It’s All in Your Head?

Sleep & How the Brain Detoxifies.
Creating a healthy (G)lymphatic System
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Introduction:

- Are we “Human Beings or Human doings”? Do, be, do, be, do!
- There is stress that affects our brain....
  - “If you are living in the past, you have depression.
  - If you are living in the future, you have anxiety.
  - If you have peace, you are living in the moment” – Lao Tzu

Sleep and the Brain

Sleep: a recent study showed an annual loss of productivity ($136 billion) in the U.S. would be reduced by 34% if EE’s could take a nap.


Naps reduce the risk of dying from a heart attack by 37%.

(J. Archives of Internal Medicine 2/2007).

The NIH reports 60 million adults in the U.S. struggle with insomnia.
The Beauty

Sleeping beauty looked so beautiful because of all that sleep she was getting!

Science shows us that quality sleep helps repair the body. Repairs muscles, bone building, improve pancreas, repair skin, and detox the brain.

A good night's rest isn't a luxury – it's a necessity.

“Sleep deprivation comes with consequences that are scary, really scary.” – Mary Carskadon, Professor of Psychiatry, Brown Univ.

The Beast!

Nearly 40% of adults nod off during the day in the past month.

5% have done so during driving.

This doubles the chance of calling in sick.

45% of teens don’t get the 9 hours needed.

25% of teens nod off in class.

-National Sleep Foundation Survey 2/2014

Amer. Acad. Of Pediatrics just endorsed “later school starts”.

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What happens when we sleep?

The old school of thought was we are just powering down, like a computer. Going idle.

New science shows that in fact our brains start working! (Unlike being awake).

Neurons wake up & kick in and flood the brain with a hypnotic flow.

It processes data from the daytime and runs back up checks.

Benefits of sleep...

• Improve concentration
• Sharpen planning and memory.
• Burn fat and be fit!
• “Lower risk of Type 2 diabetes, depression, anxiety, Alzheimer’s, osteoporosis, and cancer.” – Brown University 9/2014
It only works if we get enough of quality, *uninterrupted* sleep. 8-9.5 hours!

No pharmaceutical is capable of these benefits of regulation. Only our bodies and brains can do that.

“Roughly 70 million Americans every night do not get a good nights rest.” – (CDC, control and prevention 9/2014)

The CDC now considers **insufficient sleep an epidemic.**

**REM (Rapid Eye Movement) Sleep**

- Stimulates the brain: regions used in learning/mental skills
- Increased production of proteins (anti-aging)
- Brain is more active during sleep than awake.
The (2\textsuperscript{nd}) Brain

- It has been \textit{proven} - the very same cells and neural network that is present in the brain in the skull, is present in the gut.
- 2\textsuperscript{nd} brain releases same neuro-transmitters as brain in skull.
- 90\% of the fibers in the primary visceral nerve (Vagus) carry information from the gut to the brain - not the other way around.

(\textit{Dr. Michael Gershon – ”The Second Brain”})
Secret: “Yes, microbes affect mood, sleep, and behavior.”

- *Univ. College Cork Ireland:* Sterilized intestines of mice - the mice no longer recognized each other!
- Additional studies: mimicked anxiety, depression, and autism.
- Estimates range from 40-90% of all children with autism suffer from GI microbial issues.
- *UCLA (Mayer)* 1st evidence “probiotics ingested, can alter brain function”

**So, when all else fails…**

- Microbiome: Digests food, makes vitamins, affects metabolism, moods and behaviors, produces anti-inflammatory chemicals, and trains the immune system to distinguish friend from foe.
- *Secret New Perspective:* Human Health is a form of ecology. *Care for the body and brain, involves care for the microbes.*
“Ouch my brain hurts!”

• Dr. Maiken Nedergaard Univ. of Rochester
• The whole body uses energy in the day. The body gets rid of garbage by liver, kidneys, and the lymph
• But the brain has no such thing. She found “glial” cells to be a “pump” of sorts. Lymphatic pump.
• In the day, they don’t do much.
• At sleep, they become active. The brain shrinks!
• More room for spinal fluid to wash out debris. Like a dishwasher!

“The what?”

• “Well if we don’t get enough sleep, the glial cells can’t get rid of garbage. It piles up. Leading to a whole host of neurodegenerative disorders.” – Dr. Nedergaard
Dr. Sigrid Veasley – leading researcher, Perelman School of Medicine, Univ. Penn.

“It rears its ugly head…”

“Brain cells get overworked like double shift employees if no good sleep, they collapse.”

During sleep the brain uses antioxidants to mop up daily work. If not, the cells die off – permanently. The brain ages.

Some can’t sleep well due to the brain keeping busy and stimulated. Won’t turn off and shut down.

Gamma-amino butyric acid (GABA) helps quiet down the firing during the day, supporting nervous system function.

Sceletium Tortuosum quiets the anxiousness at night. Helping make someone less anxious.

Magnesium is also a relaxer.
Brain Detoxification

Sleep is the time for checks and balances - Hormones, enzymes, and protein levels.

Cleaning molecules sweep out toxic debris (free radicals and spent molecules).

Natures panacea! More powerful than any drug or chemical to restore and rejuvenate.

Not just the brain, but the body too.

*Sleep is the only time the brain can catch its breath!*
Clear your head

The Glymphatic system.

An intricate system of vessels—the Glymphatic system—snakes throughout the brain, carrying fluid that rids the organ of discarded proteins and other wastes that can clump together and turn toxic if left in place. The protein fragments known as beta-amyloid peptides, which are present in Alzheimer's disease, are examples of the cellular detritus cleared through the drainage system, mostly during sleep.

No good sleep, no drainage, Brain tired?

If the brain is not rested well, gets fried, resulting in poor alertness.

The garbage needs help being removed (drained thru glymphatic) and repair of tissues.

Phosphatidylserine (phospholipid) may reduce cognitive dysfunction. Lycopene and alpha lipoic acid are powerful antioxidants.

Huperzine A (Chinese club moss) proven to be beneficial to the brain.
Natural (G)Lymphatic Drain.

- Draining the Lymph with herbals to assist the glial cells sweeping out garbage makes sense (Glymphatic).
- Helps the body with lymphatic and circulatory assistance.
- Glial cell metabolism makes debris that is deposited into microvessels. This fluid can be aided by herbal liquid drainage.
- Herbs: Cleavers (purify), Red Clover (circulation), Stillingia root (increases drainage/limits stagnation), Prickly Ash Bark (stimulates circulation and lymphatic systems).

More: Botanical Choices

- In contrast to conventional sleep Rx, *botanical medicines provide less of a knockout and more of a gentle assist to sleep with significantly fewer adverse effects*
- Of the many alternatives to conventional sleep medications available, *melatonin, hops, valerian, and passion flower*, are the most commonly used
**Hops (Humulus lupulus)**

- Best known for its use in beer as a microbiome balancer. A bitter herb.
- Hops used in traditional preparations for a broad range of conditions, including insomnia/stress.
- Calming/Relaxing nerves.
- Anxiety, irritability, tension headache, even IBS.
- Historically - antispasmodic properties that can help reduce muscle tension and promote relaxation – sleep (restless).
- Additional evidence suggests that hops may be beneficial in alleviating hot flashes and other menopausal symptoms.

**Hops**

- **HOPS** – contains a flavonoid called “XANTHOHUMOL”.
- Oregon State Univ. just found with mice that this herb works nicely to address so many health problems, especially metabolic syndrome.
- Human studies are following but so far extremely safe.
- “One of the greatest breakthroughs in medicine is understanding that practically all diseases are metabolic problems”. (J. American Dietic Assoc. 2006).
What nutrients do we require for sleep to be “just right”?

The capacity of the human brain is 1 million gigabytes, a lot of energy and oxidation.

*L-Taurine, L-Theanine, L-Glutamine (amino acids), Magnesium, Zinc, Melatonin hormone, GABA, Phosphatidylserine, 5-hydroxy tryptophan, B-vitamins, Antioxidants (i.e. alpha lipoic acid, lycopene)* are just some of the crucial regulatory sleep nutrients.

Seasonal change, another stress...

Natural light produces a stimulus of hormone release from the brain. Less light produces different levels of hormone Melatonin.

Artificial light stimulus at night keeps the brain awake.

Our evolutionary brains get tricked into off levels of this critical season changing hormone resulting in mood disorders and poor sleep.
Secrets of Super Melatonin

Immunity to the rescue! Used short term.

Melatonin only goes up, when stress "cortisol" goes down.

Night shift savior!

Aids “Th1 immune response” to kill unfriendly bacteria. FYI: If take melatonin, get bowels moving.

Aids dendritic cells to produce interleukin-2 which attacks abnormal cells.

Vicious cycle: What happens when you hear a bad news? Stress up, Melatonin down. Always check sleep cycles with all customers.

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Essential Oils

- **Lavender** – Anti-stress - Restful and soothing, for healthy sleep. High in linalool (sedative). Great for CSF/CNS.
- **Roman Chamomile** – promotes relaxation, calm, healthy sleep. Used for anxiety, depression and insomnia.
- **“Calming Blend”** – for comfort and sleep at night in your refuge!
  - Lavender, orange peel, atlas cedar wood, ylang ylang flower, blue tansy, vanilla
Brain tidbits

Yoga and meditation raise levels of glutathione.
(J. Alternative complementary medicine 2007).
Both shown to help nearly every chronic condition.

Our brains see no difference between physical pain and stress or the pain of loneliness.
(A. J. Public Health 1992)
A healers most important tool?
Positive relationships.

Be Hard to the Core!

• ALWAYS keep in mind to a Foundation of Health.
• Seasonal/Daily detoxification - Metabolic age support, water, exercise, prayer, etc..
• “Metabolic age support” is: Protein shakes, Probiotics, Omega’s, Vitamins/Minerals, Berberine, Bergamot, etc.
• What we are discussing today is “targeted protocols”.

Nature’s Institute
Questions and Answers

Thank you!