

DID YOU SLEEP WELL?

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Remember as kids, we woke up eager and alert for what the new day would bring, leapt out of bed and found something to do before Mum and Dad woke up?

Now - do you wake up stiff and achy, get a cramp if you overstretch, roll over and close your eyes again, wishing it was the beginning of the night not the end?

What has gone wrong?

Sleep. Why do we need to sleep. Everywhere in Nature there is a cycle of sleep or being dormant. The sun goes down, the light disappears, everything stops until the light returns. But what happens while we sleep.

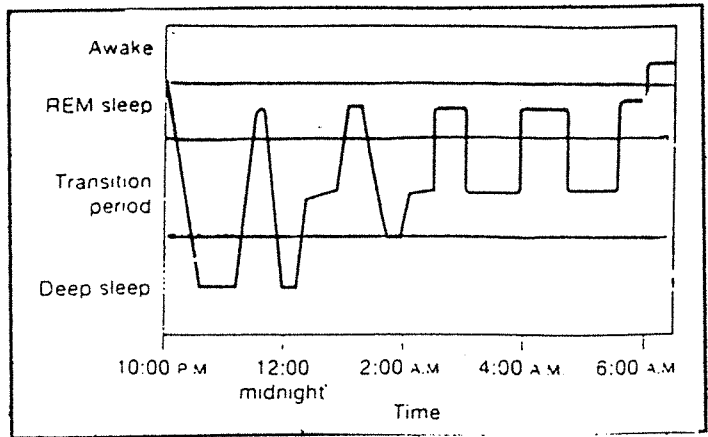
If we think of our bodies like a supermarket, busy with all sorts of comings and goings and activity all day, then when the shop shuts, there are some things that go on behind the scenes. The night packers come in to refill the shelves, the cleaners sweep and wash the floors, the bakers come in early to bake the bread and cakes and the butchers cut up the meat and package it for the fridge display.

While we sleep, a lot of behind the scene stuff is going on in our bodies. This is a time of body cell repair, clean out of by-products of muscle use during the day, replenishing of used energy stores, digestive processes, production of enzymes and hormones, committing short term memory to long term memory (zinc necessary for this to happen), problem solving etc.

So sleeping well is important.

Our brain actually uses just as much energy when we are asleep as it does when we are awake. There are 4 stages of sleep. When we first go to sleep we descend rapidly to deep sleep and stay there for about an hour and a half then surface through transitional sleep to the dreaming stage or REM sleep. REM stands for rapid eye movement, which occurs as if we were 'watching' our dreams.

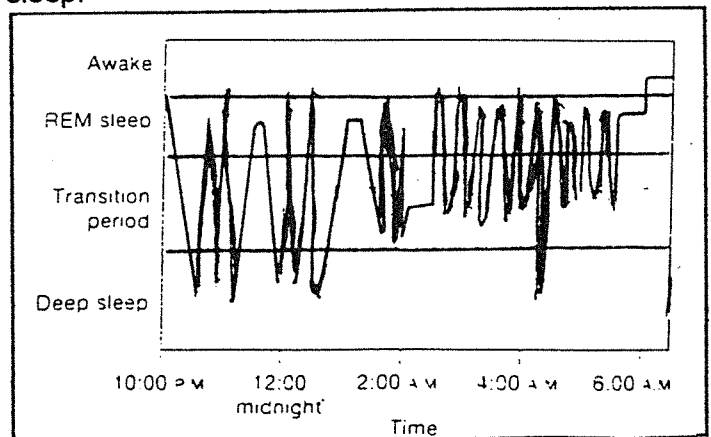
This first time in REM sleep only lasts about 5 minutes but we return there for increasing amounts of time and as morning approaches this may lengthen to half an hour and then finally we wake up. When we are in deep sleep, the entire body relaxes. Brain patterns are low frequency, the heart rate slows, blood pressure goes down, breathing gets slower and deeper, energy use drops by 30%.



In REM sleep, dreaming is accompanied by alterations in blood pressure and breathing, brain patterns resemble awake patterns but is less receptive to outside stimuli (things that wake us) and muscle tone is even more relaxed.

Altogether we spend about 2 hours of sleep dreaming. Dreams are only remembered if we wake during REM time. Dreams should be in technicolour. Black and white dreams indicate low B6 levels.

This muscle relaxation during deep and REM sleep can be a problem if throat muscles are already weak due to polio. Sleep apnoea, or the temporary cessation of breathing, causes a lowering of oxygen levels and a rise in carbon dioxide which triggers the brain to bring us out of deep sleep to wake or almost waken, which allows the breathing muscles to work better. If this keeps happening frequently through the night, then we don't get that prolonged restful sleep.



One of the behind the scenes activities that occurs in that first deep sleep, is renewal by the body of its stores of certain hormones like growth hormone and melatonin. (Melatonin needs really dark darkness too, so street lights and night lights can lower production. Growth hormone, commonly found to be low in polio survivors, is blocked if a sweet supper is eaten within a few hours of going to bed.)

Growth Hormone is important for cell growth and repair, particularly muscle and joint cells. It also stimulates use of stored fat cells for energy and the release of glucose reserves in the liver for energy. Melatonin is known as our natural nightcap. It induces sleepiness and helps to regulate the natural body rhythms of sleep and waking. It is also known to have an anti-oxidant effect, protecting nerve tissue.

So you can see how what happens at night is important to how much energy we have the next day!

As well as the Central Nervous System that contains the nerves damaged by polio and the nerves for feeling, (like pain, hot, cold) we have another nervous system that does all the things we don't think about that happen automatically - the Autonomic Nervous System. This is composed of the Sympathetic (or awake time - known as fight or flight) System and the Para-sympathetic System, which is very active when we are asleep (because it has a lot to do with the organs of the digestive system.) So we need to boost this system at night.

WHAT WE CAN DO TO GET A GOOD SLEEP

There are a number of things that help us prepare for sleep.

RELAXING

Turning our minds off from the activities and worries of the day is very important. If we don't, this can stop us sleeping. We know not to overexcite children before they go to bed if we want them to sleep. The same applies to ourselves. We can do this in various ways. We have 3 modes of communicating with the outside world and usually one or two work better. So it is best to use the easiest one as a way to relax. See next page to work out which one works best for you. My dominant mode is visual so I read fiction to relax before bed (5-15 minutes is enough). If your dominance is auditory, listening to music will work. If both are dominant, watching TV can put you to sleep. If sensory, ie feeling (kinesthetic) is dominant, then action relaxes you - a walk at night, housework, a cuddle.

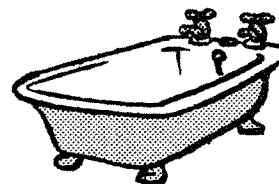
BOOSTING SERATONIN LEVELS

Serotonin is the body hormone that helps us to get to sleep quickly. Serotonin is boosted by carbohydrate foods ie grains, vegetables. So vegetables for tea actually helps us to get ready to sleep. If you are going to have a snack before bed

you are better with bread and vegemite or savoury biscuits, (rather than cakes, sweet biscuits or lollies - remember foods that turn on insulin production too much at night, stop growth hormone production.) Other serotonin stimulants include walking, riding, stretching, reading, meditation and prayer.

BOOSTING the PARASYMPATHETIC

Heat and protein turn on this system - (meat with our vegies for tea.) Remember as kids we had our baths after tea and off to bed - sound asleep in no time. Heat ie a hot bath just before bed, turns on the parasympathetic. If you can't get into the bath or don't have one, a hot shower is better than nothing. Electric blanket or hot water bottle can help too. And if it is still a problem - remember the traditional hot glass of milk to go to bed? (or a hot cocoa or a milk substitute)



TIPS FOR BETTER SLEEP

1. **Relax** - read a book, watch TV, walk
2. **Turn on serotonin** - bread, biscuits
3. **Turn on Parasympathetic** - hot bath or shower. electric blanket, hot milk
4. **Comfortable posture** - lie on your side - foetal position
5. **Bed** - firm mattress/ open window
6. **Muscle relaxer** - magnesium
7. **Treat Sleep Apnea** -and snoring
8. **Don't exhaust yourself** - rest periods
9. **Don't worry** - life goes on

SLEEPING POSITION

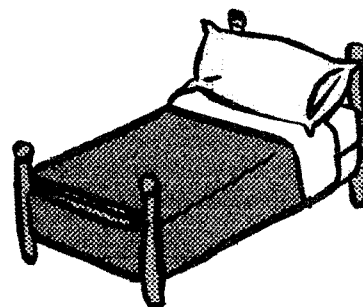
Now we are in bed - how do we lie. The most relaxed position for all muscles is the foetal position ie on the side, legs together, slightly bent, arms and neck forward, and preferably crossed across the chest. This doesn't put any strain on muscles or compress any nerves. Avoid lying on back or stomach as breathing is more difficult. If snoring or sleep apnoea is a problem, lying on the back allows the airways of the throat to collapse causing

obstruction. In all stages of sleep the muscles relax and muscle tone decreases markedly, as do heart rate, blood pressure, respiratory rate and use of energy. So get into the position which causes the least problems and allows muscles to relax properly.

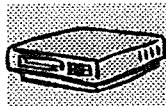
BED and MATTRESS

A firm mattress is best - not too hard (can't relax properly) and not too soft (doesn't keep the body aligned properly.)

Pillow should be just enough to support the neck and maintain spinal alignment. If you need to have your head higher to help breathing, raise the whole mattress by blocks under the bed legs or a wedge under the mattress, so that your spine stays straight.



BEDROOM Always have plenty of fresh air available. Have a window open a bit. Make sure the room is dark. Don't have your bed near to electric power boxes (on the other side of the wall). Electrical objects, like clock radios, electric blankets, TV's send out electric radiation when switched on and if we are in range and they are close to us, can interfere with brain patterns and other body electrical impulses.



STIFF SORE MUSCLES



No it is not usually the mattress causing this. Your body is short on magnesium which is necessary for muscles to relax. Cramps are caused by low magnesium too. Calcium and magnesium balance each other, so cheese or milk at night may upset this balance, lowering magnesium even further. (One of our members was heard to comment - "Is that why I get cramps when I've had icecream that night.")

There is a little magnesium in leafy green vegetables or fish. But if a real problem it is simpler to take a reasonable dose of magnesium supplement. Check the elemental magnesium available in the fine print (and don't get a mineral mix - calcium present will negate the extra magnesium you are taking.)

NB. Don't use muscle relaxant drugs eg valium, serapax, mogadon, normison. They are contra-indicated in post polio as they can make polio muscles even weaker causing sleep apnea or breathing problems during sleep.

If your problem on rising is stiff joints or arthritis, you need boron - the trace element that your body uses to repair joints. Our members can testify it works. Your doctor can prescribe or you can ring Tessa for the cheap version. Once pain and stiffness has gone stop taking it. Resume briefly if niggles return.

WAKING UP IN THE MIDDLE OF THE NIGHT

1. **Cold can wake you** - it primes the sympathetic system - so make sure you are warm enough.
2. **Pain waking you** - what is causing the pain?
If it is joints - work on the boron.
If it is sore muscles - magnesium and carnitine.
If it is pins and needles or sharp pain, try B6.
Reposition yourself in the relaxed foetal position.
3. **Legs jumping at night?** You have over used and exhausted the muscles so they are complaining. Try carnitine (in the morning, not at night) and magnesium.
4. **Wake with a start**, or short of breath, or dreaming of falling or drowning? You probably have sleep apnea. Avoid over-exhausting yourself. Avoid eating a heavy meal at night. Avoid alcohol at night. Sleep on your side. If this doesn't work, make an appointment at the your local Sleep Disorder Clinic (in WA this is at SCGH).
5. **Hungry?** Make sure you eat more protein during the day and try some carnitine with it.
6. **Going to bed too early?** If you are so tired that you need to go to bed early, you need carnitine to extend your energy levels. Cut back on your daily activities to work within your limits. You will sleep better and longer.
7. **Don't worry that you are awake.** As you get older you may not need as much sleep. Some people do well on 4 hours, others need 10. If you have woken up thinking about something, this is part of your brain problem-solving process. Write it down so you don't need to remember it now, and you may get straight back to sleep. Otherwise, try boosting the parasympathetic again - read, listen to music, have another hot bath, hot drink, do some housework.

Getting a good sleep prepares us for the next day. We owe it to ourselves to make it work. It is as important as being awake. So put a little thought and effort into it. It pays off.

1. How to work out your best mode of communicating

- | | | |
|---|---|---|
| 1. a) I love to listen to music
b) I like reading books
c) I like to dance | 7. a) hear small changes in engine
b) like to keep car clean
c) feel at one with car when drive | 13. a) like to talk a problem through
b) good at finding way with map
c) feel much better after exercising |
| 2. a) prefer oral tests to written
b) am good at spelling
c) uses 'gut-feeling' for answers | 8. a) told that I'm easy to talk to
b) see speech as mental pictures
c) often touch people as talk | 14. a) prefer to have quiet times
b) fussy that things be neat/ tidy
c) like to feel at home in surrounds |
| 3. a) I like to use my voice
b) I like to look good
c) I like hugs and kisses | 9. a) remember people by their voices
b) remember a face but not a name
c) I forget what people look like | 15. a) I like to imitate people's voices
b) I prefer to watch and take notes
c) I like to act the part |
| 4. a) think better aloud
b) put ideas into pictures/ words
c) like hold/touch things as think | 10. a) like to hum/sing to the radio
b) like to look at photos/pictures
c) enjoy making things with hands | SCORE a)..... responses
b)..... responses
c)..... responses |
| 5. a) listen to meaning behind words
b) look at person to find meaning
c) like to shake hands with people | 11. a) would rather be told than read it
b) like to see illustrations on board
c) like to do small group work | If most responses are -
(a) - you use sound or auditory,
(b) - you use sight or visual,
(c) - you need to feel or do, kinesthetic. |
| 6. a) prefer to hear story than read it
b) prefer books and pictures
c) prefer walking/sporty activities | 12. a) good listener
b) evaluate others by appearance
c) take instant like/dislike to people | We should be reasonably balanced but usually 1 or 2 are better than others. |