

## Special Warfare and Combat Support Development Newsletter 06

### STRESS INOCULATION AND WORKOUTS

STRESS INOCULATION is the concept that experiencing stress in a controlled environment prepares you to deal with stress in any environment. Sports performance researchers in the 1970s and 1980s noted that heart rate was closely tied to changes in motor function- as heart rate increased, fine motor skills, such as writing, decrease but complex and practiced motor skills, such as throwing a football increase. (McKay, Brett and Kate).

Lt Colonel David Grossman, a Retired Army Ranger and former Professor of Psychology, took this a step further and correlated heart rate and stress to cognitive abilities and motor skills in combat. Colonel Grossman hypothesized that the autonomic (automatic) nervous system correlates heart rate to threats and automatically responds. The lower the heart rate, the lower the perceived threat and the lower the body's preparedness to act. The higher the heart rate, the higher your body's preparedness to act. He also stated that while all humans respond physiologically to stress, training could prepare people to think and act under stress. The training had to raise the heart rate to appropriate levels and then force the subject to think and act as they would in real world stress. The more often a person practices skills, the better they are at using them under stress. But Grossman also found that the more often subjects were exposed to high stress, the better they were able to deal with stress in any situation. (Grossman, David. *On Combat*. 1995.)

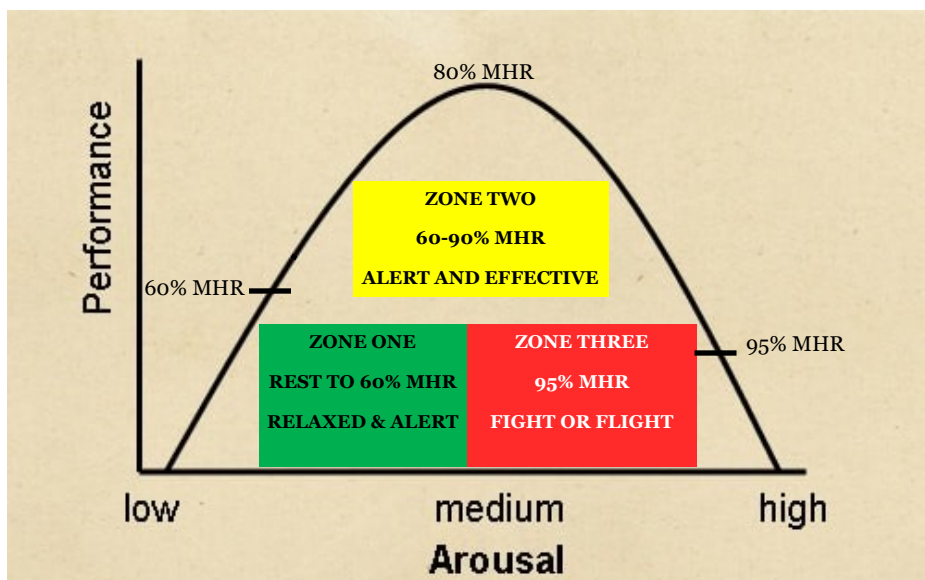
Colonel Grossman delineated performance to five conditions, which I've simplified into three performance zones.

**ZONE ONE** is a state of relaxed alertness; cognition is high, motor skills normal.  
**ZONE TWO** is associated with elevated heart rates and high performance.  
**ZONE THREE** is a state of panic associated with very high stress and heart rate.  
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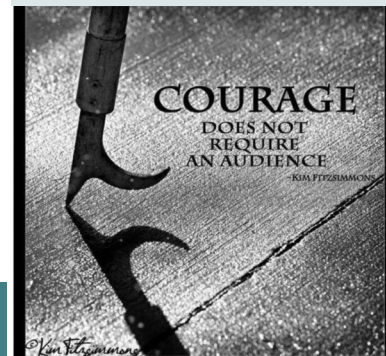


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The Inverted U Hypothesis states that cognitive and physical performance steadily increase with stress up to about 80% of Max Heart Rate. They gradually decrease until a state of panic—“Fight of Flight” sets in at about 95% Max Heart Rate. (McKay, Brett and Kate, 20 APR 2020)



McKay, Brett and Kate. *Managing Stress Arousal for Optimal Performance: A Guide to the Warrior Color Code*, [Artofmanliness.com](http://Artofmanliness.com), 15 Aug 2013, updated 20 APR 2020

NEVER QUIT

**IF YOU AREN'T  
WILLING TO  
WORK FOR IT.  
DON'T COMPLAIN  
ABOUT NOT  
HAVING IT.**

## STRESS INOCULATION WORKOUTS (CONTINUED)

Mental awareness and physical performance directly increase with heart rate until reaching a peak at about 80% max heart rate. Performance then decreases steadily until a person is overwhelmed with panic at about 95% of their maximum heart rate.

Because your autonomic nervous system is keyed into heart rate, you can stimulate much, but not all of, your body's stress responses by exercising at the appropriate heart rate.

**Working out at the standard aerobic endurance heart rate of 50-70% MHR allows you to safely experience Zone One.**

**Working out at the aerobic threshold and aerobic power heart rates of 80% to 95% MHR lets you experience Zone Two.**

**Do NOT attempt to enter Zone Three. Doing so is unsafe and unnecessary.**

Your body will not easily enter Zone Three without a great deal of adrenaline from real fear; do not try to induce this effect.

### ZONE ONE (Relaxed Alert)

- RESTING to 60% MHR
- COGNITION NORMAL
- MOTOR SKILLS NORMAL

### ZONE TWO (Optimum Performance)

- 60% to 95% MHR
- OPTIMAL PERFORMANCE ZONE
- INCREASED GROSS MOTOR SKILLS/PRACTICED TASKS, GREATER STRENGTH, HIGHTENED SENSES
- DECREASED FINE MOTOR SKILLS LOWERED PROBLEM SOLVING
- UPPER END OF HEART RATE RANGE MAY EXPERIENCE TIME DISTORTION, TUNNEL VISION, AUDITORY EXCLUSION

### ZONE THREE (Blind Panic)

- 95% + MHR
- PANIC— FIGHT OR FLIGHT/FREEZE

*“You don't rise to the occasion, you fall back on your training”*

Lt Colonel David Grossman

## WARRIOR NUTRITION

### The principles of post-workout nutrition are simple!

These principles included providing energy to replace muscle glycogen stores, helping to maximize the re-pair of muscle damage, and sufficiently replenishing any fluids and electrolytes lost during training. Simply put, follow the three R's of Recovery—*refuel, rebuild, and rehydrate*.

**Refuel**—Nutritional recovery starts by refueling with glycogen or carbohydrates. Carbohydrates provide the body and brain with the fuel needed to recover and ultimately adapt to the training session. Current data indicates that after a workout the muscle cells' ability to begin rebuilding and replenishment peaks at about 15 minutes and declines by as much as 40 percent within 60 minutes. Researchers report that immediate intake of carbohydrates results in a 300 percent increase in muscle glycogen at two hours and a 135 percent increase at four hours.

**Rebuild**—The next step is rebuilding cells by focusing on the protein and amino acids required to help maximize muscle repair. Even a simple cardio session results in muscle breakdown, so protein is an essential component for all post-exercise nutrition. In a 2010 review published in the International Journal of Sports Nutrition Exercise and Metabolism, researchers noted that the consumption of 20 grams of protein, or an equivalent of 9 grams of essential amino acids, can maximize muscle protein-synthesis rates during the first hours of post-exercise recovery. However, the amount of protein needed in the post-workout period is often overestimated. There are certain levels of protein that are needed, but more doesn't always mean more muscle or better recovery. Depending on the type and intensity of exercise, and the total calories of course need-ed for recovery, a range of 0.3 to 0.5 grams per kg of bodyweight, or a 3:1 ratio of carbohydrates to protein, is recommended.

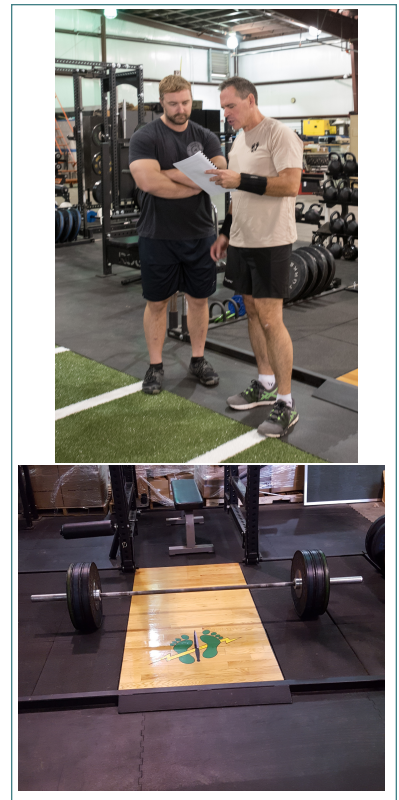
**Rehydrate**—The final step is rehydration. Adequate fluids help regulate body temperature and blood pressure, and transport energy and nutrients throughout the body. That is why it is essential to allow the body to achieve balance and maintain the process of recovery by replenishing any fluids lost during activity. Cramp-ng and muscle fatigue can often keep candidates from sticking to a workout plan. By rehydrating and replenishing sodium, you'll be able to reduce these post-workout symptoms.

*“There is one thing on which most athletes and experts seem to agree. If you want to be an elite athlete, good nutrition... is an important place to start.”*

Chuck Norris (USAF Air Policeman 1958-1962)



*HPP Fitness Area*



## Human Performance Program- Fitness

The Human Performance Program is a Special Operations Command initiative to meet the mental health, spiritual health, and physical health needs of Special Operations personnel and families.

The Human Performance Physical Fitness initiative is designed to

1. optimize performance of each Operator,
2. prevent injuries, and
3. return the injured to operational status as soon as possible.

### Strength & Conditioning Coach

1. Creates individualized corrective action plans to address physical deficiencies
2. Designs time phased individual and group fitness plans to ensure Operators are at peak fitness right before deployment
3. Provides real time analysis and corrections of athletic performance to reduce injury and increase performance

### Athletic Trainer

1. Conducts physical assessments to detect physical deficits
2. Designs rehabilitative training programs for minor injuries and physical deficits
3. Creates nutrition and fitness plans alongside the Strength & Conditioning Coach

### Physical Therapist

1. Assesses, diagnoses and treats conditions that limit mobility
2. Creates treatment plans that allow Operators to resume fitness activities
3. Teaches Operators therapeutic exercises to enable self-recovery

## FEEDBACK FROM THE FIELD

Students in the Pipeline and recent Pipeline graduate of all AFSC regularly contact us to let us know how things are in the real world.

Here are the things they want you to know:

1. **Mental toughness practiced during Development Sessions is hugely helpful**
2. **The harder you push yourself in Development, the easier the Pipeline is**
3. **A lot of people quit; common reasons are:**
  - Panic**— when reason is overcome by fear (most common during water con)
  - Looking too far ahead**— failing to break time or tasks into manageable chunks
  - Quitting by action**— failing to complete a task; quitting without saying the words “I quit!”



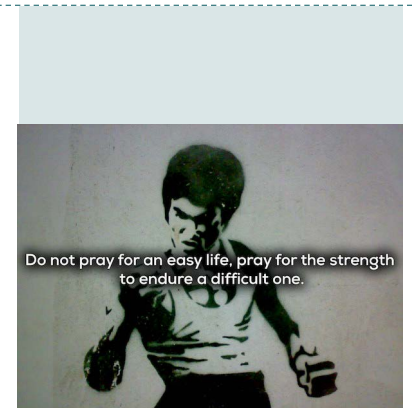
*“Everyone has the will to win; Few have the will to prepare to win”*  
Vince Lombardi, NFL Hall of Fame Coach

### Why Have a Training Plan?

Having a schedule forces us to block out chunks of our day for specific tasks, such as work, errands, or hitting the gym or pool. When we set up specific times to accomplish things, we are far more likely to get them done— especially once they become habit. READ BELOW FOR MORE BENEFITS

- **Makes us more efficient** - Following a daily routine reduces the need to make decisions each day. It reminds us exactly what tasks we need to do each day without having to contemplate, decide or think much about it. When we are finished with one task, we know what comes next without much thought.
- **Creates structure in our lives** - A daily routine provides structure and a logical sequence in our lives. It provides the framework within which we live and conduct daily activities.
- **Saves time and valuable resources** - Time is the most precious asset we own because, once lost, it cannot be replaced. Following a routine frees up time that would otherwise be spent on decision-making and preparation. Our routine has predetermined our schedule, allowing us to use that time to accomplish other things or get more rest.
- **Instills solid habits** - The secret to building good habits is repetition. An effective personal routine facilitates developing good habits by encouraging us to repeat the useful tasks over and over again and eliminate less useful tasks. Like brushing our teeth each morning, adhering to a routine allows us to foster habits that match our behavior to our goals and aspirations

- **Prioritization** - The beauty of designing a routine is that it forces us to decide what is important to us and then prioritize those tasks. We no longer make these decisions on a daily basis because we already know what we need to do and when to do it because we have planned it.
- **Reduces procrastination** - When a set of tasks and activities become routine, it reduces the chance that we will put off doing them to the last minute. It becomes ingrained into our system to complete those tasks and to complete them at the right time.
- **Builds self-confidence** - Sticking to a team builds self-confidence through achievement and fosters a sense of control and accomplishment.
- **Helps us achieve our goals** - Our goals and aspirations are rarely, if ever, achieved all at once. Successful people like CEOs and professional athletes accomplish their goals by engaging in positive behaviors over and over again. An athlete gets good at his sport because he practices daily. An artist hones his craft through repetition.



### WEEKLY WORKOUT

#### CHALLENGE

For Time:

8 Pull Ups

800m Run

50 Sit Ups

800m Run

40 Push Ups

800m Run

### About the Publishers

Thomas DeSchane retired as a Chief Master Sergeant after 28 years of service as a Combat Controller. He has been a Special Warfare Developer since 2016.

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