



Sleep and Stress: The Underlying Keys to Success

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- Registered Dietitian
- Quit tenured University position to follow this crazy dream :)
- CrossFitter, runner, yogi
- Mother of 2
- Passionate about health, nutrition and fitness





WHO WE ARE

Introduction to Stronger U
 Nutrition coaching company
 Change the way the world views food!
 Started by Founder and CEO Mike Doebla in April 2015
 Served over 30,000 members

Focus for Today

Success related to the effect of sleep and stress on overall health but specifically

- Body weight and body composition goals
- Performance goals



Quick Overview of some Nutrition Basics



Energy Balance

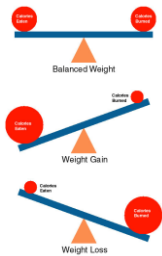


Figure 1.1 The diet priority pyramid depicts the relative importance of the diet priorities for body composition and performance outcomes.

Israetel, M., Davis, M., Case, J., & Hoffman, J. The Renaissance Diet 2.0.

6 Categories Of Nutrients

- Carbohydrates
- Fat
- Protein
- Vitamins
- Minerals
- Water



How Diets Work for Weight Loss

Diet	How It Works	Why It Works
Macro Counting/IIFYM	Track and eat a specific amount of each macro (carbs, fat, protein)	Creates a calorie deficit
Keto Diet	Eat almost 0 carbs, high fat and moderate protein	Creates a calorie deficit
Intermittent Fasting	Eat for only a certain number of hours per day	Creates a calorie deficit
Paleo Diet	Eat no processed food or dairy	Creates a calorie deficit
Low Carb Diet/Atkins	Eat high protein, moderate fat, low carb	Creates a calorie deficit
Weight Watchers	Eat a certain number of "points" that represent an amount of food	Creates a calorie deficit



The Role of Sleep



Sleep - Key Takeaways

- Not getting enough sleep
 - Negatively impacts hunger and appetite regulation which can lead to increased calorie intake the next day
 - Negatively impacts glucose control and insulin sensitivity
 - Reduced the use of fat for fuel
 - Increases lean body mass loss and decrease fat mass loss during weight loss
- Very few dietary factors impact sleep in any significant way
 - Alcohol and caffeine are the exceptions
 - Improving sleep hygiene habits are more important to improving sleep then making dietary changes



Why Is Sleep Important?

- While you are sleeping, you are unconscious BUT your brain and body functions are still active
- Sleep is a complex 5-stage process
 - 4 stages of Non-REM
 - REM
 - Each required for different functions
 - Feel rested and energetic
 - Learn info, form memories
 - Release hormones - growth and repair of tissues
 - Improved immune system





Questions to ask yourself to see if you are getting enough good quality sleep

- After waking up in the morning, could you fall back asleep at 10 or 11am?
 - If yes, you are likely not getting sufficient sleep quantity or quality.
- Can you function optimally without caffeine before noon?
 - If no, you are likely self-medicating your state of chronic sleep deprivation.



What Happens If You Don't Get Enough Sleep?

- Makes you feel tired
- Cognitive performance
 - Ability to think clearly, form memories
- Mood
 - Irritability, depression, anxiety
- Physical health
 - Increased risk for
 - High blood pressure, heart disease, stroke, kidney disease, type 2 diabetes, obesity
 - Decreased
 - Growth, ability to build muscle mass
 - Fight infections



Relationship Between Sleep and Obesity

- Sleep deprivation (less than 7 hours of sleep), related to
 - Increased desire for food that can encourage you to eat more
 - Changes in hormones that make you feel more hungry
 - Appears to affect women more than men
 - Increased fatigue which makes you want to exercise less
 - More time awake which means more time to eat
- ALL of which can encourage eating too many/ burning too few calories which can lead to weight gain
- NOTE - Obesity increases risk for sleep disorders

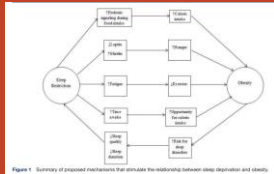
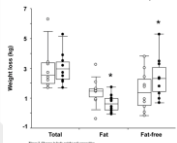


Figure 1. Summary of proposed mechanisms that mediate the relationship between sleep deprivation and obesity.

Source: <https://doi.org/10.1016/j.jmbs.2019.102422>

Sleep and Body Composition

- Recent study examined the effect of sleep on weight loss
- 2 groups - 5.5 hours of sleep versus 8.5 hours of sleep
- Same calorie intake, same exercise
 - Same amount of weight loss
- However, in the 5.5 hour group
 - LESS fat and MORE muscle loss when slept 5.5 hours
 - More hungry
 - Used more carbs than fat for energy
- Sleep may be really important in maintaining muscle when losing weight!



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The Effect of Food Intake on Sleep

- Their is very limited, if any impact on the types of foods consumed or macronutrient ratios (how much carbohydrate, protein or fat you eat) on sleep
- Long-term energy restriction may impact sleep slightly
- Two "dietary" (they are actually drugs not nutrients) components that may impact sleep are
 - Caffeine
 - Drive to sleep comes from the buildup of a molecule called adenosine
 - Caffeine is an adenosine antagonist
 - Half life is 5-6 hours; no caffeine 8-10 hours before bed
 - No caffeine after noon
 - Alcohol
 - Even one glass reduces time in deep, REM sleep
 - Less restorative sleep
 - Is a sedative but impacts quality of sleep

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12 Tips For Healthy Sleep

Tip 1

Stick to a sleep schedule

Tip 2

Exercise at least 30 minutes most days but not within 2-3 hours of bedtime

Tip 3

Avoid caffeine and nicotine. No caffeine at least 8-10 hours before bed

Tip 4

Avoid alcoholic drinks before bed. Reduces deep REM sleep



<https://medlineplus.gov/healthysleep.html>

12 Tips For Healthy Sleep

Tip 5

Avoid large meals and beverages late at night

Tip 6

Avoid medications that delay or disrupt sleep

Tip 7

Don't take naps after 3pm

Tip 8

Relax before bed



<https://medlineplus.gov/healthysleep.html>

12 Tips For Healthy Sleep

Tip 9

Take a hot bath before bed

Tip 10

Dark, cool, gadget-free bedroom

Tip 11

Get out in natural sunlight for at least 30 minutes most days.

Tip 12

Don't lie in bed awake. If you lay still for more than 20 minutes, get up and do a relaxing activity until you feel sleepy.



<https://medlineplus.gov/healthysleep.html>

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The Role of Stress



Stress - Key Takeaways


- Chronic stress can impact weight
 - Changes in appetite
 - Changes in food cravings
 - Coping mechanisms that lead to increased energy intake and decreased energy output
- High cortisol levels actually breakdown both muscle and fat
 - Impacts recovery from exercise and performance improvements
 - Unhealthy coping mechanisms lead to fat gain
- Stress can impact sleep
 - Impact recovery, change appetite, affect capacity to adhere to your program



What is Stress?


Stress is a "generalized, nonspecific response of the body to any factor that overwhelms, or threatens to overwhelm, the body's compensatory ability to maintain homeostasis"

- Automatic response as a way to protect from threats
- In response to danger, body kicks into high gear
 - Flooding the body with hormones
 - Elevate heart rate
 - Increase blood pressure
 - Boost energy
 - High alert to deal with the problem



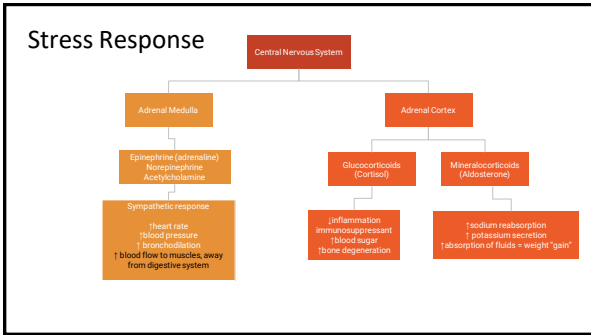
Stress Affects Almost All Of Us

- 75% of American report experience symptoms of stress in previous month
 - Anxiety, depression/sadness, fatigue, irritability
- Main causes of stress
 - Money, work, the economy, family responsibilities, personal health concerns



Source - Stress in America - American Psychological Association

The American Institute of Stress <https://www.stress.org/how-stress-affects-your-body>



Appetite Responses to Acute and Chronic Stress

- In response to acute stress
 - Epinephrine released that temporarily reduces stress to focus on the stressor
 - → rebound, flood of relief and desire to eat
- In response to chronic stress
 - Body switches to producing cortisol instead
 - Increases motivation to eat
 - Reduces inhibitory control
 - Activates brain's reward system → more cravings and positive feelings when eating highly palatable foods



Stress-Eating

- In response to chronic stress, con't
 - 33% of American report eating too much and/or unhealthy food in response to stress
 - Can become a habit
 - Often occurs at the end of the day when exhausted and will-power is depleted
- Recommendations
 - Home food environment
 - Alternative coping options
 - Come up with your go-to list
 - Set a timer and wait it out



Stress and the Immune System

- Stress stimulates the immune system
 - Can be a plus for immediate situations
 - Help you avoid infections and heal wounds
- But over time, stress hormones will weaken your immune system and reduce your body's response to foreign invaders
 - Chronic stress = more susceptible to viral illnesses like the flu and the common cold, as well as other infections
 - Stress can also increase the time it takes you to recover from an illness or injury



5 Steps to Stay Healthy During Times of Stress

- The American Institute of Stress recommends
 - Focus on gratitude
 - Turn off the news and social media
 - Schedule time to worry
 - Practice the pause
 - Focus on what you can control



Source: American Institute of Stress <https://www.aistress.org/5-steps-to-stay-healthy-during-times-of-stress>



Stress Management



American Psychological Association



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Tying It All Together




Keys to Success


- Sleeping & stress reduction
- Setting realistic goals for you
 - May look different right now
- Consistency over perfection
- Planning/Structure
- Tracking your progress
 - Scale, measurement, mirror
 - Other non-scale victories
- Accountability
 - Food and movement



Envision Success


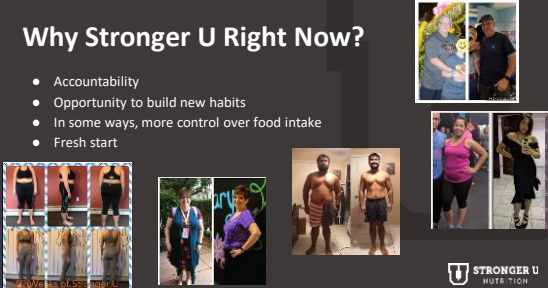


- One of the most important things you can do is to envision your success
 - What do you want life to look like in 3 months, 6 months, 1 year, 5 years, etc.
 - Think about the life that person lives and how that person feels.
- You need the right attitude and effort to get there
- Stay open to learning and developing new habits and approaches to your lifestyle



Why Stronger U Right Now?

- Accountability
- Opportunity to build new habits
- In some ways, more control over food intake
- Fresh start



Thank You!

Looking for more information?

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<https://strongeru.com/>

