common. Symptoms usually resolve over time in the vast majority of individuals, and many experts believe the altered receptors can eventually return to normal after withdrawal. Often, people who utilize support groups report that the encouragement from others who understand and have experienced BWS/PWS provides them much needed reassurance and consolation.



"The protracted nature of some of these symptoms raises the possibility that benzodiazepines can give rise not only to slowly reversible functional changes in the central nervous system, but may also occasionally cause structural neuronal damage."

- Professor C. Heather Ashton, DM, FRCP