Strategies for Success: The Critical Triad of Eat, Sleep, and Exercise.

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Presentation outline

Part 1: Nutrition
Part 2: Exercise
Part 3: Sleep
NUTRITION
Is eating a healthy diet a challenge for college students?

Yes.

• 738 college students aged 18 to 27 years to assess overweight, obesity, dietary habits, and physical activity.
• 69% of the participants reported < 5 servings of fruits and vegetables per day.
• 67% reported < 20 g of fiber per day.
• Participants reported physical activity on fewer than 3 d/wk.

Journal of American College Health, 2010
Eating

Exercise

Sleep

My Plate Planner
A Healthy Meal Tastes Great

The Plate Method is a simple way to plan meals for you and your family. You don’t have to count anything or read long lists of foods. All you need is a 9-inch plate.

1/4 protein. 1/4 starch. 1/2 vegetables.

9-Inch plate
Let’s Plan Your Meal

**Breakfast**

- **Starch**: Whole grain has more fiber and more nutrients. Add a small piece of fruit or leave empty.
- **Protein**: Low-fat proteins are better for your heart and waistline.

**Note:** Only use 1/2 of your plate — 1/4 protein and 1/4 starch
Use your hands to measure portions.

<table>
<thead>
<tr>
<th>Hand Symbol</th>
<th>Equivalent</th>
<th>Foods</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fist</td>
<td>1 cup</td>
<td>Rice, pasta, fruit, veggies</td>
<td>200, 75, 40</td>
</tr>
<tr>
<td>Palm</td>
<td>3 ounces</td>
<td>Meat, fish, poultry</td>
<td>160, 160, 160</td>
</tr>
<tr>
<td>Handful</td>
<td>1 ounce</td>
<td>Nuts, raisins</td>
<td>170, 85</td>
</tr>
<tr>
<td>2 Handfuls</td>
<td>1 ounce</td>
<td>Chips, popcorn, pretzels</td>
<td>150, 120, 100</td>
</tr>
<tr>
<td>Thumb</td>
<td>1 ounce</td>
<td>Peanut butter, hard cheese</td>
<td>170, 100</td>
</tr>
<tr>
<td>Thumb tip</td>
<td>1 teaspoon</td>
<td>Cooking oil, mayonnaise, butter, sugar</td>
<td>40, 35, 15</td>
</tr>
</tbody>
</table>
The hunger scale.

- Hunger represented on the left
- Fullness represented on the right
- Most people bounce between the red zone

1. Starving and feeling weak/dizzy.
2. Very hungry, irritable, low energy, large amounts of stomach growling.
3. Pretty hungry, stomach is beginning to growl.
4. Beginning to feel hungry.
5. Satisfied, neither hungry nor full.
6. Slightly full, pleasantly full.
7. Slightly uncomfortable.
10. So full you feel sick.
The Hunger Scale

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Stop eating:

Start eating:
10 Mindful Eating Tips

1. Relax and set the food mood
2. Avoid distractions
3. Leave your desk. Sit down.
4. Box it up
5. Don’t eat from the bag
6. Time your meals
7. Use smaller plates
8. Don’t skip meals
9. Respect your fullness
10. Make sure to meal plan
Mindful eating exercise.

- Holding
- Seeing
- Touching
- Smelling
- Placing
- Tasting
- Swallowing
- Following

Studies suggest that mindfulness increases the more you practice it.
“Don’t let perfect get in the way of good.”

Gretchen Rubin, Author
Exercise
## Health Benefits.

### Strong Evidence
- Lower risk of early death
- Lower risk of coronary heart disease
- Lower risk of stroke
- Lower risk of high blood pressure
- Lower risk of adverse blood lipid profile
- Lower risk of type 2 diabetes
- Lower risk of metabolic syndrome
- Lower risk of colon cancer
- Lower risk of breast cancer
- Prevention of weight gain
- Weight loss, particularly when combined with reduced calorie intake
- Improved cardiorespiratory and muscular fitness
- Prevention of falls
- Reduced depression
- Better cognitive function (for older adults)

### Moderate to Strong Evidence
- Better functional health (for older adults)
- Reduced abdominal obesity
- Lower risk of hip fracture
- Lower risk of lung cancer
- Lower risk of endometrial cancer
- Weight maintenance after weight loss
- Increased bone density
- Improved sleep quality
The Guidelines.

150 minutes of moderate intensity aerobic activity
Examples: walking (4 miles/hr), running, jogging, swimming, bike riding, dancing

2 days of full body strength training
Examples: Circuit training, yoga, weight training, resistance bands, Pilates, body pump, body resistance

2008 Physical Activity Guidelines for Americans
“Why should I spend that much time exercising?”

(I hate exercise. And I have work to do!)

Multiple studies support that aerobic exercise enhances cognitive function:
- initial hypothesis suggested increased cerebral oxygenation
- second possible mechanism has centered on exercise-induced increases in the Brain Derived Neurotrophic Factor (BDNF) in the hippocampus which is associated with improved performance in memory recall and neurogenesis

Physiol Behav.
2011 Oct 24; 104(5):934-41
Studies of mice compare the brain cells of active mice able to run in their cages and those that were kept inactive. Active mice had more mature larger brain cells with increased connections within the hippocampus (published in Neuro Image and Scientific Reports in 2016 and 2017) indicating that the exercise impacted neurogenesis.

Many studies are now focusing on the effect of exercise on neurogenesis – the birth of neurons.
Physical activity can improve academic performance.

After 20 minutes of sitting quietly

After 20 minutes of walking
Fewer studies in young adults ….

….the population considered at peak cognitive function

- Participation in team sports was associated with higher GPA’s (N=4746 boys and girls)
  J Sch Health. 2010 Jan;80(1):31-7

- Similar findings in large cohort of French college students in 2010 study
  Science and Sports. 2009;24:31–5

- Weightlifting and video gaming were negatively related to academic performance
I’ll exercise when I don’t have so much to do

Sedentary time was independently associated with a greater risk for all-cause mortality, cardiovascular disease incidence or mortality, cancer incidence or mortality (breast, colon, colorectal, endometrial, and epithelial ovarian), and type 2 diabetes in adults.


The greater total sedentary time, both total volume of sedentary time and accrual in prolonged, uninterrupted bouts are associated with all-cause mortality, suggesting that physical activity guidelines should target reducing and interrupting sedentary time to reduce risk for death.


“Every single hour of television watched after the age of 25 may reduce the viewer’s life expectancy by 21.8 minutes.”
Jonathan Meyers, a health research scientist at the Palo Alto Veterans Affairs Health System in California noted in Scientific American that research showed that sedentary folks who embarked on three- to six-month exercise programs, on average, experienced a 30 percent dip in their C-reactive protein levels (an inflammatory marker) — about the same drop as someone given a statin (a cholesterol and inflammation-lowering drug).
“I can never do 150 minutes a week…”

10 minutes of daily physical activity increased life spans in adults by almost two years, even if the adults remained significantly overweight.

Researchers have estimated that a 30-minute increase in moderate physical activity achieved through everyday activities (climbing stairs, cleaning house) could reduce the risk of cardiovascular disease by 15 percent.
EXERCISE HURTS

Fig. 1

Fig. 2

Fig. 3

Fig. 4
ACT (Acceptance and Commitment Therapy) teaches mindfulness which means that it aims to make people more aware of their thoughts and feelings in the current moment. People learn how to accept uncomfortable physical sensations and metaphorically "make room" for these feelings in their bodies, according to a 2015 study of ACT in Australia. It helps when such thoughts as “exercise is intolerable” get in the way.
7 minute workout.

(Ps. there’s an app for that…)
12 Minute Yoga for Health

1) Vrikshasana (tree pose)
2) Trikonasana (triangle pose)
3) Virabhadrasana II (warrior II pose)
4) Parsvakonasana (side-angle pose)
5) Parivrtta trikonasana (twisted triangle pose)
6) Salabhasana (locust pose)
7) Setu bandhasana (bridge pose)
8) Supta padangusthasana I (supine hand-to-foot I pose)
9) Supta padangusthasana II (supine hand-to-foot II pose)

10) Marichyasana II (straight-legged twist)
11) Matsyendrasana (bent-knee twist)
12) Savasana (corpse or deep-relaxation pose)
Enough talking …..

Let’s do some quick and easy exercise
Sleep
How Much Sleep Do I Need?

- Varies significantly among individuals and across the lifespan.
- Most adults report sleeping seven to nine hours per night.
- Some adults need less sleep without need for catch up.
- Others may need up to 10 hours night to feel refreshed.
- Vulnerability or resistance to sleep deprivation have been shown to have trait-like qualities, suggesting a genetic predisposition.
Sleep duration recommendations by age from the National Sleep Foundation*  

These recommendations are very similar, but not identical to those from the American Academy of Sleep Medicine (AASM).[1,2]

Trends in Sleep Behavior

A State of Decline….

**in Quantity**

- In 1978, 24% of college students had sleep complaints
- In 2000 that jumped to 71% students had sleep problems
- Reported averages of sleep/night were 7-7.5 in the 1980’s
- In 2002 reported sleep averages dropped to 6-6.5 hours/night

**in Quality**

- In a 2001 study published in the American Journal of College Health it was found that only 11% of students demonstrated good quality sleep
- The most prevalent sleep difficulties were:
  - Trouble falling asleep greater than 30 minutes
  - Waking too early
  - Morning tiredness
Lose Sleep,
Lose Your Health and Mind
Prevalence of health risk factors by sleep duration

Many risk factors are more common among adults who sleep <7 hours compared to those who sleep ≥7 hours.

An asterisk (*) by a risk factor on this chart indicates that the prevalence of that risk factor is significantly higher for adults who reported short sleep compared with adults who reported sufficient sleep.

Age-adjusted to the 2000 U.S. standard population.

* Underage drinker: any alcohol use among those aged 18–20 yr. Binge drinker: ≥4 drinks for women, ≥5 drinks for men during a single occasion. Heavy drinker: ≥8 drinks for women, ≥15 drinks for men per week.

Data source: Behavioral Risk Factor Surveillance Survey (BRFSS) for 2014. As part of the phone survey, respondents were asked, “On average, how many hours of sleep do you get in a 24-hour period?” For information about BRFSS methodology, go to http://www.cdc.gov/BRFSS.

www.cdc.gov/sleep
Research on sleep, naps, meditation, and nature walks reveals how mental breaks increase productivity, replenish attention, solidify memories and encourage creativity.

Idleness is not just a vacation, an indulgence or a vice; it is as indispensable to the brain as vitamin D is to the body, and deprived of it we suffer a mental affliction as disfiguring as rickets.

The space and quiet that idleness provides is a necessary condition for standing back from life and seeing it whole, for making unexpected connections and waiting for the lightning strikes of inspiration—it is, paradoxically, necessary to getting any work done.
Sleep Hygiene (Good sleep habits)

Some habits that can improve your sleep health:

- **Be consistent.** Go to bed at the same time each night and get up at the same time each morning, including on the weekends.

- **Make sure your bedroom is quiet,** dark, relaxing, and at a comfortable temperature.

- **Remove electronic devices**, such as TVs, computers, and smart phones, from the bedroom.

- **Avoid large meals,** caffeine, and alcohol before bedtime.

- **Get some exercise.** Being physically active during the day can help you fall asleep more easily at night.

- **Unwind before going to sleep.** Take a warm bath, read a book, drink some caffeine-free tea like chamomile.
“When you give more to yourself, you can ask more of yourself.”

Gretchen Rubin, Author
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Studenthealth.ucsf.edu/newsletter

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