

# Managing Your Fight or Flight Syndrome

Chris Ivanoff

In my career as a deputy sheriff in Park County, Wyoming over the past thirteen years, I have had many opportunities to experience fight or flight syndrome in situations including felony arrests, prowler calls, no-knock search warrants, and dealing with subjects who are either intoxicated, under the influence of illegal drug usage, or suicidal. Both law enforcement officers and martial artists experience the same feelings prior to any hands-on physical confrontation, whether you're in a self-defense situation on the street or a competitive situation in the ring.

Fight or flight responses, also called *acute stress responses*, were first described by Professor Walter Cannon at Harvard University in 1927. His theory states that animals react to threats with a general discharge of the sympathetic nervous system, priming the animal for fighting or running away.<sup>1</sup>

This essay discusses the biology of the acute stress response and provides some guidance about how to prepare for and manage it. My primary focus is self-defense, but the tips are applicable to martial arts competition as well.

Fight or flight syndrome is a very uncomfortable feeling. Depending on the situation, it can last only a split second or as long as it takes to make a calculated decision and then see you through past the threat. Whether or not you have the assistance of others nearby, I can assure you it will feel like an eternity.

Everyone experiences this feeling from time to time. It doesn't only occur during a hand-to-hand combat or self-defense situations. Imagine you are walking down the sidewalk, in the dark, and you notice two men walking towards you who appear to be out of the ordinary. As the men approach, your hands become clammy, your heartbeat increases and your stomach begins to tighten up. Because you have martial arts experience, you look your potential opponents in the face. Your opponents see that you are not an easy victim and decide not to attack. As your opponents walk away you are flooded with relief. What you felt is the fight or flight syndrome.

Fight or flight syndrome can happen in commonplace situations as well. Perhaps you remember your parents scolding you when you were younger and the feeling it left in your stomach. Or imagine that your supervisor suddenly asks to see you in her office and you don't have a clue why. Waiting to find out the reason can be gut wrenching until you learn that it is only for an ordinary request, or perhaps even a promotion.

Most martial arts competitors feel various levels of fight or flight syndrome prior to entering the ring to spar. In national and international competition, where knockout techniques are considered an easy way for athletes to end the match quickly and save their energy for subsequent bouts, fight or flight syndrome is common. Even if you are not a national competitor and just a martial arts student who practices a few nights a week, sparring against other students who are much larger or more experienced can trigger the fight or flight response. Because competition is not a life or

death situation, the fight or flight feeling may not fully occur; however, even non-contact sparring can induce elevated stress levels. Nonetheless, by competing regularly, you can build the confidence you need to control your responses.

When I am instructing sparring during practice, I have observed that students of all ranks generally revert back to using their basic lower level techniques when challenged by a more aggressive or experienced sparring partner. Most likely, this occurs because their increasing stress inhibits their ability to react appropriately with more advanced techniques. When students spar against a lower belt with less experience, they tend to use more challenging techniques because they are better able to manage the situational stress and less concerned about being hit. Learning to manage your fight or flight reaction can help you use your best techniques regardless of who you are facing.

## **Neurobiology of the Stress Response**

Normally, when a person is in a serene unstimulated state, the firing of neurons in the locus coeruleus is minimal. The locus coeruleus is a nucleus in the brain stem that contributes to our body's response to stress. When we perceive danger, that information travels from the sensory cortex of the brain through the thalamus to the brain stem. The transmission of this signal increases the rate of nerve impulse activity in the locus coeruleus, and we become hyper alert. At the same time, the adrenal gland releases stress hormones called catecholamines. The abundance of these hormones flooding neuroreceptor

sites enables the body to respond quickly with spontaneous or intuitive behaviors often related to combat or escape.<sup>2</sup>

## **Managing the Stress Response**

With so many deep-seated physiological processes at work in an acute stress situation, we have to adjust our training in specific ways so that we can continue to achieve peak performance. The rest of this essay describes the following methods of combating and managing your own stress responses:

- Maintain excellent physical and mental condition
- Recognize the threat
- Accept the threat
- Recognize your symptoms
- Manage your breathing
- Create a plan

### **Maintain Excellent Physical and Mental Condition**

Whether you are a white belt or an upper rank, it is imperative that you stay in excellent physical shape at all times. If you are in excellent physical shape, your would-be attacker will observe that you are not an easy target simply by how healthy and fit you appear to be. I remember many times when Dr. Ken Min, Technical Director of the U. C. Martial Arts Program said, “A healthy body creates a healthy mind.” It is paramount to train and exercise regularly. Students with advanced belt ranking should be mindful that they have to continue training on a regular basis, especially if they have gained the status of black belt. Passing your 1<sup>st</sup> dan black belt test means demonstrating that you are

a skillful beginner—you are now considered worthy of relearning everything in a more competent manner. Staying in excellent physical shape prior to any physical confrontation can assist you because your strength, speed, and reflexes give you additional time to respond with the correct action.

Mental training is equally important. One of the best ways to prepare for a split-second hand-to-hand confrontation is to shift to using proactive “when/then” thinking.<sup>3</sup> This a term used by nationally known officer survival instructor Col. Robert Lindsey to replace traditional “if/then” thinking. He argues that “if/then” thinking does not make a threat immediate enough. It places the threat too far in the distance and makes the possibility too easy to ignore. Remember: every person is likely to become a victim at least once in his or her life. Decide right now that you will become a potential victim at some point and realize that you will have to use your skills to survive the situation. Most attacks are quick—they are over in three minutes or less (often much less). You will have to use good judgment quickly. If the circumstances require action, be physically and mentally ready to take action instinctively and without hesitation.

Here are some ways of staying mentally fit:

- ***Stay up to date on tactics and techniques.*** Limit your response techniques to only a few so that you need minimum time to respond to an attack.
- ***Practice mental imagery at least once a week.*** Think of scenarios that could happen to you and what response you would use to survive the situation. Always think of which technique you would implement if another doesn’t work on your

attacker. Don't stop striking until the threat is over!

- *Learn the physiological responses* to the fight or flight response and understand what will happen to you and how you will manage it.
- *Understand that you might have to use deadly force.* This isn't something you think of every day, even as a police officer. In fact, we try not to think about the possibility of using deadly force. Humans naturally harmonize with each other. However, if someone uses extreme force against us in a self-defense situation, we have to reach within our subconscious to resort to whatever techniques we need in order to insure our survival.
- *Understand that if the attacker presents a weapon and you cannot flee, there is a very strong possibility that you will be injured,* but you will be able to continue to fight back and conquer. Do not let that first injury derail you.
- *Strive to improve your observation and assessment skills.* Keep your head up and focus forward when you are walking down the street or even inside a building. **Don't look down!** The next time you walk down the street, watch how many people walking towards you are looking down at the ground and not paying attention to you or their surroundings. These people are too preoccupied to think of their own safety. Attackers looking for the element of surprise are more likely to prey on people who are not paying attention.
- *Trust your intuition and instincts.* Your intuition will alert you to a threat before you realize what is happening. Be open to your senses and react early to what your subconscious is telling you.

- ***Develop a powerful will to survive.*** This may sound easy; it is not. It requires you to reach deep into your soul and find the answers about why you are here on this earth. Start by thinking of all your family and friends around you and the value of those connections. In a self-defense situation, that is what you're fighting for.
- ***Stay mentally positive.*** Are you half empty or half full? You might not be stronger than your attacker, but it is the tiger in your tank that matters.

### **Recognize the Threat**

If you're lucky, you will have time to recognize the threat facing you as the attacker signals his or her aggressive intent. Although assault generally does not occur during early signals, be mindful that an aggressive person can begin an assault at any time.

The Wyoming Law Enforcement Academy uses the following list of early warning signals.<sup>4</sup>

#### ***Early Behavior Signals (Assault Is Possible)***

- Head/shoulders are back and squared to you
- Face turns red on light-skinned individuals
- Lips push forward, baring the teeth
- Salivation increases, aggressor might spit
- Breathing is quicker and deeper than normal
- Sweating increases
- Eyes have a glazed look or empty stare
- Direct uninterrupted eye contact
- Belligerent behavior—challenging, yelling, cursing, etc.
- Exaggerated movements—pacing, turning, pointing, fist threatening with arm bent and held

sideways, hands on hips

- Aggressor stands as tall as possible
- Aggressor redirects his/her activities (such as striking a wall) because he/she is too agitated frightened to assault the victim directly

Listed below are some signals indicating a physical assault is about to happen. The more signals the aggressor exhibits, the greater and more imminent the threat:

***Imminent Assault Signals***

- Complexion turns pale
- Lips tighten over the teeth
- Breathing is rapid and deep
- Stance changes to a sideways position, or aggressor shifts forward/back to establish striking distance
- Talking stops
- Hands come up, shoulders shift/drop
- Aggressor clenches fists
- Body leans forward
- Aggressor focuses on you to size you up

Additionally, bear in mind that people who are intoxicated are far more likely to become aggressive. Pay special attention when an aggressive person displays rapid mood swings, because it increases the unpredictability of their actions.

Being able to read your opponent's behavior signals enables you to prepare more effectively for either combat or escape. These signals should assist you to accept the threat, recognize your symptoms, manage your breathing, and create your plan.



## Accept the Threat

By recognizing signs of aggression, you will be able to accept that there is an imminent threat to your safety. No person relishes the fact that he or she might have to resort to hand-to-hand combat in order to survive a situation. Studies have shown repeatedly that pleading for your life in a self-defense situation rarely works. When a threat is imminent, you must act decisively upon your training and trust that you have practiced sufficiently.

## Recognize your Symptoms

Darren Laur and Bruce Siddle are leading experts in Law Enforcement acute stress syndrome. Siddle is a retired law enforcement officer and is the author of *Sharpening the Warriors Edge: the Psychology & Science of Training*. The book is based on extensive research into actual case studies. Both Laur and Siddle have written about what Siddle calls *Survival Stress Reaction* (SSR). Acute stress syndrome and SSR provide additional insight into what we experience as a fight-or-flight.

Siddle's definition of SSR as it relates to combat is "a state where a 'perceived' high threat stimulus automatically engages the parasympathetic nervous system."<sup>5</sup> The parasympathetic nervous system governs physical processes over which one has little conscious control.

When you perceive a significant threat, you will experience some general physical changes, which have more specific effects on motor control, vision, hearing, and your cognitive abilities. The next few sections describe these changes.

### ***General Physical Changes***

During a fight-or-flight situation, your body prepares you for a maximum response:

- Your pupils dilate to help you see better.
- Your heart rate increases, pumping up to five gallons per minute into your arteries and then constricting them to maximize pressure throughout the system, while your veins open up to ease the return of blood to your heart.
- Your lungs, throat, and nostrils open up, and your breathing speeds up to draw more air into your lungs to re-oxygenate the increased blood flow. The blood carries oxygen to your muscles, enabling them to work harder.
- Blood vessels in your skin constrict. Sweat glands also open, providing external cooling.
- Endorphins, the body's natural painkillers, are released.
- Blood vessels to the kidney and the digestive system constrict, effectively shutting down systems that are not essential to the conflict. A side effect is to reduce the amount of saliva in your mouth.
- In extreme stress, involuntary loss of control of the bowel or bladder could also occur.<sup>6</sup>
- Your normal, refined judgment system is also turned down while more primitive responses take over. Your body is primed for action and not deep thought.

### ***Effects on Motor Control***

A typical resting pulse rate is 40-80 beats per minute (bpm), depending on a person's overall health and fitness level. When pulse rate increases to 115

bpm, most people lose fine complex motor skills such as finger dexterity and eye/hand coordination. Your gross motor skills turn on such as your major muscle groups prepare to react to a perceived stressful event. Multitasking becomes difficult.

The higher your heart rate goes, the more negative effects it will have on motor control. Remember that when you are in combat or you have a sudden perception of deadly threat, your heart rate can go from 70 bpm to 220 bpm in less than half a second. Remember, too, that if you are suddenly challenged on the street, you will be at a disadvantage. Your opponent has already picked the territory and his or her time. Because of your stress response and increased heart rate, you should expect that you won't be able to execute your self-defense techniques as correctly as you do in class. Your stress response will interfere with your training.

At 145 bpm, most people lose overall complex motor skill coordination, becoming unable to use three or more motor skills designed to work together in unison.<sup>7</sup> During a competition match, the competitor will find it more difficult to score using combinations of kicking or punching techniques versus a single or multi stepping motion utilizing a single kick or punch.

#### ▪ *Effects on Vision*

For most of us, our visual system is the primary sensory organ. Knowing how SSR affects the visual system is the first step in learning how to overcome the negative psychological effects that can accompany these symptoms.

At approximately 175 bpm, a person experiences an

eye/lid lift. Pupils dilate and flatten. As this reaction takes place, a person experiences narrowing of the field of view (commonly known as tunnel vision). In addition, visual tracking becomes difficult. This is important when it comes to facing multiple attackers because the brain directs the visual system to focus on the primary threat. Studies have shown that a person in SSR experiences a significant decrease in his or her visual field. That is why it is so important to train to scan for multiple attackers: unless you are aware of this problem, you will likely be blind-sided by one of the secondary attackers.

At a heart rate above 175 bpm, it becomes difficult to focus on nearby objects. One of the first things to deteriorate under SSR is depth perception. A fighter becomes farsighted rather than nearsighted. This is why you sometimes lose sight of your targets when you are in an intense sparring bout.

The best example of these visual changes in my own experience happened to me on a SWAT mission a few years back. We had to enter a residence where an armed and very dangerous suspect had barricaded himself with his girlfriend as a hostage. My team and I approached from the rear of the house, where we assembled in a long, narrow mudroom that led to the door. I opened the door and saw the suspect running towards me. I threw a flashbang device into the room to distract and disrupt his charge. The suspect fell to the floor and a loaded 45-caliber handgun slid from underneath his waistband. One of my team members and I landed on top of the suspect and, after securing the loaded handgun, we placed the man into handcuffs. It wasn't until after the incident that an

officer who was standing outside the residence assisting with perimeter duties asked all of the team members if we had either observed or felt a very large dog that had ran past us through the mud room, exiting the residence just after the flashbang activated. All of the team members laughed. Not one of us had seen or felt the large dog as it past through the mudroom. Knowing that our lives were on the line, we had lost all our peripheral vision during the entry.

▪ ***Effects on Hearing***

At approximately 145 bpm, the part of the brain that hears shuts down during SSR. This is why it is common for some martial arts students who are sparring during class time to not hear the commands from the instructor to stop.

▪ ***Effects on the Brain***

At approximately 175 bpm, it is not uncommon for a person to have difficulty remembering what took place or what they did during a confrontation. This recall problem is known as “Critical Stress Amnesia.” After a critical incident, a person typically only recalls approximately 30% of what happened within the first 24 hours, 50% after 48 hours, and 75-95% in 72-100 hours.

At 185-220 bpm, most people go into a state of hypervigilance, sometimes known as “deer in the headlights” mode. It is not uncommon for a person to continue doing things that are not effective or even to show irrational behavior. This is also the state in which people find themselves in when they say that they can’t move, yell, or scream. Siddle found out

through his research that the higher the heart rate, the more SSR effects one's perception of threat.<sup>8</sup>

Ask a student what they remember after they have taken a promotional examination and chances are they won't remember much. This effect can be related to critical stress amnesia or hypervigilance.

### **Manage Your Breathing**

When you are presented with an imminent threat, managing your breath cycles can help stave off the negative effects of SSR. Try this exercise: breathe in through your nose for a three count, hold for a two count, and then breathe out through your mouth for a three count. Studies have shown that if you do this for three cycles, your heart rate can decrease up to 30% over the course of the exercise. To put that into perspective, if your heart rate is between 175 and 220 bpm, you can quickly decrease your heart rate into the target range of 115-145 bpm just by managing your breathing.<sup>9</sup>

Remember: we breathe non-stop and yet rarely take the opportunity to consciously change the rhythm of this activity. Generally, while you are training, you are concentrating so hard on accomplishing the technique that you simply forget to breathe. Therefore, the very best time to practice controlling your breathing is while you are training. For instance, while training, concentrate on breathing nothing but full breaths throughout the class. It will be a little more difficult than you think. How many times have you caught yourself out of breath during a workout and only reminded yourself to breathe after the fact? How can you expect to calm yourself down

in that split second if you're not prepared? Recognize that breath control is an important skill to acquire as part of your martial arts training.

### **Create a Plan**

It is for you to decide whether you want to fight or flee. Fighting an attacker is not always the answer. Many variables need to be evaluated in order to decide the best course of action. For example, you need to determine whether or not the attacker has a weapon, how many opponents are facing you, and what the nature of the surrounding terrain has to offer.

Several researchers have developed models for mental processes to follow during the onset of a critical incident. Ed Lovette's is probably the best known:

1. Perceive the problem (0.25 seconds). The majority of attacks are preceded by body language. In every violent incident I have experienced as a law enforcement officer, I observed warning signals from my opponents.
2. Evaluate the problem (0.25 seconds) by recognizing signs of aggression; you will be able to accept the imminent threat to your safety.
3. Select a response (0.25 seconds) after recognizing a threat and accepting that it is going to occur. Formulate a plan to survive and win the encounter. Rely on your training. Remember that you may need to draw upon a variety of techniques from your arsenal of skills.
4. Initiate the response (time depends on the response selected). You may begin to breathe at this time or before you begin to initiate the response. Use distance and movement to make yourself less of a

target. Create diversions to assist in ensuring your possible escape to safety. Most attackers will be unprepared for a well-planned response.<sup>10</sup>

## **Conclusion**

Recently, while training with our SWAT team, I participated in an exercise with other group members where we were running, jumping and dragging equipment through an obstacle course while shooting our MP40 submachine guns at various targets. We were each required to wear full gear, including flak jackets with a heavy armored steel plate inside, along with additional equipment. All the equipment we were wearing weighed approximately 80 to 90 pounds. The weather was warm, approximately 85 degrees Fahrenheit. I found that during the first few minutes of the course, my heart rate increased dramatically, my vision narrowed significantly and my fine motor skills and ability to understand instructions decreased severely. It wasn't until I wrote this essay that I related my symptoms during that exercise to survival stress reaction.

Siddle determined via his studies that the “combat maximum performance range” occurs when your heart rate is between 115-145 bpm. Siddle also found that a fighter's “maximum reaction time performance range” is between 115-145 bpm as well. That range of 115-145 bpm is where fighting skills and reaction time are at their peak and your body is not excessively compromised by acute stress reactions.<sup>11</sup>

Although we have examined many aspects of fight or flight syndrome, the most important technique for



managing your symptoms is to rely on your tactical breathing. That is the key to reducing your heart rate to the maximum performance range. If you find yourself in bad situation, performing tactical breathing in the correct way will help deactivate the mass discharge of your nervous system associated with SSR. Your brain will be able to process the visual and auditory aspects of the situation and your mind will remain calm and decisive. This is called *homeostasis*, which means your body is in harmony with itself. Be mindful of the stress symptoms and use your breathing to stay ahead of them. Remaining calm and in control will help keep you safe on the street and victorious in competition.

## References

- Fight or Flight Reaction. Available at [http://www.changingminds.org/explanations/brain/fight\\_flight.htm](http://www.changingminds.org/explanations/brain/fight_flight.htm). Accessed July 9, 2007.
- Fight or Flight Response. Available at [http://en.wikipedia.org/wiki/Fight\\_or\\_flight](http://en.wikipedia.org/wiki/Fight_or_flight). Accessed June 7, 2007.
- Griffith, David. "The Renaissance Man." *Police*, v. 31, no. 2, February 2007, pp. 18-23.
- Johnson, Ernest. "Recognizing the Threat." *Wyoming Law Enforcement Academy*, August 18, 1994, p. 1.
- Klugiewicz, Gary T. "Reaction Time." *Police*, v. 26, no. 3, March 2002, pp. 26-31.
- Laur, Darren. The Anatomy of Fear and how it relates to Survival Skills Training. Available at <http://www.defendu.com/sst.htm>. Accessed June 24, 2007.

Lovette, Ed and Dave Spaulding. *Defensive Living: Preserving Your Personal Safety Through Awareness, Attitude & Armed Action*. Flushing, New York: Looseleaf Law Publications, Inc., 2000. ISBN 1932777091.

Siddle, Bruce. *Sharpening the Warrior's Edge: The Psychology & Science of Training*. Nova Scotia, Canada: PPCT Research Publications, 1995. ISBN 0964920506.

## Endnotes

- <sup>1</sup> Wikipedia, 2007.
- <sup>2</sup> Wikipedia, 2007.
- <sup>3</sup> Klugiewicz, 2002.
- <sup>4</sup> Johnson, 1994.
- <sup>5</sup> Laur, 2007.
- <sup>6</sup> Changingminds.org, 2007.
- <sup>7</sup> Laur, 2007.
- <sup>8</sup> Siddle, 1995.
- <sup>9</sup> Laur, 2007.
- <sup>10</sup> Lovette, 2000.
- <sup>11</sup> Siddle, 1995.