INFOSHEET

Concussion aftercare: Neck strength

Neck exercises can help in your recovery from concussion. The recommended exercises are very gentle and usually take about 10 minutes each day to complete. The exercises are designed to restore the movement and muscle control around your neck and to reduce unnecessary postural strain and muscle pain.

When you are doing the exercises, stop and contact your doctor or therapist if you notice:

- dizziness, light headedness, blurred vision, fainting or disorientation
- sudden pain shooting down your arm, or numbness or weakness in your arm or hand
- unusually severe neck pain, and/or
- exercises that consistently produce a headache, which stays.

For each exercise:

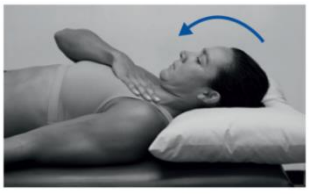
- move smoothly and slowly, without sudden jerks; the key is care and control
- keep your mouth and jaw relaxed; keep your lips together, teeth slightly apart and let your tongue rest on the roof of your mouth
- gently hold your shoulders back and down so that they are relaxed while you are doing all exercises (see posture correction exercise, Activity 4)
- in movement exercises, try to move the same distance to each side. If one side is stiffer, move gently into the stiffness. Move in that direction a little more often, expect some discomfort, but remember exercises should not cause severe pain.

Exercises while lying down

Lie down with a soft pillow under your neck, and with your knees bent up.

Activity 1: The chin nod exercise

1. Gently and slowly nod your head forward as if to say ‘yes’.
2. Feel the muscles at the front of your neck.
3. Stop the nodding action just before you feel the front muscles hardening.
4. Hold the nod position for five seconds and then relax.
5. Gently move your head back to the normal start position
6. Repeat up to 10 times.



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Activity 2: Head rotation

1. Gently turn your head from one side to the other.
2. Move your eyes in the same direction.
3. Progressively aim to turn your head far enough so your chin is in line with your shoulder and you can see the wall in line with your shoulder.
4. Repeat 10 times to each side.

Activity 3: Shoulder blade exercise

1. This exercise will relax and ease any tension in the muscles on top of your shoulders and it will give you pain relief.
2. Lie on your right side with your arm resting up on two pillows.
3. Roll your left shoulder blade back and across your ribs towards the centre of your back.
4. Hold the position for 10 seconds.
5. Repeat five times.
6. Repeat lying on the left side for the right shoulder blade.

Exercises while sitting

Activity 4: Correct postural position

1. Correct your posture regularly by gently straightening up your lower back and pelvis (sit tall).
2. Now gently draw your shoulder blades back and down.
3. Gently tuck your chin in. Hold the position with ease for at least 10 seconds.
4. This position will prevent and ease muscle pain and tension in your neck and shoulder muscles.
5. Repeat the correction regularly, every half hour during the day.

You can do this exercise at work, in the car, on a train or bus and sitting at home.

Activity 5: Neck retraction

1. Sit in the correct postural position described in Activity 4.
2. Gently draw your head back, sliding your chin back horizontally and keeping your nose pointing straight ahead. You should feel the retraction movement at the base of your neck and your neck should stay long.
3. Repeat this 10 times every hour when sitting.

Neck movement exercises

Sit in the correct postural position as described in Activity 4.

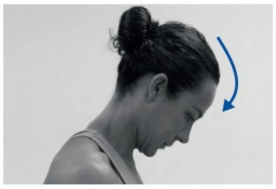
Activity 6: Rotation

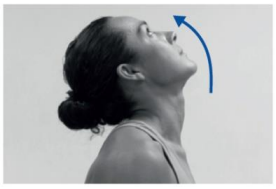
1. Gently turn your head from one side to the other.
2. Move your eyes in the same direction, progressively aim to see the wall in line with your shoulder.
3. This activity is similar to the activity you did lying down, only this time you do it sitting.
4. Repeat 10 times.

Activity 7: Side bending

1. Gently tilt your head towards your shoulder and feel the gentle stretch in the muscles on the side of your neck.
2. Perform the movement to both sides.
3. Repeat 10 times.

Activity 8: Bending and extension





1. Gently bend your head towards your chest.
2. Lead the movement with your chin.
3. Moving the chin first, bring your head back to the upright position and gently roll it back to look up towards the ceiling.
4. Leading with your chin, return your head to the upright position.
5. Repeat 10 times.

Neck strengthening (activities 9 to 11) should only be started later in your recovery. If you are unsure when to begin this, ask your treating health professional.

Activity 9: Neck strengthening exercises (isometric, no movement exercise)

1. Sit in the correct postural position as described in Activity 4.
2. Make sure your chin is relaxed and slightly down.
3. Place your right hand on your right cheek.
4. Gently try to turn your head into your fingers to look over your right shoulder but allow no movement.
5. Hold the contraction for five seconds.
6. Use a 10% - 20% effort, no more!
7. Repeat with the left hand on the left cheek.
8. Do 5 repetitions of the holding exercise to each side.

Activity 10: Neck bending and extension in the four-point kneeling position

1. Adopt the safe four-point kneeling position
2. Knees directly under hips, and hands directly under shoulders
3. Lower back in a neutral position
4. Slowly look up toward the ceiling as far as you can go.
5. Hold for 5 to 10 seconds.
6. Follow this by slowly bending your neck, leading the movement with a chin tuck or nodding action.
7. Continue the neck bending movement as far as possible, aim for your chin to touch your chest.
8. Throughout this movement you should hold your neutral lower back and shoulder blade posture.
9. Perform 5 to 10 repetitions.

Activity 11: Neck rotation in the four-point kneeling position

1. Adopt the safe four-point kneeling position.
2. Slowly rotate your head (turn your neck to one side).
3. It is important to maintain the gentle chin tuck or 'nod' position throughout the movement.
4. Also, make sure your head stays level with your body, and does not drop down.
5. If you do this exercise correctly, you should be looking over your shoulder at the end of the movement.
6. It helps to do this exercise positioning yourself so that you are side-on to a mirror and can check your head position.
7. Repeat to the other side.
8. Perform 5 to 10 repetitions.

INFOSHEET

This info sheet is for education purposes only. Please consult with your doctor or other health professionals to make sure this information is right for your child. If you would like to provide feedback on this fact sheet, please visit: **www.schn.health.nsw.gov.au/parents-and-carers/**

Concussion aftercare: Fatigue

What is fatigue?

Fatigue is extreme tiredness. Fatigue can be physical or mental and is normal after physical or mental activity. It is a signal telling us to take a break. 'Normal' fatigue is time-limited and eased with rest. 'Pathological' fatigue, on the other hand, is experienced following a brain injury and may last longer and may not improve with rest. Pathological fatigue can significantly impact on your ability to do the activities you want to do.

After a concussion, you may experience the following symptoms:

- Headache
- Dizziness
- Nausea and sickness
- High levels of fatigue

For many people, these symptoms will decrease within a few days or weeks. Over a period of a few weeks, most people recover and are able to return to normal activity.

Ongoing symptoms

Some people however, experience persistent (ongoing) symptoms over a longer period of time. These include:

- Mental fatigue
- Problems concentrating
- Sensitivity to light and noise
- Headache and dizziness

Your level of fatigue may vary and you may feel more tired as the day goes on. If you have persistent symptoms, it may take you longer to regain your mental energy.

Simple mental activities that would normally be relaxing can be very demanding for a person who has had a concussion. Watching TV, reading a book or having a conversation can be very tiring. This is because the brain gets easily tired when registering every detail after a concussion.

Following a concussion, simple physical activities such as walking and playing can also result in fatigue. This is known as intolerance to exercise. This physical fatigue or exercise intolerance can be managed with a gradual and progressive exercise program, much like a top athlete retraining. For most people, physical fatigue tends to go away within a few days or weeks following a concussion injury. You can then return to physical activity and exercise.

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What is surprising and often frustrating for many people with a concussion, is the mental fatigue. For example, you could spend all day playing and not feel tired from it, but an hour of homework can leave you exhausted. In some people, this mental fatigue can last for long periods of time. It is like owning a car that you can only fill with half a tank of gas. You can now only go half as far as you used to. When you run out of gas, the engine just stops. With mental fatigue, it is as if the brain runs out of chemicals and needs to stop.

What can I do?

Most people tend to get fatigued in the afternoon, generally around 2:00pm or 3:00pm. One suggestion would be to do the things that may be more difficult, earlier in the day when your mind is clearer. Keep in mind that fatigue can also affect your memory. If you learn information when you are fresh, it is more likely to stay with you. If you stay up late studying for a big exam, you will have more problems recalling the information the next day than if you had studied in the morning.

Exercise improves your ability to think. Although the human brain weighs less than 5% of the entire body, it uses 30% of the oxygen in the body. The same is true of glucose which provides the energy that runs your body. If we use the car analogy again, full power is not possible when an air filter is clogged and the carburetor has gunk. When you exercise, more oxygen gets into your blood stream and helps your ability to think. If your doctor has cleared you to do exercise, you should make a conscious effort to do so.

People who have chronic pain syndromes benefit from certain types of exercises. For example, swimming is very good for people who have neck or back pain. Therefore, always talk with your doctor about what exercise will work best for you.

A good diet or nutrition is also important. This should come from eating 3 good nutritious meals a day. In our busy society, people tend to eat a doughnut, have some coffee and rush off to school or work. This is not a very good diet. The sugar from a doughnut or the caffeine from coffee can give you a brief burst of energy (or the sugar buzz), but that energy does not last. The problem with sugar is that you are on a "roller coaster" where you get a burst of energy but then you come crashing down. Therefore, the trick to keeping the energy consistent is to have a constant supply of energy to the brain through regular nutritious meals and snacks. These release energy slowly rather than in a burst.

You will also need to gradually increase your stamina. Going from not studying or working to full time activity is very stressful. For someone with head-injury, this is nearly impossible. Therefore, you will need to give the brain the time it needs to build a tolerance to fatigue. A common approach is to have people slowly return to activity. You might start with part-time hours of 1 to 3 hours per day of school or work. Gradually increasing the hours, only when you can tolerate it. There are high expectations of you, the expectations you place on yourself and also those of the people around you. Some people have trouble understanding illnesses that cannot be seen. Fatigue can therefore be misinterpreted as laziness or a lack of interest. A head injury program can work with the school or an employer to make this possible.

What can you do to overcome fatigue?

- Undertake the harder activities earlier in the day, when your mind is more clear.
- You can overcome fatigue by making sure that you have a good diet, get regular rest and take breaks between activities.
- It is important to slowly get back to your everyday routine with your studies and work. Make sure that you do not over-exert yourself beyond your capabilities.
  When returning to physical activity, make sure you follow a gradual return to physical activity program, as prescribed by your doctor.

FACTSHEET

Mild head injury and concussion

A concussion is an injury to the brain caused by sudden strong movement of the brain against the skull. This is caused by a collision with another person or object. A child does not need to be knocked out (lose consciousness) to have concussion. Most concussion injuries do not involve any loss of consciousness.

If your child receives a bump or blow to the head or body and that causes a jarring of the head or neck, your child should stop playing immediately. It is important to monitor them for signs and symptoms of concussion.

What are the signs and symptoms of concussion?

Signs observed by others:

- Appearing dazed or stunned
- Repeating questions
- Problems remembering before or after the injury
- Confused about events
- Showing personality or behaviour changes

Symptoms reported by the child:

- Headache or "pressure" in the head
- Dizziness / loss of balance
- Nausea / vomiting
- Numbness / tingling
- Feeling tired (fatigued)/ slowed down
- Sensitivity to light / noise
- Visual problems (e.g. double vision)
- Drowsiness
- Trouble sleeping
- Does not "feel right"
- Feeling more emotional(e.g. sad or nervous)
- Trouble thinking clearly, concentrating or remembering

When should I take my child to a doctor?

If your child has any of the signs or symptoms listed, then they should be assessed by a doctor. It is important for you to record these symptoms. Note when they occurred, how long they lasted, and how severe they were, so that you can tell the doctor.
Signs and symptoms may not show up until 24-48 hours after the head injury.

When should I take my child to the Emergency department?

Take your child to the nearest Emergency department if at any time your child develops HEAD BUMPS

H worsening Headache, seizure, unconscious
E worsening Eye problems (blurred/ double vision)
A Abnormal behavior change
D Dizziness, persistent vomiting

B Balance dysfunction with weakness or numbness in legs/arms
U Unsteady on feet, slurred speech
M Memory impaired, confused, disoriented
P Poor concentration, drowsy, sleepy
S Something's not right (concerned about child)

In an emergency dial 000 for an ambulance.

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Treatment

The most important treatment for a head injury is complete physical and mental rest. Children and adolescents should not exercise, use computer screens, play video games or study for at least 24-48 hours. Your child will need some time away from school and sports. A gradual and staged return to school and sporting activities should be planned by your doctor.

Return to school

It is important to let the school know about your child's head injury. Sometimes children who have had a head injury find it hard to concentrate and may have a return or worsening of symptoms such as headache or nausea. They may experience fatigue and become tired more easily.

Following a concussion your doctor will advise a gradual return to school. Students returning to school may need to:

- have a gradual return to school, starting with fewer hours and building up to a half then full day.
- take rest breaks when needed.
- be given help and extra time to complete tests/exams or assignments.

Return to sport

It is important to not only let your child's school know about your child's head injury, but also the sporting coach or club. Following a concussion your child's reaction times and thinking may be slower putting them at risk of further injury. Your doctor will advise a gradual and staged return to activity. Children returning to sport may need to:

- begin with low level intensity physical activity (e.g. 10 minute walk).
- gradually increase non-contact activity, if they are symptom free.
- seek medical clearance before returning to regular activity, including contact and collision sports.

Remember

Children and adolescents should not participate in school, club sports or physical activity until they are completely symptom free and cleared by a doctor to do so.

If you have any concerns or your child is experiencing ongoing symptoms after 3-4 weeks please contact the Coordinator of the Brain Injury Rehabilitation Program at one of the following hospitals.

They will be able to give you advice and refer your child to your local service.

- Sydney Children's Hospital Randwick
  02 9382 1590
- The Children's Hospital at Westmead
  02 9845 2132
- John Hunter Children's Hospital Newcastle
  02 4925 7963

For other resources about concussion visit the Kids Health Website:
http://kidshealth.schn.health.nsw.gov.au/campaigns/concussion

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