

Graded RTP Protocol

Rehabilitation Stage	Functional Exercise at Each Stage of Rehab	Objective of Each Stage
1. No activity	Complete physical and cognitive rest	Recovery
2. Light aerobic exercise	Walking, swimming, stationary bike	Increased heart rate
3. Sport specific exercise	Running drills in soccer, skating drills in hockey, etc.	Add movement
4. Noncontact drills	More complex training drills, may start resistance training	Coordination and cognitive load
5. Full-contact practice	With medical clearance, normal training activities	Restore confidence, assess functional skills
6. Return to play	Normal game play	

Graded RTP Protocol

- Each step should take at least 24 hours
- Minimum of 5 days to resume full participation
- A return of symptoms indicates inadequate recovery
- If symptoms return at any step
 - Stop immediately, asymptomatic rest for at least 24 hours
 - Start again at last asymptomatic step
 - Attempt to progress again
 - Continued return of symptoms with exertion requires reevaluation by health care provider

Graded RTP Protocol

- Longer time course to progress through each step might occur in the athlete who
 - Is under 18 years of age
 - Has recovered from prolonged postconcussion syndrome
 - Has a history of recent or multiple concussions
 - Has a comorbid condition
 - Migraine, depression, other mental health disorder, ADHD, learning disabilities, sleep disorders

Retirement From Sports (AAP)

- Proposed to strongly consider prolonged time away from sports for any athlete who has
 - Suffered 3 concussions in a season or
 - Postconcussive symptoms for more than 3 months

Return to Play Progression

Baseline (Step 0): As the baseline step of the Return to Play Progression, the athlete needs to have completed physical and cognitive rest and not be experiencing concussion symptoms for a minimum of 24 hours. *Keep in mind, the younger the athlete, the more conservative the treatment.*

Step 1: Light Aerobic Exercise

The Goal: only to increase an athlete's heart rate.

The Time: 5 to 10 minutes.

The Activities: exercise bike, walking, or light jogging.

Absolutely no weight lifting, jumping or hard running.

Step 2: Moderate Exercise

The Goal: limited body and head movement.

The Time: Reduced from typical routine

The Activities: moderate jogging, brief running, moderate-intensity stationary biking, and moderate-intensity weightlifting

Step 3: Non-contact Exercise

The Goal: more intense but non-contact

The Time: Close to Typical Routine

The Activities: running, high-intensity stationary biking, the player's regular weightlifting routine, and non-contact sport-specific drills. This stage may add some cognitive component to practice in addition to the aerobic and movement components introduced in Steps 1 and 2.

Step 4: Practice

The Goal: Reintegrate in full contact practice.

Step 5: Play

The Goal: Return to competition

It is important to monitor symptoms and cognitive function carefully during each increase of exertion. Athletes should only progress to the next level of exertion if they are not experiencing symptoms at the current level. If symptoms return at any step, an athlete should stop these activities as this may be a sign the athlete is pushing too hard. Only after additional rest, when the athlete is once again not experiencing symptoms for a minimum of 24 hours, should he or she start again at the previous step during which symptoms were experienced.

The Return to Play Progression process is best conducted through a team approach and by a health professional who knows the athlete's physical abilities and endurance. By gauging the athlete's performance on each individual step, a health care professional will be able to determine how far to progress the athlete on a given day. In some cases, the athlete may be able to work through one step in a single day, while in other cases it may take several days to work through an individual step. It may take several weeks to months to work through the entire 5-step progression.

Before the start of the season, health care professionals should learn about state, league, or sports governing body's laws or policies on concussion (<http://www.nflhealthandsafety.com>)

<http://www.cdc.gov/Other/disclaimer.html>. Some policies may require health care professionals to take a training program or provide written clearance as part of the return to play process for young athletes.

Defense and Veterans Brain Injury Center

Concussion/Mild Traumatic Brain Injury Rehabilitation: Head Injury and Dizziness

Exercises You Can Do at Home

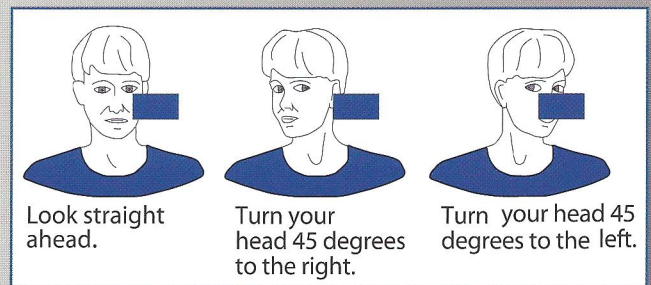
To help you feel better, your provider/therapist can teach you exercises to do at home. It is normal for your dizziness to get worse temporarily when starting exercises.

Before doing any type of exercise, make sure you are in a safe place in case you lose your balance.

- start by sitting down on a sofa or a bed
- once you are comfortable, you can try the exercises while standing next to a countertop or in a corner

Focus Exercises

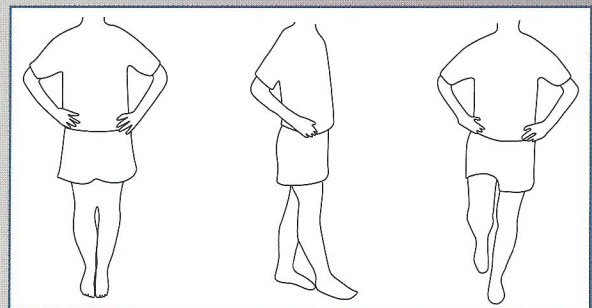
Look at a letter or a word on the wall 3 feet away. Keep the target in focus as you slowly turn your head left and repeat by turning your head to the right at a comfortable speed. As your dizziness improves, you can move your head faster as long as you can keep the target clearly in focus.



Standing Balance

Keep your balance with your feet together for 30 seconds. If this is too hard, start with your feet slightly apart. If you can do this, increase the challenge by continuing in the following order:

- standing with one foot in front of the other with eyes open
- standing on one foot with eyes open
- standing on both feet, closing your eyes
- turning your head right and left, or looking up and down with your eyes open



When Should I Seek More Help?

If you experience any of the following:

- worsening dizziness
- double vision or loss of vision
- weakness on one side of the body
- worsening headache
- drainage or bleeding from your ear
- dizziness and chest pains
- passing out and blackouts
- slurred speech or difficulty speaking
- suddenly losing hearing, or hearing that comes and goes
- dizziness caused by changes in pressure or sound

For More Materials or Copies

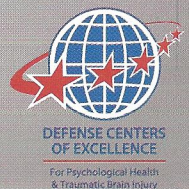
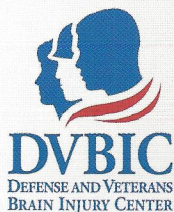
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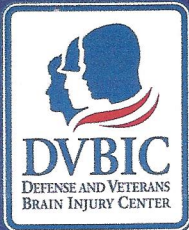
Additional Resources

Defense Centers of Excellence
dcoe.health.mil

BrainLine.org
BrainLineMilitary.org

Version 4: May 2012





Defense and Veterans Brain Injury Center

Concussion/Mild Traumatic Brain Injury Rehabilitation:

Headache and Neck Pain

20 YEARS OF SERVICE
★ 1992-2012 ★

Why Does it Hurt?

After a blast exposure, jump injury, car accident or other way that you might get a head injury, your neck may have experienced some trauma as well. Some people recover quickly from this type of injury while others continue to have pain or stiffness in their necks related to poor posture. This neck pain can become head pain.



1. Ice/Heat:

Ice your neck and head at least 2-3 times a day. Leave it there as you relax for about 20 minutes (or until the pack is no longer cold).

Heat is good for relaxing muscles. You can use a warm gel pack. A 10-20 minute shower works just as well. Most respond to ice better than heat. Try both to see which one works best for you. When using heat or ice with neck stretches (below), use heat to relax muscles before stretching, then use ice after stretching to calm the muscles.

2. Neck Stretches:

Before stretching in any direction, pull up your spine as straight as possible, then “retract” your chin towards your neck. The muscles you are stretching are small and delicate: start low, and go slow. Tips: keep your head level (not bending forward or back), do not tug or shove neck, and gently press on your chin for a deeper stretch:

Pull up:



Retract:



Deeper stretch:



Directions: Start by holding for only about 5-10 seconds, then more each day:

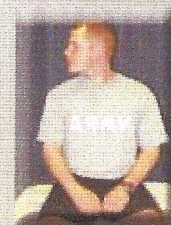
Flexion (chin to chest):

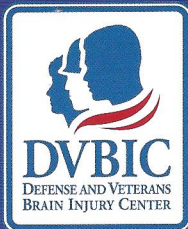


Lateral flexion (ear to shoulder):



Rotation (turn):





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Concussion/Mild Traumatic Brain Injury Rehabilitation:

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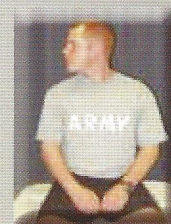
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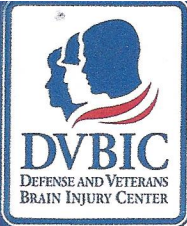


Lateral flexion (ear to shoulder):



Rotation (turn):





Defense and Veterans Brain Injury Center

Concussion/Mild Traumatic Brain Injury Rehabilitation:

Mood Changes



Having trouble concentrating?

Easily irritated or on edge?

Feeling overwhelmed, anxious, sad or depressed?

Understand that it is OK to have these feelings. There are things you can do to help manage these feelings. Take deep breaths, and know that the feeling will pass. Do not focus on your worries or troubles. Do something you enjoy.



This is normal and very common after a concussion/mild traumatic brain injury. Fortunately, these feelings get better with time.

Replace the negative thoughts or actions with positive ones. If you are in a situation that is upsetting you, get out of it. Go for a walk. Take a few minutes without disruption to settle yourself.

Do not call yourself bad names or put yourself down. You are not your concussion/mild traumatic brain injury. Life will get better. Stay positive.

Talk to someone you love or trust about these feelings. Many people have felt the same way you have at some point in time. Don't be afraid to express yourself. Your health care provider can also help, so be sure to share your feelings with him or her.

If you have thoughts or feelings of hurting yourself or others, seek emergency care.

Symptoms associated with TBI are similar to psychological stress. If these mood changes are causing problems at work or home, seek help.

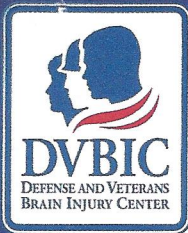
This tool is to be used as a patient education resource during a visit with your provider.

Developed by Subject Matter Experts from the DoD and VA

Version 2: 4 May 2009

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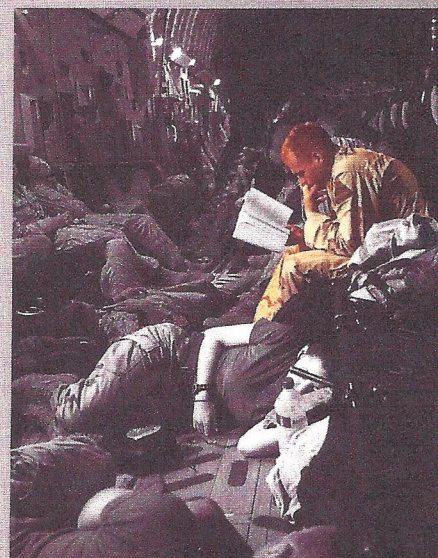
Concussion/Mild Traumatic Brain Injury Rehabilitation:

Healthy Sleep

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Getting a good night's sleep has to do with many factors. The following are helpful hints for good sleep hygiene and treatment of insomnia.

1. No caffeine-containing foods or drinks 3 hours prior to bedtime
2. No heavy exercise 3 hours prior to bedtime
3. No alcohol, nicotine or heavy meals within 3 hours of bedtime
4. Avoid bright light exposure near bedtime
5. Keep regular bedtime and wake-up hours, even on the weekend
6. Foster a quiet, pleasant sleep environment - a cool room and soft lighting
7. Have a relaxing bedtime routine - warm soak in the tub or warm shower, relaxing thoughts, meditation, progressive muscle relaxation exercises, or yoga
8. Stop work or TV viewing of disturbing or stimulating television shows at least one hour before bedtime
9. Use of the bed is for sleep and sex, which means no watching TV, work, or reading
10. Go to bed only when sleepy
11. Go to another room if sleep does not come within 20-30 minutes
12. Get up at the same time each morning
13. Do NOT take naps
14. If you have been prescribed sleep medications, take them as instructed and at the same time every night
15. Consult with a health care provider before taking any over-the-counter medications or supplements



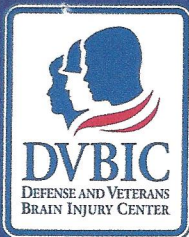
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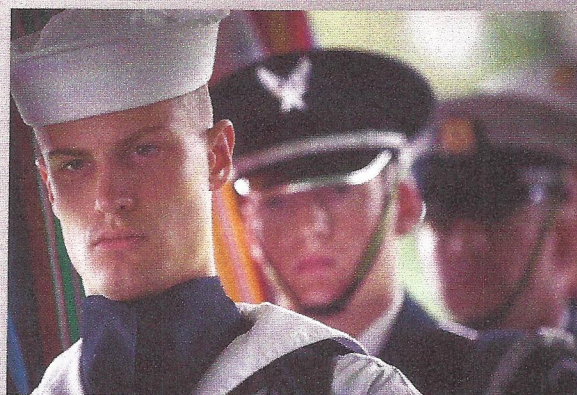
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Concussion/Mild Traumatic Brain Injury Rehabilitation:

10 Ways to Improve Your Memory

20 YEARS OF SERVICE
* 1992-2012 *

1. **Get 7 to 8 hours of sleep** - Keep a quiet, cool environment. Go to sleep at the same time nightly. No napping. Avoid high energy video games/movies/television prior to bedtime. Avoid exercise before bedtime.
2. **Write it down** - Keep a notebook and pen with you and write things down; it will keep you on track and help remind you of important things, like taking your medication. Day planners or small calendars help also.
3. **Avoid alcohol, tobacco, excessive caffeine and energy drinks** - These increase sleep problems, anxiety, blood pressure levels, and overall stress.
4. **Prioritize** - Make a list of things that need to be taken care of, place them in order of importance, and check them off when completed.
5. **Get a routine** - Put your keys in the same spot every day. Park in the same areas. Being consistent helps memory and lowers anxiety.
6. **Keep mentally active** - Work crossword puzzles. Read a book. Play a board or card game like solitaire or concentration. Try to learn something new every day.
7. **Decrease your stress level** - Don't take on too much at one time. Keep stress to a minimum. Stress hormones can damage your brain and add to depression and anxiety. Learn to say "no" when feeling overwhelmed. It's also OK to ask for help when you need it. Make time for you.
8. **Stay physically active** - Take the dog for a walk. Take the stairs instead of the elevator. Small spurts of exercise add up. The higher blood flow to your brain helps promote cell growth. Exercising is also a mood booster and helps with mental clarity.
9. **Feed your brain** - Eat high quality foods at regular intervals. Fish, colorful fruits and veggies, milk, eggs, whole grain breads, nuts, and beans all help to keep the brain and body healthy.
10. **Avoid further brain injury** - Consider swimming, walking, or running instead of playing football or boxing. Wear a helmet when riding your bike or motorcycle. Drive safely. Stay sober.



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