

# Alberta Doctors' Digest

## On sleep

We live in generally troubled times. As our political, business and communications systems become ever more incoherent, we in turn become ever more disturbed and needing repair.

It's hard to figure out just what's gone wrong. An old argument notes that fish, for example, don't realize the medium they're in and that important things can go unnoticed. Our medium, as it were, is modernity itself, or the way we live now, and there are many hazards in our complicated lives. I think there's cause for alarm in whatever's happened to our sleep.

Sleep has changed for most of us. [As one wag puts it](#), "(It's) no longer personal, transcendent and romantic; it is medical, mundane, and pragmatic."

A substantial number of us, perhaps a third, would likely complain about sleep – either not getting enough, having trouble getting or staying there or finding that the rest achieved is insufficiently restorative. The world, it seems, is too much with us and has spawned a relevant addition to our vocabularies: [t'wired](#) – our common experience of being both tired and wired at the same time.



We are both tired and wired at the same time (image credit: Biljana Jovanovic, Pixabay.com)

I may be nostalgic for a past I've never experienced – before the Industrial Revolution brought gas lamps, soon followed by electric lighting, forever turning night into a version of day and forever altering our workday and resting lives. Until several hundred years

ago, for instance, we slept differently, taking to our beds for three or four hours post-sundown, rising after this to read, pray or whatever for an hour or two before settling down again for what became known as our second sleep.

By comparison, our lives now seem insomniac. We still respond to circadian rhythms, but sleep has become a fugitive thing, variable, and something we often chase. [We're all sleeping less now](#) and have gone from an average slumber time of 8.5 hours 50 years ago to less than 7 hours sleep most days.

The disruption in sleep is confined to us, and I still marvel at the sleep of animals, which seems effortless, varied and perfect. Koala bears sleep most of the time. Giraffes and elephants sleep sparingly. Birds have gone a step or two further in their adaptation, seemingly able to sleep when migrating, and some are able to sleep using a single cerebral hemisphere, with one eye open for business and wary of predators or danger.

We don't really know what sleep does, though we've described its cyclical stages in detail. It's touted as the mechanism whereby we consolidate and integrate memories. This may be so, but that raises the question: why must we be unconscious for such a big chunk of our lives?

It's an excellent question. [As one author puts it](#): "If sleep does not serve an absolutely vital function, then it is the biggest mistake the evolutionary process has ever made."

But sleep is indeed vital and central to our lives. Sleep deprivation leads to death in dogs and purportedly in rats, mice, fruit flies – and humans.

The [world record for fending off sleep](#) intentionally goes to a 17-year-old high school student who stayed awake for more than 11 days. Early days weren't difficult, but confusion and hallucinations were troubling as time wore on.

Perhaps we're all in sleep deficit positions. It is tempting to try to wed our sleep issues to current hypotheses about the role of chronic inflammation as possibly responsible for cardiovascular disease and neurodegenerative disorders, diabetes, obesity, cancer and even the aging process itself.

This begs the further question: what causes chronic inflammation? Here there are abundant but vexing and only partially supported answers: stress, anxiety, hormone problems, junk food, chemical exposure, digestive problems and physical stress.

Where does this leave us? Many and even most of our ills may be due to chronic inflammation, but much of the fabric of our lives may provoke chronic inflammation. It strikes me that this is a knot we're unlikely to untangle anytime soon.

[Jeffrey Illiff and his team](#) discovered something a dozen years ago which adds to our dilemma. We now know there is a brain-cleaning function, often referred to as the brain's *glymphatic system*. This clean-cycle system is said to be particularly active during sleep, removing debris and junk from our brains, possibly including the amyloid plaque material that Alzheimer's researchers find so interesting.

The implications are obvious: a bi-directional relationship may yoke the inadequacy of our sleep with cognitive decline. In support of this, researcher [Kristine Yaffe and team](#) followed some 1,300 adults older than 75 years of age for five years. They found that participants who'd suffered from disrupted sleep had more than double the risk of developing dementia.

We're not getting the sleep we need, it can be argued, and we haven't found much in the way of magic bullets to address the Alzheimer's/dementia predicament that may relate to our sleep troubles. We're awash in therapies intended to bolster our sleep, with a miscellany of licit and illicit medications that may or may not work at all or may at best achieve a counterfeit and possibly addictive alternative to natural sleep.

The ads we see for better beds, mattresses and pillows are all targeted at helping our slumber, as are the ads for hypnosis, relaxation and meditation training. For those in favour of more intrusion, there are electrical and magnetic gizmos that can be applied to the sleep-resistant noggin. Perhaps the best alternative for the weary and sleep-deprived involves cognitive behavioral therapy (CBT), which looks to address our misperceptions and maladaptive habits regarding sleep scheduling. This works, although it requires multiple training sessions and commitment, and it isn't an out-of-the-box solution we've come to expect.

It may serve us well to think about insomnia differently. As someone said, a bad night isn't always a bad thing. Many insomniacs have used their affliction to considerable benefit. I'm thinking of Marcel Proust, who is said to have completed his opus, *In Search of Lost Time*, when sleep eluded him. In similar fashion the Stoic philosopher Marcus Aurelius is said to have penned "Meditations" when he couldn't sleep.

There may be other benefits. We often say we'll "sleep on it" after a contentious agreement or dispute. Much of the success may relate to the sleeplessness of the insomniac, more clearly outlining problems and solutions. There's little question that sleep itself may be creative. The ring structure of the benzene molecule is said to have come to August Kekule in a state of reverie, imagining a snake devouring its own tail.

As well, we can't get past dreaming, with due respect to Sigmund Freud. Aztec myths may turn the world on its head here as they propose that the purpose of both sleep and living may be to dream. Dreams indeed may be a whole 'nother story.

Sleep remains mysterious and enigmatic. It is more similar to the fall of a feather than a march in enemy territory and that is what we should be aiming for. I'm unapologetically old-fashioned here and contend that weighted blankets and soft music may have their place, but I would contend that the best prerequisite for a sound sleep is the fatigue that attends a worthwhile job well done.

Beyond this, I'm still in favour of counting sheep. Count them anyway you wish – in two's or in three's or jumping over gates or through water. Start at 500, get them all over the fence and if you are still wide-eyed awake, repeat. Add sheep as necessary but persist. You'll get there.

Have an excellent sleep.

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Editor's note: The views, perspectives and opinions in this article are solely the author's and do not necessarily represent those of the AMA.

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