

# Sleep Watchers

Summer 2020

Dear Colleague,

We hope this quarter's newsletter finds everyone in good health and spirits. As always we genuinely appreciate your support and look forward to continuing to help you improve the quality of life for your patients.

Please let us know if you would like to see a specific topic covered in our next issue. It is our goal to provide as much information as possible to better serve your patients. We appreciate the trust you place in us by allowing us to participate in the care of your patients.

Best Regards,

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Indiana Sleep Center

precautions are being taken to keep patients and staff safe. We are taking careful steps and adhering to all required local and national guidelines. All of the previous referral processes remain the same. Regarding sleep testing: Diagnostic testing is being performed as usual and for full night titration studies a document negative COVID-19 test is required. As a courtesy, ISC will be coordinating the COVID-19 test if required. We are grateful to all our referring providers and want to thank you for your patience and understanding during these difficult times.

Abhinav Singh MD, MPH FAASM, Facility Director  
Daniel Pankiewicz, RRT/RPSGT, Director of Sleep Services



## #BeatCorona #DefeatCorona #DepleteCorona

*Abhinav "Sleep Vigilante" Singh MD, MPH FAASM*

While we are hunting for a cure for the novel Coronavirus, one very reliable (> 90 % effective) weapon against COVID-19 is preloaded in all of us.

**Any guesses?** ...If you said "My immune system", you are absolutely right.

**What?** Oh yes!! Lack of optimal quantity & quality of sleep can **weaken** your immune system in many ways.

**How does Sleep help your immune system?** Slow wave sleep which we get in the first half, enhances immunological memory. This helps your body remember the pathogen and is extremely important for it to be able to fight off future attacks.

First half of the night sees an increase in pro-inflammatory Cytokines. This helps eliminate infectious pathogens. The second half of the night sees anti-inflammatory proteins. Chronic sleep deprivation could result in a pro-inflammatory response, leading to long term health consequences.

## Indiana Sleep Center COVID-19 Status update

**T**he Covid-19 pandemic has had a major impact on every aspect of life, especially health care. The operations at ISC were paused for a short period of time. We are happy to announce that within the last few weeks the ISC is once again gradually reopening and performing sleep testing. Careful diligent



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*continued on page 2*

## #BeatCorona...continued

### What happens when you don't sleep well?

1) **Can't get to the Party** → Sleep deprivation has shown to impair White blood cell migration to the affected sites in the body. Back up doesn't arrive and the germs shall thrive.

[Besedovsky Et al. Physiol Rev. 2019 Jul 1; 99\(3\): 1325–1380.](#)

2) **Less is Less** → Sleep loss is associated with Increased levels of stress hormones, adrenaline, prostaglandins and both are known to reduce levels of INTEGRIN. This is an adhesion molecule that helps T-cells stick to the Virus infected cell and destroy them. Less Sleep = Less Integrin. T cells rendered less effective.

[Dimitrov Et al, JExp Med\(2019\)216\(3\): 517–526.](#)

3) **Less Battery Packs** → Sleep deprivation (quantity & quality) has shown to increase damage to mitochondria (power packs). Subjects with Sleep Apnea showed increased damage to Mitochondria.

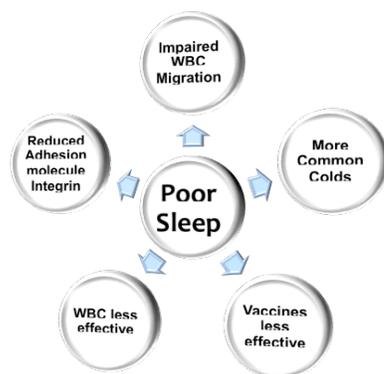
[Lacedonia Et al. Respir Res. 2015; 16\(1\): 47.](#)

4) **You are so Common You are so Cold** → Subjects who were sleep deprived (<7hrs) showed 3 times more incidence of the common cold compared to the people who slept adequate hours.

[Cohen Et al, Arch Intern Med. 2009 Jan 12; 169\(1\): 62–67.](#)

5) **Even the good stuff is not as good** → Sleep deprivation has been shown to reduce immune response to several vaccines including the influenza vaccine. Subjects who were sleep deprived (<7 hrs) produced less immunological response(antibodies) and were 11 times likely to remain unprotected.

[Prather Et al. Sleep. 2012 Aug 1; 35\(8\): 1063–1069.](#)



### Ever wondered why you crave sleep when sick?

This is a natural effect of increased cytokines, (chemicals produced by white blood cells) which

in turn helps your immune system fight off infection. The increased cytokines also activate your sleep drive and this extra sleep further strengthens your immunity.

Instead of buying OTC supplements that claim to boost immunity, investing in **optimal sleep** is a much simpler, reliable and an evidence-based solution.

The woods are lovely, dark and deep,  
But I have promises to keep,  
Nothing should, can, and will ever replace  
The Magical Powers of a Good Night's Sleep!!

Abhinav "Sleep Vigilante" Singh  
Adapted from Robert Frost

## Epidemiology and Pathophysiology of Childhood Narcolepsy

Thomas J Dye, Neeпа Gurbani, et al.

*Review Paediatr Respir Rev 2019 Jan;25:14-18*

It is now recognized that there are two types of narcolepsy. Narcolepsy type I or Narcolepsy with cataplexy is caused by the loss of hypocretin or orexin neurons. Narcolepsy type II or narcolepsy without cataplexy has normal hypocretin and the etiology is unknown. Hypocretin is a neuropeptide produced by neurons in the lateral hypothalamus. Both genetic and environmental factors play a crucial role in the pathogenesis of narcolepsy. Most patients with narcolepsy type I and half of patients with narcolepsy type II carry HLA-DQB1\*0602. HLA-DQB1\*0602 forms a heterodimer with HLA-DQA1\*0102 and may act as an antigen presenter to the T cell receptors, resulting in narcolepsy susceptibility. In addition, narcolepsy has been shown to be linked to polymorphisms in other non-HLA genes that may affect immune regulatory function, leading to speculation that autoimmune processes may play a crucial role in the loss of hypocretin neurons.

Infections have been proposed as a potential trigger for the autoimmune-mediated mechanism. Several recent studies have shown increased cases of narcolepsy, especially in children and adolescents in relation with H1N1 influenza. *The increased cases in Europe seems to be related to a specific type of H1N1 influenza vaccination (Pandemrix), while the increased cases in China are related to influenza infection. The data from the Pediatric Working Group of the Sleep Research Network have shown similar increases of early onset narcolepsy in the United States.*

**AASM**

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