Stress, Sleep and the Weight Connection
Topics:

- What is stress?
- Stress Responses
- The Stress and Weight Connection
- Effectively Managing Stress
- Sleep and Weight Connection
What is stress?

- Stress is...
  - A normal part of daily life
  - A physical and emotional response
  - Personal
  - Unavoidable
What is stress?

- **Positive Influence**
  - Directed towards personal growth
  - Action, Change

- **Negative Influence**
  - Frustration, Anger, Tension
  - Depression

- **Physical Response**
  - Several hormones prepare your body to respond to stress.
Fight or Flight Response

- saliva flow decreases
- eyes pupils dilate
- skin blood vessels constrict; chills & sweating
- heart beats faster & harder
- stomach output of digestive enzymes decreases
- muscles become more tense; trembling can occur
- lungs quick, deep breathing occurs
- bowel food movement slows down
- blood vessels blood pressure increases as major vessels dilate
Chronic Stress

Releases free fatty acids

Releases sugar into the blood

Increased VLDLs in the Blood

Fat around the waist

(May lead to) Insulin Resistance

Insulin
Complications of Stress

- Example: Pima Indians
- High incidence of diabetes and android body types
- Maladaptive Stress Response?
- Cortisol’s function
- Obesity: cause for a paradigm shift.
Example: Diabetes

- Common Symptoms
- Nutrition Plan for Type 2 Diabetes
- Success rate of carb and calorie restrictive diets?
- Consequences of diets?
- Stress response invoked by starvation?
- Exercise
Employees with chronic work stress have more than double the odds of the (metabolic) syndrome than those without work stress, after other risk factors are taken into account. British Medical Journal, 2005

**Effects of Stress**

- Increased epinephrine or adrenaline (body is fatigued but mind can’t shut down)
- Increased utilization of sugar for energy which can increase cravings for high-carbohydrate foods
- Increased insulin resistance which prevents body from using carbohydrates efficiently
- Decreased thyroid hormone conversion which can lower metabolic rate
Stress: Physical Symptoms

- Breathing quickens
- Dry mouth
- Perspiration
- Upset stomach
- Headache
- Backache
- Impotence/frigidity
- Chest pain
- Rash
- Frequent Urination
- Diarrhea
- Fatigue
- Cold feet/clammy hands
- Butterflies in stomach
- Trembling
- Constipation

- Heart beats faster
- Blood pressure rises
- Insomnia
- Ulcers
- High blood pressure
- Heart disease
- Stroke
- Anxiety Depression
- Heighten irritability
- Decrease one’s ability to handle even simple tasks
- Lump in throat
- Joint syndrome
Stress: Emotional Symptoms

- Depression
- Helplessness
- Hopelessness
- Overwhelmed
- Joylessness
- Anxiety
- Tension
- Mental block
- Sadness

- Fear
- Feeling “out of control”
- Disjointed thoughts
- Conflict
- Neuroses
- Boredom
- Diminished sense of “quality of life”
Stress: Behavioral Symptoms

- Temper
- Isolation
- Crying
- Insomnia
- Use of mood modifiers
- Decreased interest in sex
- Procrastination
- Forgetfulness
- Preoccupation
- Compulsive acts
- Easily startled
- Stuttering
- Grinding teeth
- Clenching jaw
- Verbal attacks
- Sleep as an escape
- Change in appetite
- Increased smoking
- Accident proneness
- Migraine headache
- Loss of sense of humor
- Diminished work performance.
Stress and sleep are intertwined. One can affect the other.

- Stress often affects how a person sleeps.
- A person may be more prone to high levels of stress when they have not had adequate sleep.
Sleep problems likely contribute to weight gain. To prevent major weight gain and obesity, sleep problems need to be taken into account.

*International Journal of Obesity, 2010*

“One night of reduced sleep subsequently increased food intake [by 22%]. These experimental results, if confirmed by long-term energy balance measurements, suggest that sleep restriction could be a factor that promotes obesity.”

*American Journal of Clinical Nutrition, 2010*
Research has shown that sleep deprivation can affect your hormone levels.

In a sleep deprived state your leptin levels decrease while your ghrelin increase.

- Leptin $\rightarrow$ signals brain to stop eating
- Ghrelin $\rightarrow$ signals brain to continue eating
How do you manage stress?
How can we manage stress?

- Physical Exercise
- Share your stress
  > Support systems
- Be realistic
  > Set priorities, know your limitations, plan accordingly
- Take care of yourself
  > Good diet, regular exercise, avoid stimulants
- Learn to relax
  > Hobbies, relaxation techniques
- “Get away” from your stress
  > Physically and mentally
- Learn to diffuse a stressful situation
- Learn to accept what you can’t change
- Channel your energy properly: meditation can be helpful
Effectively Managing Stress

- Practice positive self-talk
  - Be open to humor
  - Avoid Irrational Thinking
    - Filtering
    - Personalizing
    - Catastrophizing
    - Polarizing
- Exercise
- Eat Healthfully
- Practice Relaxation Techniques
  - Autogenic relaxation
  - Meditation

Effectively Managing Stress
• Learn to say “no”  
  ◦ Don’t over commit
• Ask for help
• Control clutter
• Schedule time for yourself
• Don’t feel guilty
• Plan menus a week ahead, use part of your weekend to cook and freeze meals
• Delegate or pay someone to do your yard work, house work, taxes.

Take Time for yourself
- Organize your work space
- Use commuting time to listen to books on tape or comedy.
- Go for a brisk walk during your lunch hour
- Listen to music that relaxes you or helps you focus
- Don’t skip meals. Keep healthy snacks in your work area
- Deal with unpleasant tasks early in the day
- Do one thing at a time
- Group small jobs together
• Surround yourself with positive, supportive people you can depend on to give helpful advice and feedback.

• You have a choice
  ◦ Take care of yourself
  ◦ Evaluate what causes you stress
  ◦ Determine what you can change
  ◦ Lean healthy ways to cope with stress to feel a sense of control
Questions & Comments?