

NAVAL SPECIAL WARFARE

# **BUD/S INJURY PREVENTION**

---

DISCLAIMER: Preparation for this training can be equally strenuous. You should consult a physician before you begin any strenuous exercise program, such as the one described here, or any diet modification, especially if you have or suspect that you may have heart disease, high blood pressure, diabetes, or any other adverse medical conditions. If you feel faint or dizzy at any time while performing any portion of this training program, stop immediately and seek medical evaluation. The United States Government and any service member or civilian employed by the United States Government disclaims any liability, personal or professional, resulting from the misapplication of any training procedure, technique, or guidance described in this guide.



Prevention is the key to avoiding a visit to BUD/s medical for a movement related injury. It is too late to begin a preventative program once symptoms of an injury have been identified. Therefore, it is vital that BUD/s candidates properly prepare themselves to complete the rigorous training injury free. This preparation includes stretching and strengthening of specific muscles not usually addressed in a typical BUD/s candidate workout routine.

## UPPER EXTREMITY INJURY PREVENTION

### Stretching Exercises

- Hold each for 30 seconds
- Repeat 3 times
- Perform 2 times a day

Stretches should NOT be painful!

Upper extremity injuries commonly encountered in BUD/s usually involve the shoulder, and are easily prevented with a consistent stretching and strengthening program.

- Scalene Stretch
- Lat and Prayer Stretch
- Pectoral Stretch
- Thumb-Down Shoulder Strength
- Lawnmower Pull (Mid Back)
- Shoulder External Rotation
- Shoulder Internal Rotation
- The “Y” Exercise
- The “T” Exercise
- The “W” Exercise

### Scalene Stretch

The neck muscles are instantly put to the test when candidates are asked to carry boats on their heads. Nerve injuries often originate from the neck, and this stretch provides flexibility to these muscles to prevent nerve compression.



### Lat and Prayer Stretch

Tight upper back muscles prevent students from maximizing their overhead reach. This can lead to shoulder injuries during log PT. These stretches can be performed sitting with elbows on an elevated table (left) or kneeling (right). The stretch should be felt on the outside of the armpit and into the back.





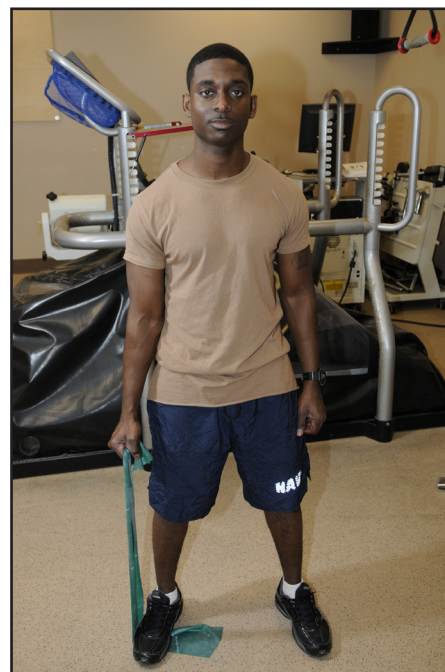
### ***Pectoral Stretch***

Due to the high volume of push-ups, pectoral muscles become strong and tight limiting shoulder range of motion and making the joint vulnerable to injury. This stretch should be performed in a corner so both shoulders can be stretched. Stretch should be felt in the chest, and arms can be moved up and down to change where the stretch is felt.



### ***Thumbs-Down Shoulder Strength***

Perform exercise with a rubber band or a cable machine. Arm should be oriented 45 degrees from midline of the body with thumb pointing down. Raise arm to shoulder height. This exercise will strengthen a commonly injured muscle on the top portion of the shoulder and should not be painful!



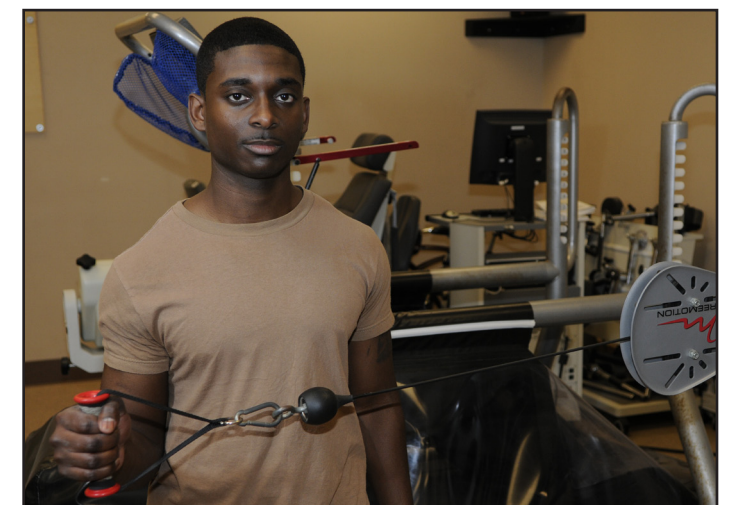
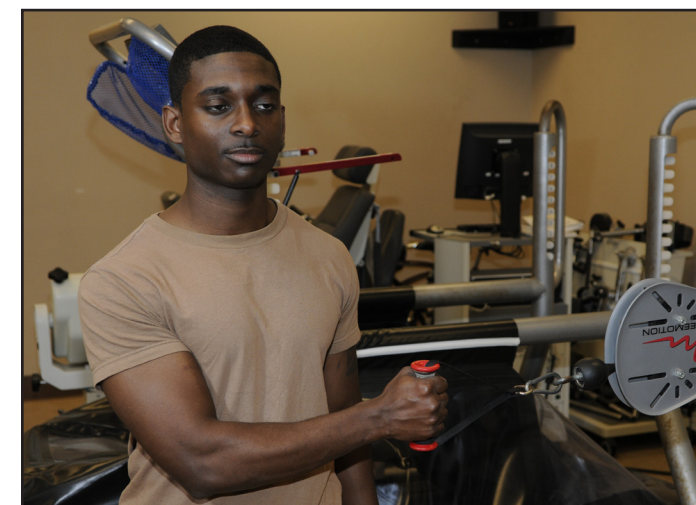
### ***Lawnmower Pull (Mid Back)***

Perform exercise with a rubber band or a dumbbell. One arm at a time, and stagger your feet for balance. Lean forward with your back straight, and with a rowing motion, pull weight back towards your side. Make sure to cover the full range of motion, and your shoulder blade should move toward the center of your back.



### ***Shoulder External Rotation***

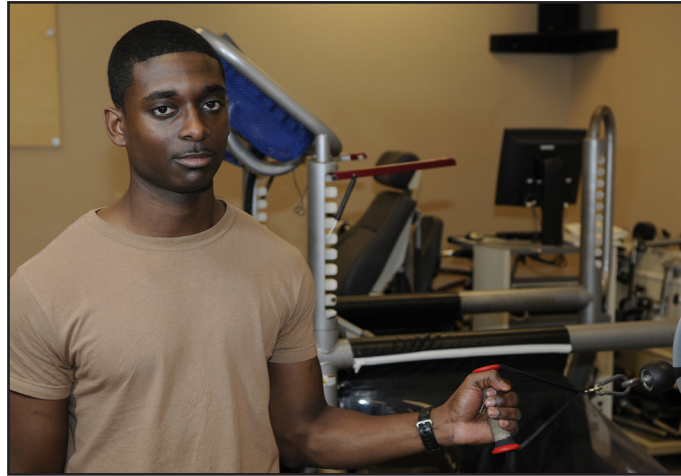
Perform this exercise with rubber bands or a cable machine. Start with your hand grasping handle across your body with your elbow firmly against your side. Pull the cable away from your body while maintaining contact between your elbow and your side. Use a rolled up towel to hold between elbow and side. If the towel falls while performing this exercise, your elbow is leaving your side, and you are performing this exercise incorrectly.





### Shoulder Internal Rotation

Perform this exercise with rubber bands or a cable machine. Start with your hand away from your body and elbow firmly against your side. Pull weight towards body, stopping once your hand is directly in front of you. Keep your elbow against your side throughout the exercise. Again, use a towel against side if needed.



### The “Y” Exercise

This exercise should be performed on your stomach while lying on a table or exercise ball. Start with arms hanging in a Y position below your body, and finish with them held in the air while maintaining the Y position. Elbows should be kept straight, and thumbs should point up. This exercise should be felt in the lower trap, or middle of your back.



### The “T” Exercise

This exercise is performed the same way as the Y exercise, only your arms are held straight in a T position away from your body. Begin with the arms hanging in the T position, and lift your arms up while you pinch your shoulder blades together. Keep your thumbs pointing up. This exercise should be felt between the shoulder blades in your middle trap.



### The “W” Exercise

This exercise is performed in the same position as the “Y” and “T” exercises, only you will begin with your elbows bent, hands toward the deck, and shoulder 90 degrees from your side (see picture). First, pinch your shoulder blades together, and then rotate your shoulder so your hands move upward while maintaining a 90 degree angle at the shoulder. This exercise targets the rotator cuff, middle trap, and rhomboids.





# LOWER EXTREMITY INJURY PREVENTION

## Stretching Exercises

- Hold each for 30 seconds
- Repeat 3 times
- Perform 2 times a day

Stretches should NOT be painful!

Lower extremity injuries are also very common at BUD/s. A balance of strength and flexibility are very important in preventing common injuries such as ligament sprains, muscle strains, and stress fractures.

- Hip Flexor Stretch
- Monster Walks
- Terminal Knee Extensions
- Calf Stretch
- IT Band Stretch
- Hamstring Stretch
- Dynamic Stretching

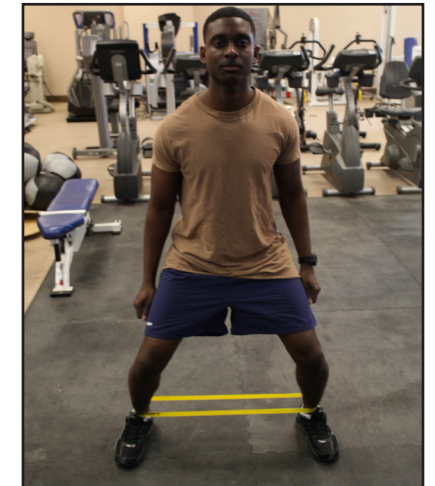
## Hip Flexor Stretch

To stretch the hip flexors, get into an upright lunge position, with your front knee bent and your back knee straight. Keep your back straight and lean forward while contracting your buttocks muscle. If stretch is not felt in the front of your hip, rotate torso away from the front leg.



## Monster Walks

For this very important exercise, tie a rubber band around your ankles. Lower slightly into a squat position, and side step while maintaining a straight back. Make sure your side steps are controlled and slow. Make sure to switch directions. This exercise can also be performed facing forward: step forward with one foot, and before placing foot on deck, bring foot to the side and in front of you at a 45 degree angle from the starting position. Repeat with other foot as you walk forward. This exercise should be felt on the outside of your hips.



## Terminal Knee Extensions

This exercise is performed with a rubber band or a cable machine. Begin by wrapping the rubber band behind your knee. There must be tension on the band throughout the exercise. With the foot planted on the deck, bend the knee, and then straighten the knee while concentrating on contracting the inside quad (tear drop muscle). This exercise is very important for kneecap pain.





### Calf Stretch

This stretch can be performed leaning against a wall or sitting. When sitting, use a belt or stretching strap around the bottom of the toes/foot. With knee straight, pull toes toward you. Perform the same stretch with the knee bent to target a different muscle in the calf. When doing this against a wall, keep your heels on the deck for both the knee straight and the knee bent positions.



### IT Band Stretch

The best way to stretch the IT band is to roll it out with a foam roller. Conventional stretches do little to stretch this thick tissue located on the outside of your leg. Lie on your side with the roller under your knee. With your full weight on the roller, slide your leg over the roller up to your hip. Repeat 7-8 times. Make sure you cover the entire area from the top of your hip to the very bottom of your knee.



### Hamstring Stretch

Stretch your hamstrings on a table one leg at a time. Keep the knee straight, and bend forward at the waist towards your toes. Keep your back straight.



### Dynamic Stretching

Performed before running during warm-up. Jog lightly in place while you do an exaggerated kick out in front with your knee straight for hamstring flexibility. Then kick your heels back to reach your buttocks. This will dynamically stretch the front of your thighs.

