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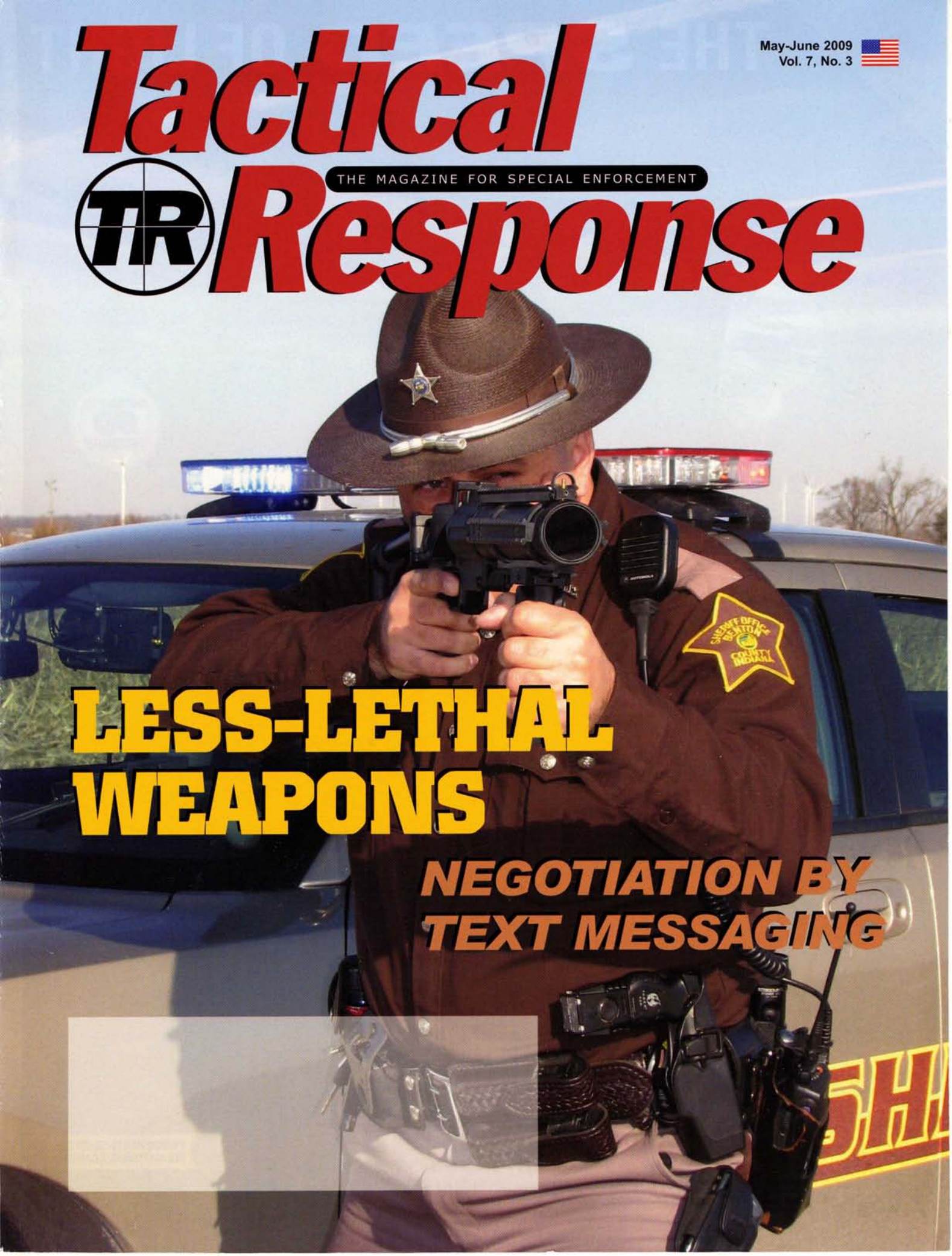
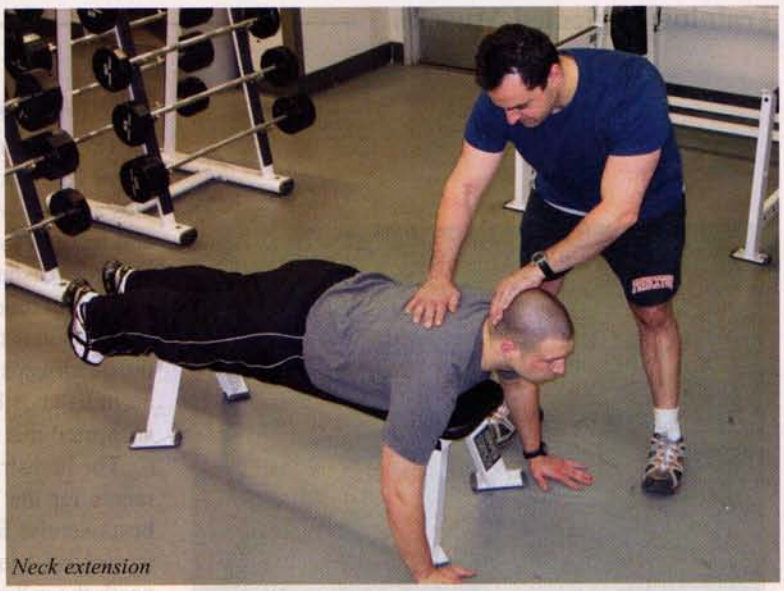


LESS-LETHAL WEAPONS

NEGOTIATION BY TEXT MESSAGING

Training Neglected Muscles

By Matt Brzycki



Neck extension

As part of maintaining operational readiness, most members of the tactical community do strength training on a regular basis. But despite the best intentions, a number of muscles that are essential to SWAT frequently get neglected.

Typically, the muscles that can be seen in a mirror are the ones that get trained. More often than not, this means that the muscles that influence the anterior (front) portion of the body are exercised while the muscles that influence the posterior (back) portion of the body are neglected. In effect, it's the "showy" muscles that garner most of the attention.

When important muscles are neglected, problems can surface at some point down the road. For example, emphasizing one muscle without giving its opposing muscle an equal—or nearly equal—amount of consideration can create an imbalance, which can increase the likelihood of injury.

Improvements in strength can be achieved with any type of equipment that provides a meaningful workload. It's not so much the equipment that dictates the results; rather, it's the effort that's used to perform the exercise. Since access to equipment may be limited, the exercises that are described here won't involve anything elaborate.

For the most part, this means the use of dumbbells and manual resistance, in which the workload is provided by another person or "spotter." With that, here's a look at essential muscles that are often overlooked with an emphasis on their function and importance along with descriptions of effective exercises.

Neck Flexors / Extensors

The muscles on the front of the neck can be collectively referred to as the "neck flexors." These muscles are used in neck flexion (bringing the head toward the chest), neck lateral flexion (bending the neck to the side) and neck rotation (turning the head). The back of the neck contains several muscles that can simply be grouped as the "neck extensors." These muscles are used in neck extension (bringing the head backward).

Having a strong neck is extremely beneficial for SWAT operators. If a ballistic helmet is worn for a lengthy period of time, the neck gets fatigued. The helmet may only weigh a few pounds, but after being on a callout for several hours, that's enough to tire the neck. When fatigued, there's a greater potential for poor reactions and bad decisions. Training the neck also offers considerable protection from a stiff neck, a neck sprain/strain (a "whiplash") and even a blow to the head.

A productive exercise for the neck flexors is neck flexion. This exercise can be done with manual resistance. Lie supine on a bench and place the feet flat on the floor. Position the head over the end of the back pad, interlock the fingers and place them across the mid-section. The spotter should apply resistance against the chin with one hand and the forehead with the other.

To do the exercise, pull the head as close to the chest as possible as the spotter applies resistance evenly throughout the full range of motion. Pause briefly in this mid-range position (the chin near the chest) and then resist as the spotter pushes the head back to the start / finish position (the chin away from the chest).

An effective exercise for the neck extensors is neck extension. This is another exercise that can be done with manual resistance. Lie prone on a bench and place the hands and feet on the floor (or place the legs across the back pad). Position the head over the end of the back pad. The spotter should place one hand on the back and apply resistance against the back of the head with the other.

To do the exercise, extend the head backward as far as possible as the spotter applies resistance evenly throughout the full range of motion. Pause briefly in this mid-range position (the chin away from the chest) and then resist as the spotter pushes the head back to the start / finish position (the chin near the chest).

Training tip: Neck exercises should be done at the beginning of a workout while fresh, both physically as well as psychologically.

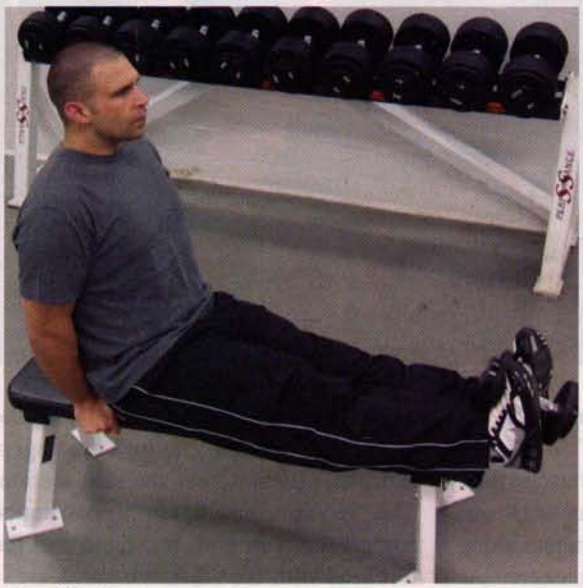
Hamstrings

The hamstrings, AKA the "hams" are found on the back of the upper legs and actually include three muscles. Together, these muscles are involved in knee flexion (bringing the heels toward the hips) and hip extension (driving the upper legs backward).

One reason why the hamstrings shouldn't be neglected is that they're involved extensively in running and jumping. But possibly the best reason is that they're quite susceptible to pulls and tears. Training the quadriceps and doing little or nothing for the hamstrings produces an imbalance between these two opposing muscles. It has long been suspected that this imbalance can lead to an injury.

The hamstrings are worked indirectly during multiple-joint movements for the hips such as the leg press and deadlift. However, the best exercise for engaging the hamstrings directly is the leg curl with a machine. Lie prone on the chest pad and place the lower legs underneath the roller pads. Position the tops of the kneecaps so that they're just over the edge of the thigh pad.

To do the exercise, pull the heels as close to the hips as possible. Pause briefly in this mid-range position (the legs bent) and then lower the weight under control to the start / finish position (the legs straight). Training tip: In the event of lower back pain, doing the leg curl in the seated position may alleviate the discomfort.



Dorsi flexion

Dorsi Flexors

The front of the lower legs contains four muscles that are sometimes simply referred to as the "dorsi flexors." The largest of these muscles is the tibialis anterior. The dorsi flexors are primarily used in dorsi flexion (pulling the toes toward the shins).

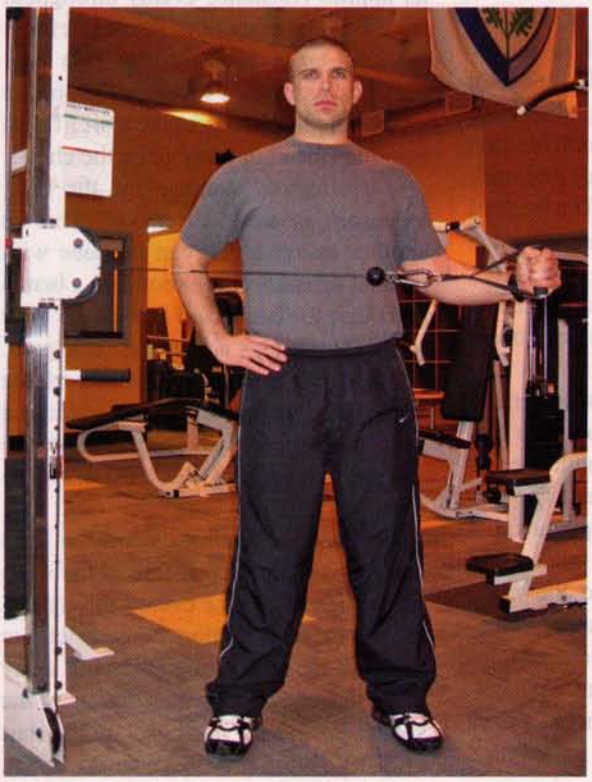
It's critical to strengthen the dorsi flexors as a safeguard against shin splints, a general term that's used to describe a variety of painful conditions that are usually located on the lower two-thirds of the tibia (aka the "shin bone"). Shin splints can occur from running in tactical boots that are rigid and/or don't absorb impact very well.

True, SWAT operators normally don't run long distances on an op. But remember, the impact forces are increased when running with tactical gear that may weigh 35 pounds or more. Shin splints can also result from running as part of PT, even with good footwear, if it's done excessively or on an unforgiving surface such as pavement. In addition, a muscle imbalance between the calf muscles and dorsi flexors can cause shin splints.

The best exercise for the dorsi flexors is dorsi flexion. This exercise can be done with a dumbbell. Sit down near the end of a bench and place the dumbbell between the feet. Slide the hips back so that the legs lie across the length of the back pad. Position the heels slightly over the end of the pad and point the toes away from the shins.

To do the exercise, keep the legs flat on the pad and pull the toes toward the shins. Pause briefly in this mid-range position (the toes near the shins) and then lower the dumbbell under control to the start / finish position (the toes away from the shins).

Training tip: Dorsi flexion can also be done with manual resistance in a similar manner as described here (with the spotter applying resistance between the forefoot and midfoot).



External rotation

Back extension

Leg curl

Bent over raise

Posterior Deltoid

The most important muscles in the shoulders are the deltoids. The "delts" are actually composed of three separate parts—the anterior, medial and posterior—which correspond to their location on the shoulder. Often neglected is the posterior deltoid, which is used to draw the upper arm backward. Overtraining the anterior deltoid, while overlooking the posterior deltoid may be one reason why shoulder problems are so common. Clearly, the posterior deltoid must be exercised to counterbalance the anterior deltoid.

The bent-over raise is a great exercise for the posterior deltoid. This exercise can be accomplished with a dumbbell. Place the left hand and left knee on the back pad of a bench and position the right foot on the floor at a comfortable distance from the bench. Grasp the dumbbell with the right hand and straighten the right arm. Point the right palm toward the bench.

To do the exercise, keep the arm fairly straight and raise the dumbbell sideways until the arm is parallel to the floor. Pause briefly in this mid-range

Bar hang

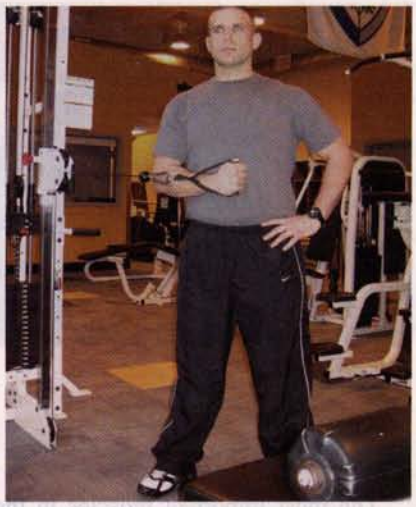
position (the arm parallel to the floor) and then lower the dumbbell under control to the start / finish position (the arm near the bench). Training tip: As the bent-over raise is performed, keep the arm perpendicular to the torso.

Rotator Cuff

The rotator cuff is composed of several deep muscles within the shoulder that are sometimes referred to as the "internal rotators" and "external rotators." In addition to performing rotation, these muscles are largely responsible for maintaining the integrity of the shoulder and preventing shoulder impingement, a general term that's related to some inflammatory conditions including bursitis and tendinitis.

The shoulder complex—the shoulder joint and shoulder girdle—has a lot of mobility but also a lot of instability. These two factors make the shoulder prone to a host of injuries. Especially vulnerable is the rotator cuff. And because of the physical nature of SWAT, injuries to the rotator cuff are quite common.

Internal rotation is the best exercise for isolating the internal rotators. This



Internal rotation

exercise can be done with an adjustable cable column. Adjust the position of the pulley so that it's approximately even with the right elbow. Grasp the handle with the right hand and turn the feet so that the right side is facing the machine.

Position the left hand on the left hip. Place the right elbow against the right side of the torso and bend the right arm so that the angle between the upper and lower arms is about 90 degrees. Position the handle away from the mid-section and spread the feet about shoulder-width apart.

To do the exercise, pull the handle to the mid-section. Pause briefly in this mid-range position (the handle near the mid-section) and then lower the weight under control to the start / finish position (the handle away from the mid-section).

External rotation is the best exercise for isolating the external rotators. This is another exercise that can be done with an adjustable cable column. Adjust the position of the pulley so that it's approximately even with the left elbow. Grasp the handle with the left hand and turn the feet so that the right side is facing the machine. Position the right hand on the right hip. Place the left elbow against the left side of the torso and bend the left arm so that the angle between the upper and lower arms is about 90 degrees. Position the handle against the mid-section and spread the feet about shoulder-width apart.

To do the exercise, pull the handle away from the mid-section. Pause briefly in this mid-range position (the handle away from the mid-section) and then lower the weight under control to the start / finish position (the handle near the mid-section). Training tip: Exercises for the rotator cuff can be done in a workout as part of the shoulder routine.

Forearms

Each one of the forearms has 19 different muscles. These muscles may be divided into two groups on the basis of their position and function. The anterior group on the front of the forearm causes wrist flexion (flexing the wrist) and pronation (turning the palm downward); the posterior group on the back of the forearm causes wrist extension (extending the wrist) and supination (turning the palm upward).

Having strong forearms is absolutely essential for SWAT. The forearms affect the wrists, hands and fingers. As a result, they're used a great deal in pulling, climbing, grappling and other tasks that require gripping.

Exercises for each of the muscular functions can certainly be done. But all of the gripping muscles can be strengthened effectively with the bar hang. Grasp a chinning bar with the palms facing away from the body. Bring the body to a "dead hang" and cross the ankles. To do the exercise, simply hang on to the bar for as long as possible.

Training tip: To prepare for the demands of extra gear, this exercise

should be done with added resistance around the waist or some elements of tactical gear (in particular, body armor).

Erector Spinae

The main muscles of the lower back are the erector spinae. Located on the posterior and lateral portion of the mid-section, these muscles are involved in torso extension (straightening the torso from a bent-over position), torso lateral flexion (bending the torso to the same side) and torso rotation (turning the torso to the same side).

The erector spinae are perhaps the most neglected muscles in the body. And neglect may be the foremost reason why the vast majority of the population suffers from low-back pain at some point in their lives.

The erector spinae are used during a few multiple-joint movements for the hips such as the deadlift. But a better way to work these muscles more directly is the back extension with a bench that's designed specifically for the exercise. Place the feet flat on the foot platform and the backs of the lower legs against the leg pads. Position the pelvis against the hip pads so that the navel is above the edge. Allow the torso to hang straight down over the edge of the hip pads and fold the arms across the chest.

To do the exercise, raise the torso until it's aligned with the upper legs. Pause briefly in this mid-range position (the torso aligned with the upper legs) and then lower the torso under control to the start / finish position (the torso near the upper legs). To make the back extension more challenging, hold extra weight or have a spotter apply manual resistance against the upper back.

Training tip: Fatiguing the lower back will hinder performance in subsequent exercises so the back extension should be done at the end of a workout.

There are numerous versions of the so-called "Five-P Rule" of the military, but one goes something like this: Proper Preparation Prevents Poor Performance. Without a doubt, training muscles that are essential to SWAT should be part of proper preparation.

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