

What is REM (Rapid Eye Movement) Behavioral Disorder?

REM sleep behavior disorder is a sleep disorder in which you appear to physically act out vivid, often unpleasant dreams with abnormal vocal sounds and movements during rapid eye movement (REM) sleep.

Normal sleep has 2 distinct states: non-rapid eye movement (NREM) and rapid eye movement (REM) sleep. NREM sleep is divided into 4 stages. During REM sleep, rapid eye movements occur, breathing becomes irregular, blood pressure rises, and there is loss of muscle tone (paralysis). However, the brain is highly active, and the electrical activity recorded in the brain by EEG during REM sleep is similar to that recorded during wakefulness. REM sleep is usually associated with dreaming. REM sleep accounts for 20-25% of the sleep period.

In a person with REM sleep behavior disorder (RBD), the paralysis that normally occurs during REM sleep is incomplete or absent, allowing the person to "act out" his or her dreams. RBD is characterized by the acting out of dreams that are vivid, intense, and violent. Dream-enacting behaviors include talking, yelling, punching, kicking, sitting, jumping from bed, arm flailing, and grabbing. An acute form may occur during withdrawal from alcohol or sedative-hypnotic drugs.

RBD is usually seen in middle-aged to elderly people (more often in men).

Causes

The exact cause of REM sleep behavior disorder (RBD) is unknown, although the disorder may occur in association with various degenerative neurological conditions such as Parkinson disease, multisystem atrophy, diffuse Lewy body dementia, and Shy-Drager syndrome. In 55% of persons the cause is unknown, and in 45%, the cause is associated with alcohol or sedative-hypnotic withdrawal, tricyclic antidepressant (such as imipramine), or serotonin reuptake inhibitor use (such as fluoxetine, sertraline, or paroxetine) or other types of antidepressants (mirtazapine).

RBD often precedes the development of these neurodegenerative diseases by several years. In one study, 38% of patients diagnosed with RBD subsequently developed Parkinson disease within an average time of 12-13 years from the onset of RBD symptoms. The prevalence of RBD is increased in persons with Parkinson disease and in multisystem atrophy where it is observed in 69% of these patients. The relationship between RBD and Parkinson disease is complex; however, not all persons with RBD develop Parkinson disease.

Symptoms

The main symptom of REM sleep behavior disorder is dream-enacting behaviors, sometimes violent, causing self-injury or injury to the bed partner.

The dream-enacting behaviors are usually nondirected and may include punching, kicking, leaping, or jumping from bed while still asleep.

The person may be awakened or may wake spontaneously during the attack and vividly recall the dream that corresponds to the physical activity.

Exam and Tests

A) Neurologic examination

The neurologic examination is often normal. However, symptoms and signs of Parkinson disease, such as hand tremor at rest, slowness in movement, and muscle stiffness (rigidity) that may suggest an underlying neurologic cause of REM sleep behavior disorder (RBD), should be considered.

B) Polysomnography

Polysomnographic video recording is the single most important diagnostic test in persons with RBD. This test is usually conducted in a sleep study center. The person undergoing testing is required to sleep at the center while the following parameters are monitored:

- Electrical activity of the brain (electroencephalogram [EEG])
- Electrical activity of the heart (electrocardiogram [ECG])
- Movements of the muscles (electromyogram)
- Eye movements (electrooculogram)
- Respiratory movements

These parameters are monitored as the person passes through the various sleep stages. Characteristic patterns from the electrodes are recorded while the person is awake and during sleep. Continuous video recording is done to observe behaviors during sleep.

In persons with RBD, the polysomnogram shows an increase in the muscle tone associated with the EEG pattern of REM sleep, whereas in healthy persons, the EEG pattern of REM sleep is associated with an absence of muscle tone (atonia).

Additionally, the video recording shows body movements coinciding with the EEG pattern of REM sleep.

C) Imaging studies

Imaging studies (for example, CT scan and MRI of the brain) are not routinely indicated in persons who have no neurologic cause of RBD, but they may be done if some abnormality is detected during neurologic examination. Imaging studies should also be considered in younger patients (younger than age 40) where there is no known precipitant cause such as alcohol or medication use (see Causes).

When to Seek Medical Care

Seek medical care if unusual behaviors, such as violent thrashing and kicking, occur during sleep.

Because REM sleep behavior disorder (RBD) may occur in association with neurodegenerative disorders, such as Parkinson disease, multiple system atrophy, and dementia, consult a neurologist to rule out these conditions. RBD symptoms may be the first manifestations of these disorders, so careful follow-up is needed.

Treatment

A) Medications

Clonazepam (Klonopin) is highly effective in the treatment of REM sleep behavior disorder (RBD), relieving symptoms in nearly 90% of patients with little evidence of tolerance or abuse. The response usually begins within the first week, often on the first night. The initial dose is 0.5 mg at bedtime, with some persons requiring a rapid increase to 1 mg. With continued treatment for years, moderate limb twitching with sleep talking and more complex behaviors can reemerge. The treatment should be continued indefinitely, as violent behaviors and nightmares promptly recur with discontinuation of medications in almost all persons with RBD.

Other medications, such as melatonin is effective in persons with RBD.

B) Self Care at Home

Because persons with REM sleep behavior disorder have a risk of injuring themselves and their sleep partners, safety of the sleeping environment is very important.

- Remove potentially dangerous objects from the bedroom.
- Clear the floor of furniture and objects that could injure the person if he or she fell from bed.
- Place the mattress on the floor, or place a cushion around the bed.
- Have the person sleep in a bedroom on the ground floor if possible, especially for people who leave the bed during an episode.
- The bedmate should sleep in another bed until the symptoms resolve.
- A bed with padded bedrails can be considered.

Outlook (Prognosis)

The outlook of REM sleep behavior disorder (RBD) depends on the cause. In persons with RBD in whom no cause can be identified, the symptoms can be controlled with medications. In persons with RBD caused by neurological diseases, the outlook depends on the primary disease.

Resources

- National Center on Sleep Disorders Research
- National Sleep Foundation
- American Academy of Sleep Medicine