



Doctors' Choice

N U T R I T I O N

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In the News – Sleep restriction reduces insulin sensitivity!!

1. Effects of sleep restriction on insulin sensitivity – long term of sleep deprivation = diabetes?
2. Voted WE Best of the City Silver Winner in Best Natural Health Practitioner – THANK YOU!!



Sleep restriction for 1 week reduces insulin sensitivity in healthy men

A recent article published by Buxton et al. investigated the effects of sleep deprivation for 1 week and its effects on insulin receptor sensitivity in healthy men. Insulin receptors bind onto insulin, the hormone released from our pancreas which helps to regulate blood sugar levels in our body. Basically, if the sensitivity of the receptors decline in response to insulin, our ability to regulate the amount of blood sugar floating around gets compromised. So...back to the study. A 12 day inpatient General Clinic Research Center study included 20 healthy men (age 20-35 and BMI 20-30) subjected to 10 hours/night in bed for ≥ 8 nights (sleep replete) followed by 5 hours/night in bed for 7 nights (sleep restricted). These men received either a psychostimulant drug (modafinil 300mg/day) which enhances wakefulness and vigilance or placebo during nights of sleep restriction. Diet and activity levels were controlled. On the last two days of each sleep condition, glucose metabolism were assessed; additionally, salivary cortisol, 24 hour urinary catecholamines and neurobehavioural performance were measured. Results: Insulin sensitivity was reduced by 20 +/- 24% after sleep restriction ($P=0.001$) without significant alterations in insulin secretory response, however, glucose tolerance was also reduced by sleep restriction. The authors noted that these outcomes were not affected by the drug modafinil. (Buxton et al. *Diabetes*. 2010 Sep; 59(9):2126-33.

Advice from Dr. Aaron Hoo

The study above sheds clues as to the effects of sleep disturbance on our ability to manage blood sugar. It is no secret that sleep deprivation is a form of stress on the body. When our body is acutely stressed, cortisol is released from the adrenal glands; cortisol in short bursts functions to regulate blood glucose metabolism, blood pressure, insulin release for blood sugar maintenance, immune function and inflammatory response. However, during chronic stress (eg. frequent and chronic sleep deprivation), prolonged cortisol release has a negative impact on the body including impaired cognitive performance, elevated blood sugar, decreased bone density and muscle tissue, higher blood pressure, lowered immunity, increased inflammation as well as increased abdominal fat. The key here is that cortisol actually counteracts the effects of insulin, thereby contributing to the inability of insulin to function in regulating blood sugar. As such, chronic insulin impairment (whether from decreased insulin receptor sensitivity or insulin release) secondary to chronic cortisol release from long-term stress has an overall detrimental effect on the body as outlined above.

Naturopathic Options:

For more information on sleep regulating formulas please check out my online store:

http://www.doctorschoicenutrition.ca/online_store.html, log in with your username and password and look for the following products: **Somnolin and MyoCalm PM.**

Clinic Savings



Bring this portion into the clinic to receive
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