What is Stress?

**Stress** a state of mental or emotional strain or tension resulting from adverse or very demanding circumstances.
What is Stress?

- Stress is a normal part of life
- At times, it serves a useful purpose
  - Motivate us to excel in something
  - Run the last mile of a marathon
- At times it can seriously interfere with our job, family life and health
- 50% of Americans say they fight with friends and loved ones because of stress
- 70% say they experience real physical and emotional symptoms from stress.

What is Stress?

- Everyone has different stress triggers
- Work stress tops the list according to surveys
- 40% of US workers admit to experiencing office stress
- One-quarter say work is the biggest source of stress in their lives.
What is Stress?

Causes of work stress include:

- Being unhappy in your job
- Having a heavy workload or too much responsibility
- Working long hours
- Having poor management, unclear expectations of your work, or no say in the decision-making process
- Working under dangerous conditions
- Being insecure about not being successful
- Having to give speeches in front of colleagues or others

What is Stress?

Life stresses can also have a big impact:

- The death of a loved one
- Divorce
- Loss of a job
- Increase in financial obligations
- Emotional problems (depression, anxiety, anger, guilt, low self-esteem)
- Taking care of an elderly or sick family member
- Traumatic event, such as a natural disaster, theft, rape, or violence against you or a loved one
- Chronic illness or injury
What is Stress?

Sometimes the stress comes from inside, rather than outside.

– You can stress yourself out just by worrying about things.

All of these factors can lead to stress:

• Fear and uncertainty
• Attitudes and perceptions
• Unrealistic expectations
• Change.

What is Stress?

• Your stress level will differ based on your personality and how you respond to situations

• Some people let everything roll off their back. To them, work stresses and life stresses are just minor bumps in the road

• Others literally worry themselves sick.
What is your Stress level?

- Numerous stress surveys online
  - to determine your stress level and
  - how stress affects different parts of your life

- Stress Indicators Questionnaire (good one)
  - Produced by the “The Counseling Team International in San Bernardino CA.

- Physical Indicators
- Sleep indicators
- Behavioral Indicators
- Emotional Indicators
- Personal Habits.

Chemistry of Stress....Success

- Improve Well-Being
- Improve Performance
What is Well Being?

Perspectives on Wellness:

- **Physical** – fitness, nutrition, medical self-care
- **Emotional** – stress management, depression
- **Social** – community, family, friends, co-workers
- **Intellectual** – educational, career development
- **Spiritual** – love, hope, charity
- **Occupational** – safe, nurturing worksite environment

Source: American Journal of Health Promotion & National Wellness Institute
What is Performance?

- Verbal & physical clumsiness
- Disconnection, anxiety, panic
- Overwhelmed.

- Superhuman, think clearly & faster than those around you
- Multitask, lots of energy.

- Flat, uninspired, don’t care
- Need adrenaline to increase arousal.

The Zone!

Arousal

Performance vs. Stress

- High Performance
  - Optimal
  - Alertness
  - Sleep
  - Anxiety
  - Disorganization

- Low Performance
  - High Stress
  - Medium Stress

- Low Stress
  - High Stress
### Chemistry of Success

**ERROR PRECURSORS**

<table>
<thead>
<tr>
<th>TASK DEMANDS</th>
<th>INDIVIDUAL CAPABILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time pressure (on a hurry!)</td>
<td>Unfamiliarity with task / first time</td>
</tr>
<tr>
<td>High workload (memory requirements)</td>
<td>Lack of knowledge (inertial model)</td>
</tr>
<tr>
<td>Simultaneous, multiple tasks</td>
<td>New technique not used before</td>
</tr>
<tr>
<td>Repetitive actions, monotonous</td>
<td>Imprecise communication habits</td>
</tr>
<tr>
<td>Unpredictable acts</td>
<td>Lack of proficiency / inexperience</td>
</tr>
<tr>
<td>Interpretation requirements</td>
<td>Indistinct problem-solving skills</td>
</tr>
<tr>
<td>Unclear goals, rules, and responsibilities</td>
<td>Hazardous attitude for critical task</td>
</tr>
<tr>
<td>Lack of safety standards</td>
<td>Errors / failure</td>
</tr>
</tbody>
</table>

**STRESS**

- Distractions / interruptions
- Changes / Departures from routines
- Confusing displays or controls
- Assumptions (inaccurate mental picture)
- Workarounds / OSS instruments
- Complacency / Overconfidence
- Hidden system response
- Mindset (tuned to see)
- Unexpected equipment conditions
- Inaccurate risk perception (false sense)
- Personal conflicts
- Limited short-term memory

**Figure 6.1**

Error precursors are conditions that make error more likely.

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### Chemistry of Success

- Workplace stress can spill into personal life
- Personal stress can spill into work
- Not as focused
- Not able to complete a task
- Irritable.
Chemistry of Success

- 33% of the 40.2 million workdays lost by illness and injury are from stress, anxiety, and depression.
- Stress can be a hidden trigger behind cardiovascular problems, musculoskeletal disorders, obesity, depression, and violence.


Your “Internal Chemistry” Players

- Adrenaline
- Cortisol
- Serotonin
- Melatonin
- Oxytocin
Adrenaline
“The **Acute** Stress Response”

Immediate change in heart rate and force of contraction

- in the production of blood cholesterol
- in the blood’s ability to clot
- in the depositing of plaque
- respiratory rate
- blood pressure
- mental awareness
- chance of producing cortisol
- urine production

Cortisol
“*The **Chronic** Stress Response*”

↑ Increased risk of weight gain, resulting in Heart Disease and Diabetes:
- Increases blood sugar during stress at expense of muscle protein
- Increases appetite
- Promotes truncal obesity
- Increases urine production = blood volume = hypertension

↑ Increased risk of Osteoporosis:
- Inhibits bone formation and bone resorption

↑ Increased risk of Illness:
- susceptibility to infection and disease

↓ serotonin
- Mood altering - Makes us feel anxious, short-tempered and shaky
**Serotonin**

- The “rush” vs. the “bliss”
- Low levels of serotonin are linked to anxiety and depression
- Regulates appetite & mood
- Cortisol suppresses serotonin
- During the night our brain breaks down serotonin to create melatonin

**Melatonin**

- Melatonin’s production is triggered by darkness and shuts off when light hits the eye
- Required precursor molecule to serotonin
How They Work

**Adrenaline** ➔ Improved Performance

Too much Adrenaline ➔ ↑Cortisol

↑**Cortisol** ➔ ↑Weight  ↓Health

When Cortisol ↑ Serotonin ↓

**Serotonin** ➔ Melatonin

**Melatonin** ➔ ↑Sleep

Sleep ➔ Improved Performance

So then…for Success…

1. Manage your Adrenaline to Improve Performance
2. Avoid Cortisol to maintain health, weight and relationships
3. Maximize Serotonin to improve mood, eating habits and sleep (Melatonin)
Goal 1 – Manage Adrenaline

- Plan your day & your APE events
- Try not let other people’s urgencies run your life
- Control your thoughts – stay positive
- Learn to say “no” and “let go”
- Use adrenaline triggers sparingly

*Man is distressed, not by events, but of his perception of these events*

- *Epictetus*

Adrenaline Triggers

- Caffeine – 300mg/day is our limit
- Nicotine
- Being late
- Speeding
- Exercising on an empty stomach
- Not getting enough sleep
Goal 2 – Avoid Cortisol

• Use your adrenaline sparingly
• Avoid exercise first thing in the morning on an empty stomach
• Eat regularly

Goal 3 – Maximize Serotonin

• Spend at least 30 minutes outside everyday
• Perform low intensity exercise everyday
• Eat regular and balanced meals to keep blood sugar levels as optimal as possible
• Use only small hits of simple carbohydrates when mood is low – 40g or 160 calories
Sleep

- Have a regular routine
- Try to get to bed before 10 PM
- Sleep in a dark room
- Aim for 7-9 hours per night

The Effects of Inadequate Sleep

- Increased heart disease
- Decreased immune function
- Increased appetite…overeating and obesity
- Decreased performance
- Decreased memory and capacity to learn
Nutrition for Success

Eat to avoid heart disease and diabetes:

- Regular, balanced meals comprised of smaller portions
- Get your carbohydrates from fruits & vegetables primarily
- Avoid processed & refined foods
- Use small hits of simple Carbs when mood is low (40g)
- Eat less saturated fat and get some Omega 3 FAs everyday

Exercise Prescription

1. **Cardiovascular Exercise:** 3-4x per week
   - 30 minutes
   - Higher intensity (if stressed) to burn cortisol
   - Long and slow to increase serotonin

2. **Resistance Training:** 2-3x per week
   - 2 sets of 12 reps – total body

3. **Flexibility Training:** 3-4x per week or daily
   - Emphasize chest, hamstrings and hip flexors
• How to Make Stress Your Friend

Daily Habits…how does this work everyday?

• Eat breakfast
• Plan your day – be clear on your priorities and goals
• Do some exercise every day (even just 5-10 minutes)
• Eat well (smaller, regular portions, greater nutrient density, more fruits and vegetables)
• Use adrenaline triggers when needed
• Plan for enough sleep
• Sit less…stand more…move more
• Think positively about stress
• Stress gives us access to our heart
• Take responsibility for your life
Thank You.

Tom Chism
tchism@wcf.com