

February 2018 www.sleepapnoeanz.org.nz

President's Message

Greetings Members,
Another year has rolled in and we have a few changes on the committee. With Michael retiring as president and leaving the committee, I have agreed to take on this role for this year and we will hope that we can generate some fresh interest for people to join the committee. If you would like to come and join us, we will be happy to co-opt you at any time during the year. We also welcome Rowan Dowling to the committee and farewell Mike Matson and Ross Kirkbride who have been our roots for many years. Thank you to all three members.



The work is not onerous with just a few meetings each year currently held via Skype. The days of rushing around the country organising support meetings have gone, and we now offer our support via email and phone. While this does not provide for robust discussion amongst a larger group, the committee are all willing to share their knowledge about sleep apnoea, seeking treatment and getting used to CPAP. We feel this gives us the opportunity at any time you have need of support. I get regular phone calls and emails and this is the part of SAANZ that I find most beneficial and rewarding. Phone numbers and emails are on the website and in this newsletter, so don't hesitate to get in touch.

The AGM confirmed that subscriptions be \$0 for this year but don't forget to update any details via the website link or by emailing us - we can only keep in touch if you do!

I will continue in the editor role at this stage, but if you have a few computer skills and would like to help out, that would always be appreciated. Again just give me a call or email me.

Keep healthy and sleep well.

Jill Hammonds
President / Editor

Ph 021344253

OSA Reduces Grey Matter in Kid's Brains Parents and Grandparents Take Note!

A study of children with moderate to severe obstructive sleep apnea (OSA) has found significant reductions of grey matter – the brain cells involved in movement, memory, emotions, speech, perception, decision-making and self- control – in several regions of the brain.

The study, conducted at the University of Chicago in the US and published in the journal *Scientific Reports*, compared the brains of children between seven and 11 years of age to those of children of the same age who slept normally.

The findings point to a strong connection between this common sleep disturbance, which affects up to five per cent of all children, and the loss of neurons or delayed neuronal growth in the developing brain.

The researchers examined 16 children with OSA, with the brain patterns of each child evaluated overnight in a paediatric sleep laboratory. Each participant also went through neuro- cognitive testing and a brain scan with non-invasive magnetic resonance imaging (MRI).



The researchers compared those scans, plus neuro-cognitive test results, with MRI images from nine healthy children of the same age, gender, ethnicity and weight, who did not have OSA. They also compared the 16 children with OSA to a further 191 MRI scans of children who were part of an existing database.

They found reduced grey matter in multiple regions of the brains of children with OSA. These included the frontal cortices, which handle movement, problem solving, memory, language, judgement and impulse control, plus the prefrontal cortices, which are responsible for complex behaviours, planning and personality. Reduced grey matter also occurred in the parietal cortices, which handles sensory input, the temporal lobe for hearing and selective listening, and the brainstem, which controls cardiovascular and respiratory functions.

This extensive reduction of grey matter in children with a treatable disorder provides one more reason for parents of children with symptoms of OSA to consider early detection and therapy.

Although these grey matter reductions were rather extensive, the direct consequences can be difficult to measure.

MRI scans provide a bird's eye view of the apnea-related difference in volume of various parts of the brain, but they don't reveal, what happened to the affected neurons, or whether or not the brain cells have shrunk or have been lost completely.

The researchers said it was difficult to tell exactly when the damage occurred, but previous studies from the group showed that they can connect the severity of the disease with the extent of the cognitive deficits when such deficits are detectable.

Without extensive tests of cognitive function prior to the onset of sleep apnea, it is difficult to fully understand the effect of the loss of neurons.

The researchers also said it may just be too soon to measure, given the children in this study were between seven and 11 years old, whereas in previous studies, the connections between greater grey matter volume and intelligence have been documented only in children with an average age of 15.4 years.

If you suspect your child or grandchild has sleep apnea, contact your GP or paediatrician for more information.

Sleep apnea in children is commonly characterised by snoring, pauses in breathing that can last between 10 seconds and a minute, and a gasping or choking sound as breathing commences again. Be aware that just like adults with sleep apnea, children have no idea that breathing stops during sleep, and it often takes a witness to confirm the symptom. Other symptoms include profuse sweating, wetting the bed repeatedly and waking with a dry mouth.

“Sleep Disorders Australia Newsletter Volume 21 – Number 3 June 2017”

Inflammation could precede OSA, rather than be a symptom

A new study involving a group of children and spanning eight years has revealed that inflammation originating from abdominal fat may actually precede obstructive sleep apnoea (OSA), rather than being a symptom of the sleep disorder, as traditionally thought. The discovery could potentially lead to new ways to treat and predict OSA.

Inflammation is an immune response to foreign substances, in which white blood cells produce chemicals to fight these foreign invaders. According to the research, which was conducted at Penn State College of Medicine in the US, OSA severity also correlates with high levels of inflammation.



OSA affects more men than women. One plausible explanation for this is that men tend to have more abdominal fat, which is a major risk factor for developing OSA and is associated with higher levels of inflammation.

The researchers said one of the primary reasons for the study was to learn more about which comes first: the inflammation or the sleep disorder.

The study leaders said inflammation has been primarily considered a consequence of reduced blood oxygen levels during sleep, which are caused by the pauses in breathing, known as hypopneas. Treating the inflammation with medication can also reduce sleep apnoea severity, with the research suggesting that this relationship could also work the other way around.

During the study, the researchers examined 51 boys and girls between the ages of five and 12 with OSA. Each participant was studied during two visits – one at the beginning and another eight years later. Each participant took part in a sleep study, physical examination and had blood tests during each phase.

The researchers measured the severity of OSA for each participant, and also took height and weight measurements, along with checking their blood for levels of C-reactive protein, or CRP, a marker of inflammation.

Upon analysing the data, the researchers found that increases in waist circumference in boys were positively correlated with increases in CRP. Additionally, increases in CRP predicted OSA in adolescence. When taken together the researcher noted that this study suggests inflammation originating from abdominal fat does in fact precede the development of OSA.

Furthermore, other studies have shown that weight loss can help reduce the severity of OSA – this study supports these findings by showing that, even as early as adolescence, metabolic factors are driving the development of sleep apnoea, just as seen in adults.

The researchers said the results, which were published in the journal *Brain, Behaviour and Immunity*, could potentially change the way doctors treat and diagnose sleep apnea in both children and adults alike.

CPAP machines tend to be most effective for people with severe OSA. The researchers said that if findings of this study can be replicated, perhaps future studies and research can consider looking at biological-based interventions instead of a mechanical one, like CPAP.

For example, in the case of a 30-year-old man who is having problems with snoring and mild to moderate OSA, checking the levels of CRP for inflammation could help predict whether this person is at risk or developing severe OSA or other problems associated with the disorder in the future, such as hypertension, heart disease, stroke or diabetes.

By monitoring a person with high CRP levels, a doctor or sleep physician has the potential to predict and prevent the development of OSA and any subsequent diseases or conditions.

Sleep Disorders Australia Newsletter Volume 21 – Number 5 October 2017

Nutrition Corner



Can an ancient Indian herb help insomnia?

Never heard of Ashwagandha? You're probably not alone, but this ancient Indian herb has recently been found to promote the power of getting to sleep and staying asleep among insomniacs.

In a recent study, researchers discovered that the Ashwagandha leaf contains triethylene glycol (TEG) which is the active component of the leaf that induces physiologically sound sleep. TEG was found to promote and increase the amount of non-rapid eye movement (Non-REM) sleep significantly, which is the stage of the sleep cycle when deep slumber occurs and the body repairs and regenerates. Adults spend about 80 per cent of the cycle in this phase. You can purchase Ashwagandha from supplement shops, but check with your GP first.



Note: *This is not an alternative to CPAP use for sufferers but may be interesting to those using CPAP who still have trouble sleeping. Any sleep inducing compound is harmful to untreated OSA sufferers as it will likely increase apnoea episodes as the body and tongue relaxes further.*

Fitness Tip

The weather has certainly been hot enough lately to make this fitness workout very pleasurable. Head down to the beach, the river, the lake or the local swimming pool, and walk in water - or better still jog or run. This is great exercise - the water acts as the resistance, and resistance training is an important exercise for those trying to lose weight, control diabetes or just get a better night's sleep. Ten minutes is all you need initially and you can build up or increase frequency as you tone up. When you're ready for more check out

<http://bit.ly/workoutinwater>



Q&A - questions submitted via the website and support meetings

None received this quarter - maybe you have one you'd like answered.

Check out the website questions section http://www.sleepapnoeanz.org.nz/frequently_asked_questions.shtml

SAANZ – P O Box 88, Hamilton 3240

<http://www.sleepapnoeanz.org.nz>

Editor saanz.editor@gmail.com

The printing and distribution of this newsletter was funded by Fisher & Paykel Healthcare NZ.

We thank them for their continued interest in and support of SAANZ.