Night Terrors and Parasomnias

Synonyms: night terrors = sleep terror disorder = pavus nocturnus; nightmare disorder = dream-anxiety attacks; sleepwalking disorder = somnambulism (syndrome); Ekbom’s syndrome = restless legs syndrome

This article refers to the International Classification of Diseases 10th edition (ICD-10) which is the official classification system for mental health professionals working in NHS clinical practice. The literature occasionally refers to the Diagnostic and Statistical Manual of Mental Disorders (DSM) classification system which - whilst used in clinical practice in the USA - is primarily used for research purposes elsewhere.

Introduction[1]

Parasomnias may be defined as undesirable disorders of behaviour or experience that occur during sleep or its specific stages, or during sleep-wake transitions. Common behavioural problems include unwelcome verbal outbursts or movements.

- Primary parasomnias arise without an underlying physical cause and may be classified by the stage of sleep in which they occur, as rapid eye movement (REM), non-REM (NREM) or miscellaneous (no specific stage affected). They are also classified diagnostically on the basis of their characteristic presentation.
- Secondary parasomnias are disorders caused by accompanying physical/psychiatric disturbance leading to sleep-related symptoms - eg, seizures, cardiac dysrhythmia or dysfunction, respiratory dysfunction and gastro-oesophageal reflux.
- Dyssomnias such as insomnia, in contrast, are disorders of the initiation, timing, quality, maintenance or phasing of sleep and are not usually associated with aberrant behaviour or experiences.
- Night terrors and sleepwalking are sometimes called arousal parasomnias.
- Sleep disorders are being reported more often as they become more recognised and deemed as suitable conditions for treatment by the medical profession.[2]
- Two disorders recently described are somnambulistic sexual behaviour, or sexsomnia, and sleep-related eating disorder.

Risk factors
One study found that arousal parasomnias were associated with sleep apnoea, alcohol intake at bedtime, mental disorders, shiftwork, excessive need for sleep and stress.[4]

Nightmare disorder[5]

This is synonymous with dream-anxiety attacks. Bad dreams/nightmares occur in REM sleep, with associated severe anxiety and symptoms of increased sympathetic outflow. There is complete alertness and recall of dreams on waking. The presence and recollection of the dream is what helps to differentiate this condition from night terrors. Sufferers may have experienced previous trauma that is relived. This presentation is a major symptom of post-traumatic stress disorder (PTSD).

Epidemiology
This is reported as occurring weekly in 4-10% of the population with up to 50% of adults reporting occasional nightmares.

Prognosis
Most children outgrow nightmare disorder but a small proportion may suffer into adulthood, with improvement in later life.

Night terrors[6]

This is synonymous with sleep terror disorder. The condition occurs with increased frequency in some families, suggesting a genetic predisposition. Disordered arousal occurs during NREM sleep, causing extreme panic and loud screams/movement. A sudden arousal from non-dreaming sleep occurs, usually about 90 minutes or so after falling asleep. There is often an accompanying scream or shout. There may be symptoms of increased sympathetic outflow. Initially, the patient may be unresponsive and tends to be confused, disorientated and unable to recall what has caused them to wake up. There may be nonsense or indistinct speech and bed-wetting. The patient may hit/throw objects or leave the bedroom. There is little or no subsequent recall of events.

Epidemiology
The DSM, Fourth Edition (DSM-IV) estimates prevalence at 1-6% in children, although recurrent episodes are less common. Adult prevalence is estimated at <1%. Night terrors occur most frequently in children aged 3-12, with median age of onset 3.5 yrs.
Prognosis
Virtually all children grow out of night terrors before adolescence. Adult night terrors tend to be more chronic with a waxing and waning course.

Sleepwalking disorder
This usually arises during NREM sleep and involves an apparently sleeping or unaware person performing complex, automatic behaviour and various motor functions. Typical activities include walking around the house, wandering outside, carriage of possessions and 'looking' in cupboards or doorways. There is a large degree of variation in the activities performed. This can range from someone who merely sits up in bed to a wandering or rambling journey around the house, or even outside it. Complex tasks such as eating, work-related activities or sexual behaviour may be performed and the patient may talk. Patients usually awake confused and amnestic for any of their activity. It usually occurs during NREM (non-dreaming) sleep and can be worsened or precipitated by sleep deprivation. The patient may wake or simply go back to sleep in their bed or somewhere else, without coming to until the morning.

Somnambulistic sexual behaviour
It is also known as sexsomnia, or sleep sex. It is considered a variation of sleepwalking. Sexual behaviours of all types may occur during sleepwalking. It is a true automatic behaviour as opposed to motor activity during a dream. Variations can range from sexual vocalisations to violent masturbation. Complex sexual acts can occur including fondling, cunnilingus, fellatio and vaginal and anal sex. Amnesia of the event is invariably reported. There are obvious medicolegal implications in terms of defence against sexual assault and rape allegations.

One Norwegian random population survey reported a lifetime prevalence of 7.1% and a current prevalence of 2.7%. As with sleep-related eating disorder, this is a confusional arousal disorder in which the higher reasoning centres of the cortex are deactivated, whilst more primitive activities such as sex and eating are disinhibited. One study found that polysomnography recorded several abrupt and spontaneous arousals from slow-wave sleep.

Sleep-related eating disorder
This condition is characterised by binge-eating disorder. The individual is confused, there is disordered arousal and amnesia of the event. It usually occurs after the individual has been asleep for 2-3 hours; typically the food ingested is high in carbohydrate and eating takes place in a hurried, uncontrolled manner. Unlike other parasomnias there may be a fluctuating level of awareness between episodes in the same night.

It is four times more common in females and tends to start in late adolescence. The Norwegian survey reported a lifetime prevalence of 4.5% and a current prevalence of 2.2%.

There is an association with restless legs syndrome (RLS). It should be differentiated from night-eating syndrome in which the individual is fully awake and aware of what is happening.
Epidemiology
Recurrent sleepwalking affects about 5% of children but episodes of the phenomenon may affect up to 30% of children and 7% of adults.

Prognosis
Most children with sleepwalking disorder grow out of it. Adult sleepwalkers tend to have more protracted waxing and waning phases of the phenomenon.

Rapid eye movement sleep behaviour disorder[^9]
This is enactment of the experience of dreams during REM sleep. Kicking, punching, flailing limbs, grabbing, shouting, talking and sitting-up are typical behaviours. It may occur acutely in those withdrawing from alcohol or other sedatives, or chronically when it tends to be the patient's family or bed partner bringing the problem to medical attention. It may present because of injury to the sufferer or their bed partner. If the patient wakes up then this occurs quickly and they are usually immediately lucid and oriented, with complete recall of the dream and with subsequent normal behaviour. It is rare for it to cause excessive daytime somnolence. It is often associated with neurodegenerative disorders.

Epidemiology
Thought to be quite rare but likely to be underdiagnosed due to symptoms being attributed to other parasomnias. There may be an increased incidence in some families with autosomal dominant inheritance. It is mainly a condition affecting men. It is most common in the sixth and seventh decades of life. It is relatively common in the context of those referred to sleep clinics. Telephone survey has found a prevalence of violent behaviour during sleep of about 2%. Probably about a quarter of these were due to the condition, giving a rough population prevalence of ~ 0.5%.

Prognosis
This depends on the underlying associated condition. In patients in whom there is no underlying disorder, the symptoms are frequently amenable to medication.

Restless legs syndrome and periodic limb movement disorder
These two conditions may co-exist. RLS tends to cause insomnia due to a constant, involuntary irritation of the legs causing their movement, on retiring to bed. Periodic limb movement disorder (PLMD) causes temporally-periodic, sleep-disturbing limb movements that rarely completely wake the sufferer but may cause them to feel excessively sleepy during the next day, due to disturbance of the sleep cycle. The majority of patients with RLS will also have PLMD but only a minority of those with PLMD also have RLS.

Epidemiology
Prevalence of RLS could be as high as 10-20% in the older age group and it is increasingly common with age. It appears to be about twice as common in older women in comparison with older men.[^10, 11] PLMD has an estimated prevalence of 4-11% in the elderly but some estimate it may affect up to 40% of those aged >65 years.[^11]

For further details of presentation, associated diseases, management and prognosis, see the separate Restless Legs Syndrome article.

Differential diagnosis[^1]
- Generalised anxiety disorder.
- Panic disorder.
- Obstructive sleep apnoea.
- PTSD.
- Undiagnosed or decompensated physical illness - eg, heart failure leading to paroxysmal nocturnal dyspnoea, neuropathy/myelopathy causing restless legs.
- Undiagnosed/relapsing psychiatric illness.
- Epileptiform disorders, especially temporal lobe epilepsy.
- Fugue states.
- Hypnagogic or hypnopompic phenomena (abnormal experiences associated with falling asleep or waking up).
- Alcohol or other drug misuse/withdrawal.

Investigations[^1]
No specific investigations are needed unless there is reason to suspect an underlying physical condition causing a secondary parasomnia. In such cases, the following may be helpful:
- Electroencephalograph (EEG)/CT/MRI scanning for temporal lobe epilepsy.
- CXR/echocardiography for suspected heart failure.
- Investigations/referral for suspected obstructive sleep apnoea.
- In those with RLS/PLMD, an FBC to exclude iron-deficiency anaemia is worthwhile.
- In older patients with RLS/PLMD or new-onset REM sleep behaviour disorder, screening tests such as U&E, LFTs and TFTs and others may be considered useful to exclude physical diseases common in this age group.
- Patients with atypical or confusing presentations may benefit from referral to a sleep clinic for polysomnography to reach a definitive diagnosis.
- PLMD has a characteristic EMG pattern if recorded during sleep episodes.

**Associated diseases**[1]

REM sleep behaviour disorder has been associated with:

- Lewy-body and other dementias,[12]
- Parkinson's disease,[13]
- Subarachnoid haemorrhage.
- Ischaemic cerebrovascular disease.
- Olivopontocerebellar degeneration.
- Multiple sclerosis.
- Brainstem neoplasms.

A recent association with narcolepsy has also been discovered.[14]

There appears to be an association between parasomnias in early life and the later development of vitiligo. This is thought to be related to an abnormality of the serotonergic neural system.[15]

There is an association between night terrors and sleepwalking and families with a predisposition for one condition also have an increased incidence of the other. There is also a link between both conditions and nocturnal frontal lobe epilepsy.[16]

Night terrors in children are not associated with psychopathology but in adults they can be associated with PTSD and generalised anxiety. Dependent, schizoid and borderline personality disorders are also more prevalent.

For all parasomnias, medication side-effects, toxicity or withdrawal due to prescribed or non-prescribed medication should always be borne in mind.

**Management**[1]

- Most parasomnias require no definitive treatment other than explanation, reassurance for the sufferer and their family/bed partner and an offer to follow things up.
- Information leaflets (see ‘Further reading & references’, below) are a relatively easy and effective way of achieving this.
- Once parents of children with terror disorder have been appropriately informed and reassured, the vast majority can cope with the condition and it will usually resolve. Keeping a sleep diary may help to identify trigger factors.[6]
- Most night terrors resolve with time and without treatment. Treatment of comorbidities such as sleep breathing disorders may be helpful. Promoting a regular sleep pattern in a stable environment is important. There is little evidence that sedative medication is helpful in the long-term management of children with night terrors and other sleep disorders. Tricyclics are occasionally used for severe symptoms or where the condition affects daytime performance (eg, at school).
- Patients with underlying physical or psychiatric disease may benefit from adjustment of their treatment or specialist input to help ameliorate sleep-related symptoms.
- REM sleep behaviour disorder is usually treated with nocturnal benzodiazepines such as clonazepam and tricyclic antidepressants, where there is some evidence for their efficacy.
- The successful treatment of sexsomnia with selective serotonin reuptake inhibitors (SSRIs) has been reported.[8]
- Levodopa/carbidopa, gabapentin and clonidine are sometimes used but there is little systematic evidence of benefit.
- Management in the context of dementia/Parkinson's disease can be difficult and may require expert elderly medicine/psychogeriatric input.

**Complications**[1]

- Accidental injury.
- Overeating during sleepwalking, leading to obesity.
- Relationship difficulties.
- Forensic consequences of behaviour during sleepwalking, particularly if the patient ventures into the outside world or displays sexual behaviour.

**Prevention**[1]

Sufferers should avoid precipitants, particularly medications, caffeine, alcohol or sedatives, especially at night. One study suggested that an increase in sleep disorders was more prevalent in children who shared a bed or a bedroom. Precautions against physical and potential legal consequences of disturbed nocturnal behaviour should be considered.

**Further reading & references**

- Parasomnia; PsychNet-UK
- Reading P; Advances in Clinical Neuroscience & Rehabilitation, Volume 8, Number 2, May/June 2008.

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