

A study of insomnia in Pennsylvania reported,

“insomnia is a symptom associated with a wide variety of mental and physical health problems requiring a proper psychiatric and medical management.”([1](#))

A. Disturbed sleep rhythm:

- Delayed sleep phase syndrome: difficulty falling asleep and in waking when necessary
- Advanced sleep phase syndrome: difficulty staying awake in the evening but waking too early.
- Problems relating to shift work etc.: difficulty getting enough sleep during available sleep times.

B. Insomnia associated with psychological problems:

- anxiety
- depression
- SAD: Seasonal Affective* Disorder

* affective= of moods (affect=mood)

A 1999 study by Washington State University researchers found that of people seeking medical attention for insomnia, more than half were diagnosed with a mental disorder, the most common problem being depression.

Depression is particularly associated with early morning waking. Dr. Doghramji, director of the sleep disorders centre of the Thomas Jefferson University in Philadelphia, suggested in 2000, that approximately 90% of depressed patients have some form of sleep abnormality and between 50 and 95% of depressed patients complain of severely disturbed sleep.

SAD, as we have seen, is associated with sleep that is not restorative and tends to occur during the winter months.

C. Insomnia associated with medical problems:

A paper in the prestigious journal JAMA, published in 2000 ([\[2\]](#)) noted that

"Sleep disorders, often unrecognised, complicate many physical illnesses."

- *pain*
- *restless legs*
- *periodic limb movement disorder*
- *movement disorders such as Parkinson's Disease*
- *cramps*
- *fibromyalgia*
- *multiple sclerosis*
- *sleep apnoea*
- *indigestion (hiatus hernia etc.)*
- *menopause*
- *hyperthyroidism*
- *urinary problems*
- *dialysis*
- *allergies*
- *shortness of breath*
- ***medication-related*** (*and may affect sleep rhythm*) : *including withdrawal*

Obviously, pain is a major factor in insomnia in people with arachnoiditis. Whilst bed may be the only place where we can get comfortable, nighttime may bring severe, often unrelenting pain, especially if it is neuropathic, which is known to be worse at night.

Muscular and joint pains can also be bad and prevent falling asleep because they have accumulated during the day's activities. Nerve pain and muscle cramps can awaken us frequently during the night, disturbing sleep considerably.

A recent study in Bath ([\[3\]](#)) found that 88.9% of chronic pain patients reported at least one problem with disturbed sleep, with greater sleep disturbance being associated with greater pain, disability, depression and physical symptoms.

Sleep disturbance predicted disability and physical symptoms independent of pain or depression.

The authors noted

“Sleep disruption is usually considered to be a consequence of the pain experience.

However, the results of the present study reinforce the view that sleep disturbance may have a bi-directional relation with other features of chronic pain”;

In other words, pain disrupts sleep, and lack of sleep is linked with greater pain. This obviously sets up a vicious circle.

Restless legs are a common problem, and generally involves a vague and difficult to describe discomfort in the legs and feet, relieved by getting up or moving the limbs about, rubbing the affected parts or taking a bath, but returning as soon as the person goes back to bed.

It can cause difficulty in falling asleep and repeated awakenings throughout the night.

In most people, there is no obvious underlying cause, but in arachnoiditis, it may be linked with abnormal nerve impulses due to compression by scar tissue, causing muscle fibres to contract. It may be associated with a crawling sensation of the muscles rippling or there may be muscle twitches.

Both Restless Legs Syndrome (RLS) and Periodic Limb Movement Disorder (PLMD) are more prevalent in people with underlying neuropathy, as in arachnoiditis or other conditions such as diabetes, renal disease or even pregnancy.

Periodic limb movement disorder often occurs simultaneously with restless legs and is characterised by movements ranging from shallow, continual movement of the ankle or toes, to wild, strenuous kicking and flailing of the legs and arms.

PLMD may also involve abdominal, oral, and nasal movement. Movement of the legs is more typical than movement of the arms. They typically occur for between half a second and 10 seconds, at intervals of 5 to 90 seconds.

PLMD includes any repetitive, involuntary movement at night. Movements tend to occur during stage 2 sleep, and they may awaken the individual. PLMD is estimated to occur in 5% of people age 30-50 and 44% of people over 65 years of age.

It may account for around 12% of patients with insomnia and 3.5% of people suffering from excessive daytime sleepiness.

Caffeine and alcohol may exacerbate symptoms. Anaemia and iron deficiency are also associated with worsening of the condition.

Parkinson's Disease and other similar movement disorders are associated with sleep

disturbance.

A study in India found that about a third of PD patients had insomnia; another third experienced nightmares and 15% had excessive daytime sleepiness, compared with around 5% for each problem in normal (control) individuals. ([\[4\]](#))

The majority of people with arachnoiditis experiences muscle cramps. They tend to affect the limb(s) worst affected by the condition and nocturnal cramps, which occur predominantly at night, are common.

Fibromyalgia is a pain amplification condition, which commonly co-exists with arachnoiditis; indeed many people are diagnosed with it before or instead of a diagnosis of arachnoiditis.

It is now recognised that fibromyalgia is associated with a type of sleep disturbance known as alpha-delta sleep disorder.

This involves intrusion of alpha brainwaves (normally experienced whilst awake) into deep (delta) sleep, which causes jolting back to lighter sleep and thus inadequate amounts of deep, restorative sleep.

This worsens the fibromyalgia symptoms of fatigue and musculoskeletal pain.

Multiple Sclerosis has been found to be associated with disturbed sleep, which has been postulated as being related to periodic limb movements.

An Italian study ([\[5\]](#)) found that MS patients had significantly reduced sleep efficiency and experienced more awakenings during sleep.

In 36% of patients, periodic limb movements were thought to be the cause.

A Dutch study ([\[6\]](#)) found that MS patients consulted their primary care doctor (GP) for three main problems aside from the MS-specific neurological problems: of which sleep disorder was one (the others were urinary infection and incontinence).

Sleep apnoea is a breathing disorder that is defined as cessation of breathing during sleep.

There are 3 types:

obstructive (the most common), characterised by repetitive pauses in breathing due to obstruction and/or collapse of the throat;

central: a neurological problem with cessation of all respiratory effort, and an automatic sleep reflex wakes the person.

The third type is mixed, a combination of the first two.

An analogy helps to explain: obstructive apnoea is like when a sock gets stuck in the Hoover nozzle, central is when the Hoover is switched off altogether.

Apnoea is clinically significant if it lasts at least 10 seconds and occurs 5 or more times per hour (less than 5 is normal).

Most people tend to be unaware that they have sleep apnoea. Symptoms include:

- loud frequent snoring : with episodes of silence lasting between 10 seconds and a minute;

the end an episode is associated with loud snores, gasping, moans and mumbling.

- body movements often accompany awakening at the end of an apnoea episode
- excessive daytime sleepiness or fatigue.
- unrefreshing sleep,
- morning headaches
- severely dry mouth

Indigestion is encountered quite often in people with muscular aches and pains, partly due to anti-inflammatory medication taken to relieve the pains.

It is worse at night because of the lying down position. Reflux may also be associated with chest symptoms, sudden shortness of breath at night and possibly sharp chest pain, as well as the typical burning sensation behind the sternum (and pain may radiate into the upper back).

Around the time of the menopause, women may find they suffer from insomnia. This can be of any type and can range in severity. Hot flushes and sweating may be associated with frequent waking during the night.

Hyperthyroidism, if not under control, may be associated with symptoms such as palpitations, which may disturb sleep.

Urinary troubles (incontinence) can lead to a need to get up in the night to visit the loo and this can compound sleep disruption.

Insomnia is a common problem in dialysis patients.

A Korean study([7](#)) looking at diabetic dialysis patients found that 68% of the patients studied had insomnia, which was related to age, nutritional status, and depression.

Allergies, whether food or respiratory, may keep you awake. Respiratory allergies cause

obvious symptoms such as runny nose, watery eyes, sneezing etc., and may cause wheezing which also disturbs sleep. Food allergies may be less obvious.

Allergy to dairy produce, wheat, chocolate, nuts, red and yellow food dyes etc. may trigger sleep problems which tend to resolve a week or two after stopping consumption of the culprit foodstuff.

Shortness of breath for any reason (asthma, chronic bronchitis etc.) can mean frequent awakenings and/or the need to sleep in a more upright position.

Medication taken to relieve pain or other symptoms may affect the sleep cycle, especially if not taken at the optimal time.

Tricyclic antidepressants such as amitriptyline are associated with an increase in restless legs and periodic movement. Sleeping pills are of course one of the major contributors to insomnia.

They are highly addictive and cause tolerance, so that a certain dose becomes ineffective and allows withdrawal, rebound insomnia, which can also occur if the drug is discontinued suddenly.

Examples of medication that may cause insomnia:

- antidepressant drugs e.g. Prozac
- antihypertensives
- bronchodilators : medication for asthma containing ephedrine, aminophylline etc.
- medication containing caffeine
- tranquillisers
- steroids
- thyroid preparations
- cancer chemotherapy agents

There are various other drugs that may impact on sleeping.

D. Insomnia due to lifestyle:

- stress
- smoking
- caffeine
- alcohol
- exercise
- eating large meal at night
- over-working
- relationship difficulties
- boredom/no-win situation
- stimulating activities late at night (not including sex)

It is hardly surprising to find that stress is a major factor in insomnia. Stress is linked with anxiety and alteration of certain body hormones that are involved in the body's circadian rhythm.

Smoking : nicotine is a stimulant. Smoking, far from helping us to relax, is in fact, winding us up further still.

Caffeine: again a powerful stimulant. In insomnia, the body's metabolism has speeded up by nearly 10%, so they are already hyper-aroused so that adding caffeine only makes matters worse.

Alcohol, far from being a solution, can in fact become part of the problem. The likelihood is that you will awake early and possibly with a hangover to compound matters.

Lack of exercise means that our bodies are not really tired enough to require restorative sleep. Of course, chronic illness is often associated with reduced mobility.

Eating a heavy meal late at night confuses the body, which is then stocked up for action but is expected to bed down for the night shortly afterwards! However, not eating enough can also be a problem and a light snack an hour or so prior to retiring can stave off any hunger pangs that

might contribute to waking you up in the wee small hours.

Overworking is an understandable trigger for insomnia. This applies to either an overworked body or, more commonly a mind wound up like a clock spring. Without a period of winding down, neither the mind nor the body are likely to be able to just 'switch off'.

Relationship problems, especially within the home, can cause angst right up to bedtime and marital difficulties of course can follow you into the bedroom.

Worries and lack of fulfilment in life can lead to a low-grade dissatisfaction and sense of frustration with life that can prey on the mind once the busy day has been completed and there is little to distract from the concerns.

Stimulating activities such as watching action films or reading a book that sets the mind working may work against relaxing into sleep. Similarly, brisk exercise late in the evening is not helpful.

E. Insomnia due to poor sleep habits:

- trying too hard to sleep
- being conditioned against sleeping in the bedroom
- sleeping 'catch as catch can'

Other sleep-related problems:

- **narcolepsy**: excessive sleepiness in the day and falling asleep at inappropriate times, often if excited or distressed. Associated with MS.
- **parasomnias**: including: nightmares/sleep terrors/sleep-related panic attacks/sleep walking/sleep talking/sleep paralysis

- **night sweats:** quite a common problem in arachniacs; often related to autoimmune problems; if undiagnosed, it is important that you seek medical advice as they can herald serious medical conditions such as thyroid disease. Night sweats are also frequent in menopause and may be the reason for repeated waking.
- **bruxism:** grinding the teeth at night; this is quite common and may be due to stress and/or pain. It may cause awakenings as well as an aching jaw, toothache and headaches.
- **reflux:** gastric juices are more likely to enter the oesophagus when we are lying down; this reflux may be felt as heartburn (burning sensation in the chest) or even as back pain. There may also be water brash (taste of acid in the mouth) and respiratory complaints; sudden onset of asthma-type wheeziness (when no history of asthma before) and recurrent chesty cough are suggestive of reflux-related problems.
- **headaches:** 4 types of headache are associated with sleep: morning headaches, lasting 30-90 minutes, caused by lack of oxygen in patients with sleep apnoea; migraine headache; cluster headache and chronic paroxysmal hemicrania. If these headaches occur soon after waking, they may be related to REM sleep, as blood vessels in the brain dilate during this phase, whereas they constrict during NREM sleep. The more constricted they become during NREM, the more dilated they are during REM sleep. Hence if you are sleep-deprived, you are likely to have more delta sleep, so more intense NREM sleep. Note that 'Sunday-morning' headaches might be due to caffeine withdrawal.(or a hangover!)

Perpetuating factors:

These develop after the insomnia has set in. They include worry about lost sleep, rising late in the morning, or sleeping in the day to 'catch up'. This irregularity of sleep makes it difficult to fall asleep the next night, thus sustaining the sleep problem.

Beliefs and Attitudes:

The following are statements that are mostly false, but if we believe them, can colour our perceptions about lack of sleep:

- I need 8 hours sleep every night
- if I don't get enough sleep at night, I need to catch up the next day by napping
- if I go without sleep for 2 or 3 nights I may have a nervous breakdown
- by staying in bed longer, I get more sleep and feel better the next day
- if I can't sleep, the best thing is to stay in bed and try harder
- if I don't sleep well, I won't be able to function the next day
- when I feel anxious or depressed during the day, it is because I haven't slept well
- I can't manage if I have disturbed sleep

- I can't control my mind when it races at night.
- if I can't overcome the insomnia, my life can't be enjoyable or productive.

Sleep Hygiene:

The following are points to ponder concerning our sleep hygiene: yes answers reveal areas that we need to consider changing in order to facilitate improved sleeping conditions.

- do you have arguments in bed?
- do you worry whilst you're in bed?
- do you worry or feel apprehensive before you get into bed?
- are you prone to clock checking?
- are you forcing sleep?
- do you find you sleep better out of the bedroom?(able to fall asleep in front of the TV)
- are you OK at weekends but not before work?
- is your sleeping environment conducive : pleasant temperature, light level

SLEEP LIKE A LOG?

A sleep diary or log is a good starting point to see exactly what the extent of the problem is.

An example might look like this:

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Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Total nap time yesterday

Sleep medication: dose & time

Time started trying to sleep

How long before fell asleep

How many times woke up

How many minutes awake during night *

Time awoke for last time this morning

How many hours' sleep?

time got out of bed

How well slept ~

How refreshing sleep was #

not including time taken to fall asleep

~ compared with average over past month 1. much worse; 2. slightly worse; 3. fairly typical; 4. slightly better; 5. much better

1. not at all restorative: no benefit; 2. slight restorative value; 3. restorative but not adequate; 4. relatively satisfactory; 5. Completely satisfactory

It may also be helpful to assess your daily activity levels in a separate log and compare them to see if there is a correlation.

In fact, any variable can be looked at in this way to see if there is a pattern emerging.

So pain level, other symptoms, caffeine consumption, diet, menstrual cycle, medication changes (especially timing) can all be assessed to see their impact upon the sleep pattern.

For people with chronic pain, it is advisable to keep a pain log for the same period as the sleep log; it might look something like this:

Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Pain level yesterday

Pain

medication

Pain preventing onset of sleep

How long before fell asleep

How many times woken up by pain

How many minutes awake during night

Site of pain that caused waking

Did pain prevent falling back asleep?

Needed extra pain medication

Level of pain on waking in morning

Worse/better than normal?

Other symptoms?

Once you have kept a sleep log for a month or so, various factors may become clearer.

You will be able to see whether your insomnia is a disruption of the sleep cycle, with a shift either forwards (late to sleep, late to rise) or backwards (early to bed, early to rise) or indeed, a disruption relating to other factors such as pain, muscle spasms, need to pass water etc.

Suggested reading:

No More Sleepless Nights, Hauri and Linde, John Wiley & Sons, 1996.

Counting Sheep: the Science and Pleasures of Sleep and Dreams, Paul Martin, Harper Collins 2002.

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[2] Lamberg L.JAMA. 2000 Nov 1; 284(17): 2173-5.Sleep disorders, often unrecognised, complicate many physical illnesses.

[3] McCracken LM, Iverson GL. Pain Res Manag 2002 Summer; 7(2): 75-9 Disrupted sleep patterns and daily functioning in patients with chronic pain.

[4] Kumar S, Bhatia M, Behari M. Mov Disord 2002 Jul; 17(4): 775-81 Sleep disorders in Parkinson's disease.

[5] Ferini-Strambi L, Filippi M, Martinelli V, Oldani A, Rovaris M, Zucconi M, Comi G, Smirne S. J Neurol Sci 1994 Sep; 125(2): 194-7 Nocturnal sleep study in multiple sclerosis: correlations with clinical and brain magnetic resonance imaging findings.

[6] Donker GA, Foets M, Spreeuwenberg P, van der Steen J. Ned Tijdschr Geneesk 1996 Jul 13; 140(28): 1459-63 [Multiple sclerosis in family practice]

[7] [Han SY, Yoon JW, Jo SK, Shin JH, Shin C, Lee JB, Cha DR, Cho WY, Pyo HJ, Kim HK, Lee KB, Kim H, Kim KW, Kim YS, Lee JH, Park SE, Kim CS, Wea KS, Oh KS, Chung TS, Suh SY Nephron. 2002 Sep; 92\(1\): 127-32.](#) Insomnia in Diabetic Hemodialysis Patients. prevalence and risk factors by a multicenter study.