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About cervical dystonia

Cervical dystonia (CD) is a focal dystonia that produces patterned, repetitive, and clonic (spasmodic) or tonic (sustained) muscle contractions resulting in abnormal movements and postures of the head and neck.^{1,2}

CD is the most common focal dystonia.^{3,4} It is usually a combination of the following head positions⁵:

- Torticollis (rotated)
- Laterocollis (to the side)
- Retrocollis (backward)
- Anterocollis (forward)

IMPORTANT SAFETY INFORMATION (continued)

WARNINGS (continued)

Lack of Interchangeability Between Botulinum Toxin Products

The potency Units of BOTOX[®] are specific to the preparation and assay method utilized. They are not interchangeable with other preparations of botulinum toxin products and, therefore, Units of biological activity of BOTOX[®] cannot be compared or converted into Units of any other botulinum toxin products assessed with any other specific assay method.

Spread of Toxin Effect

Postmarketing safety data from BOTOX[®] and other approved botulinum toxins suggest that botulinum toxin effects may, in some cases, be observed beyond the site of local injection. The symptoms are consistent with the mechanism of action of botulinum toxin and may include asthenia, generalized muscle weakness, liplopia, blurred vision, ptosis, dysphagia, dysphonia, dysarthria, urinary incontinence, and breathing difficulties. These symptoms have been reported hours to weeks after injection. Swallowing and breathing difficulties can be life threatening, and there have been reports of death related to spread of toxin effects.

Progression of CD

CD frequently begins as a pulling or drawing sensation in the neck or an involuntary twisting or jerking of the head.⁶ For most patients, CD is a lifelong condition.⁶

In about one-third of patients, the dystonia progresses to involve contiguous body parts, including the face, jaws, shoulders, and arms.⁷

Patients with CD often find it difficult to accomplish simple, everyday tasks. Dressing, shaving, housework, driving a car, or using a computer can become a challenge.

Although there is no cure for CD, symptoms may be successfully managed using a multidisciplinary approach to treatment that includes physical therapy as well as BOTOX[®] (onabotulinumtoxinA) injections.

The information in this booklet can help you become more familiar with CD, the benefits of BOTOX[®] treatment, and some exercises you can use with your patients to help ease muscle tightness and help reduce the neck pain associated with this often debilitating condition.

IMPORTANT SAFETY INFORMATION (continued)

WARNINGS (continued)

Spread of Toxin Effect (continued)

The risk of symptoms is probably greatest in children treated for spasticity, but symptoms can also occur in adults treated for spasticity and other conditions, and particularly in those patients who have underlying conditions that would predispose them to these symptoms. In unapproved uses, including spasticity in children and adults, and in approved indications, symptoms consistent with spread of toxin effect have been reported at doses comparable to or lower than doses used to treat cervical dystonia.

Hypersensitivity Reactions

Serious and/or immediate hypersensitivity reactions have been reported. These reactions include anaphylaxis, urticaria, soft-tissue edema, and dyspnea.



How BOTOX[®] neurotoxin treatment can help

BOTOX[®] (onabotulinumtoxinA) works by preventing nerves from releasing *acetylcholine*,⁸ a substance that transmits signals from nerves to muscles. Acetylcholine causes muscles to contract.

Results from a key clinical study of patients with CD who received BOTOX[®] treatment showed⁹:

- Improved head posture
- Pain that was less intense and occurred less frequently
- Improved ability to function in certain daily activities

After a BOTOX[®] neurotoxin treatment, CD patients may experience up to 3 months of relief from muscle spasms.⁹

IMPORTANT SAFETY INFORMATION (continued)

WARNINGS (continued)

Existing Neuromuscular Disorders

Individuals with peripheral motor neuropathic diseases, amyotrophic lateral sclerosis, or neuromuscular junctional disorders (eg, myasthenia gravis or Lambert-Eaton syndrome) should be monitored particularly closely when given botulinum toxin. Patients with neuromuscular disorders may be at increased risk of clinically significant effects including severe dysphagia and respiratory compromise from repeat doses of BOTOX[®].

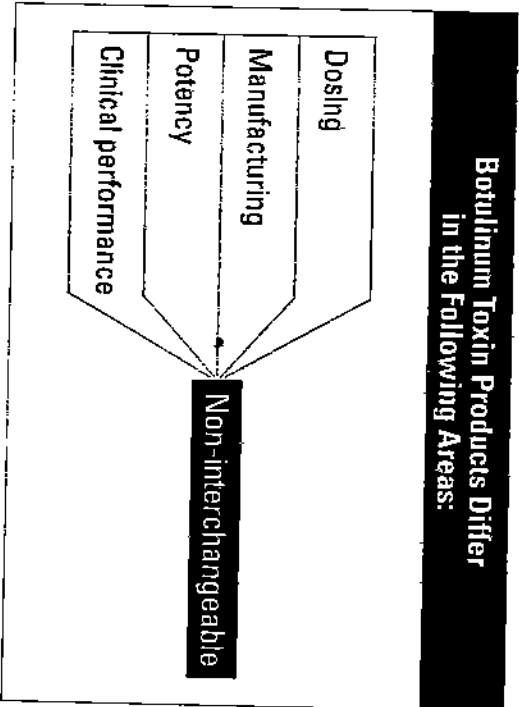
ADVERSE REACTIONS

General
There have been spontaneous reports of death, sometimes associated with pneumonia, sepsis, and/or other significant debility or anaphylaxis, after treatment with botulinum toxin.

There have also been reports of adverse events involving the cardiovascular system, including arrhythmia and myocardial infarction, some with fatal outcomes. Some of these patients had risk factors including cardiovascular disease. The exact relationship of these events to the botulinum toxin injection has not been established.

Unique formulation of BOTOX[®]

Each botulinum toxin product and its Unit dosing is unique, different, and not interchangeable.



Allergan formulation expertise:

- Approximately 20 years developing and manufacturing standardized, high-quality product in the United States

IMPORTANT SAFETY INFORMATION (continued)

ADVERSE REACTIONS (continued)

Cervical Dystonia

The most frequently reported adverse reactions following injection of BOTOX[®] for cervical dystonia include dysphagia (19%), upper respiratory infection (12%), neck pain (11%), and headache (11%).

Please see additional Important Safety Information on back cover.



The goal of physical therapy is to improve mobility, flexibility, and strength in the neck muscles. These exercises have two main objectives:

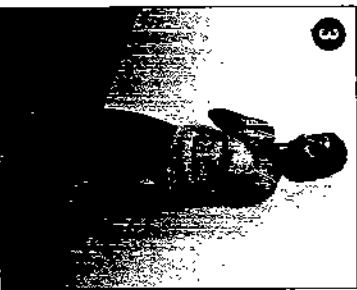
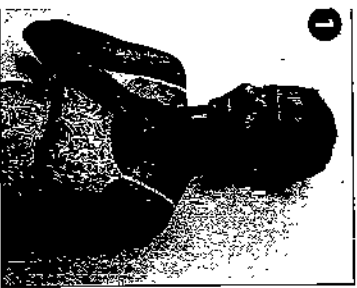
- To improve core strength to help establish a neutral position
- To strengthen antagonists and stretch agonists that produce abnormal postures in patients with cervical dystonia

Standing cervical retraction exercise: chin tuck

Stand against a wall with your knees slightly bent and your feet away from the wall. Keep your back flat against the wall.

- 1 Place your index finger on your chin.
- 2 Guide your head into a chin-tuck position—ie, nod your head, keeping the back of your head along the wall.
- 3 Please note: Position your feet away from the wall as shown.

Complete 10 repetitions 5 times a day.

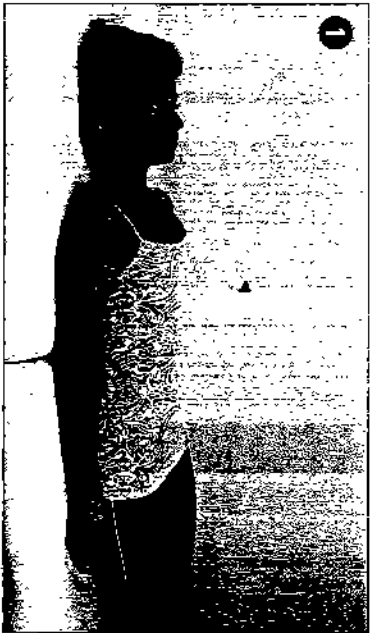


Supine lying cervical retraction exercise: chin tuck

1 Lie down on a flat surface with your legs straight. Keep your back flat against the surface.

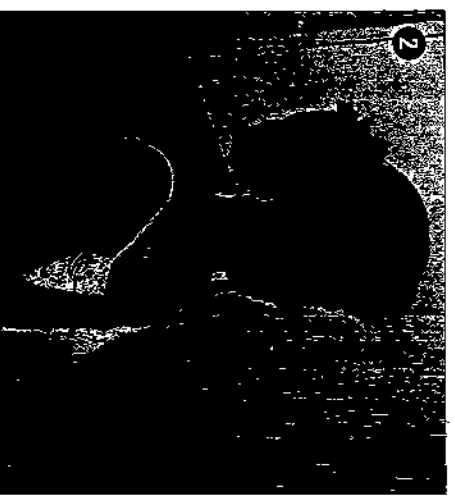
2 Flex your neck muscles to move your head into a chin-tuck position.

Complete 10 repetitions 5 times a day.



1 Sit upright in a chair.

2 Place your finger on your chin and tuck your chin in.
Complete 10 repetitions 5 times a day.



1 Lie on your back at the edge of the bed and let your arms hang off the edge of the bed.

- Point your thumbs toward the floor in the "hitchhiker thumb" position
- Hold for 20 to 30 seconds

Repeat this exercise twice a day.



1 Stand in a doorway, with your right leg forward.

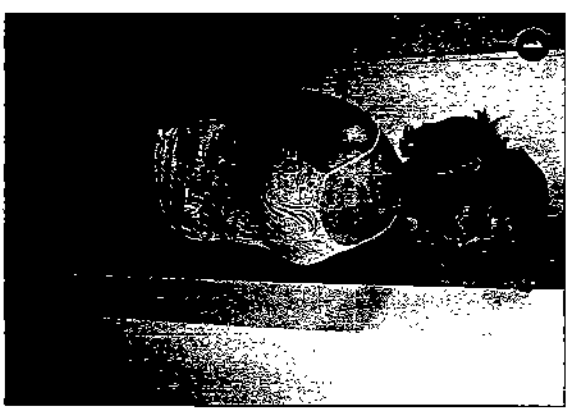
— Place your left forearm at a 90-degree angle along the wall

2 Glide the arm up along the wall. Feel the stretch through the entire muscle

— Hold in each tight position for 20 seconds

— Repeat on opposite side (left leg/right forearm)

Complete this exercise twice a day.



1 Sit on your left hand.

— Bend your head to the right with your right hand on your head

— Hold this position for 3 to 4 breaths

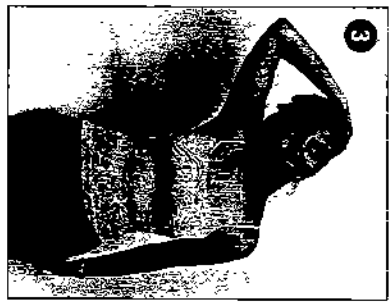
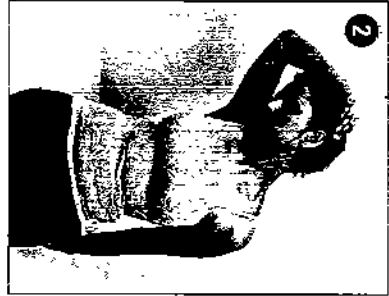
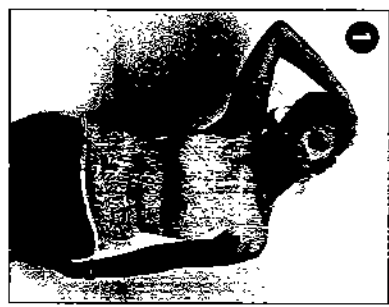
2 Turn your head to look down toward the floor.

— Hold this position for 3 to 4 breaths

3 Turn your head and look at the ceiling.

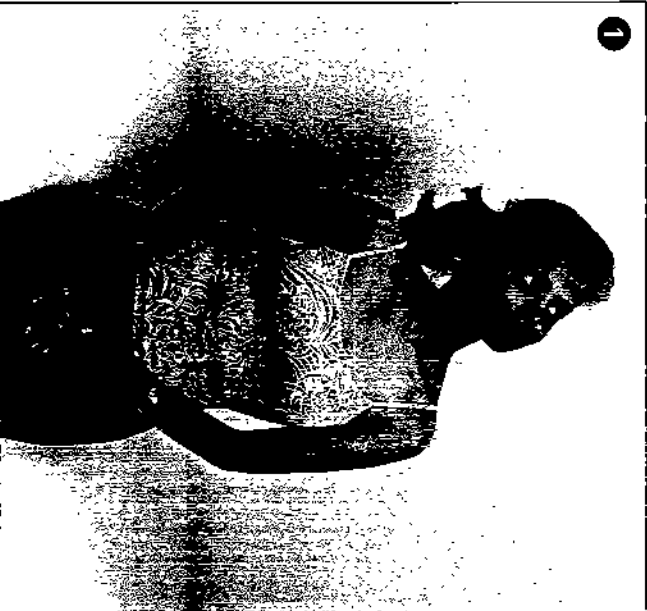
— Hold this position for 3 to 4 breaths

Complete this exercise 2 to 3 times a day.



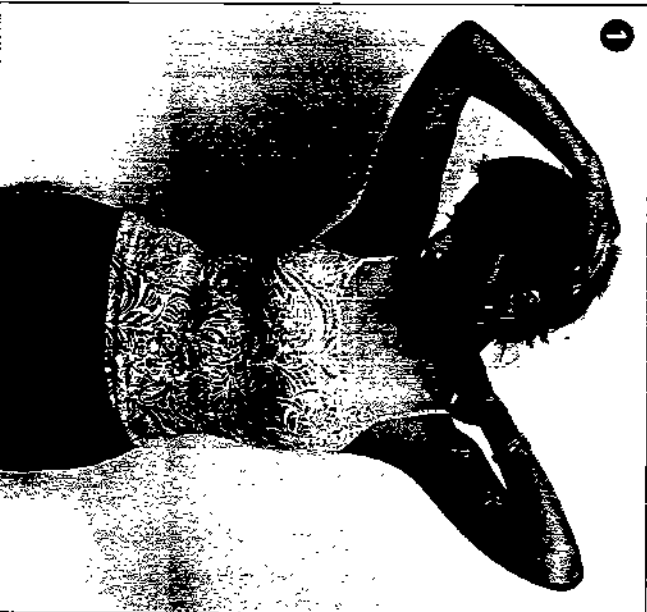
- ➊ Sit with your back straight.
- Bend your head to the right
- Turn your head and look up to the left
- Hold for 3 to 4 breaths

Complete this exercise twice a day.



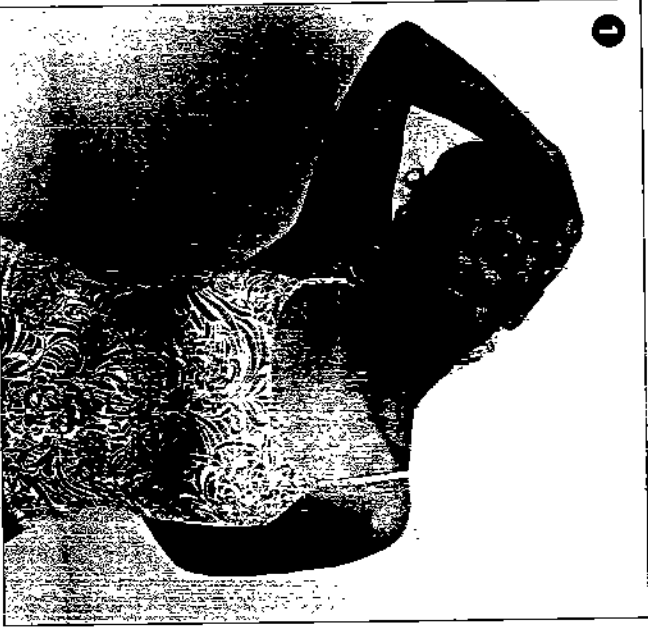
- ➊ Place your left hand on your left shoulder.
- Bend your head and tilt toward the right armpit
- Put your right hand on your head to stretch further
- Hold for 20 to 30 seconds

Complete this exercise twice a day.



- 1 Sit with your left arm behind your back.
- Bend your head to the right
- Put your right hand on your head to stretch further
- Hold for 20 to 30 seconds

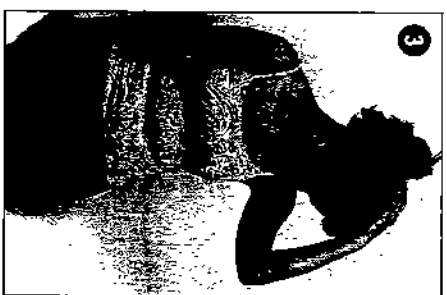
Complete this exercise twice a day.



Begin by sitting upright on a level surface.

- 1 Bend your head forward.
- Put your right hand on your head to stretch the head and neck
- Hold this position for 10 seconds
- 2 Turn your head to the right and hold for 10 seconds.
- 3 Repeat for the left side.

Complete this exercise twice a day.



- 1** Join your hands together, extend in front, and round your back.
 - 2** Stretch your arms up for 20 seconds.
 - 3** Stretch your arms down for 20 seconds.
- Complete this exercise twice a day.**

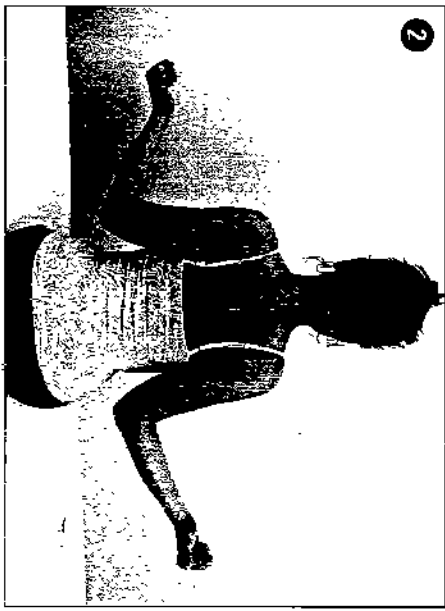
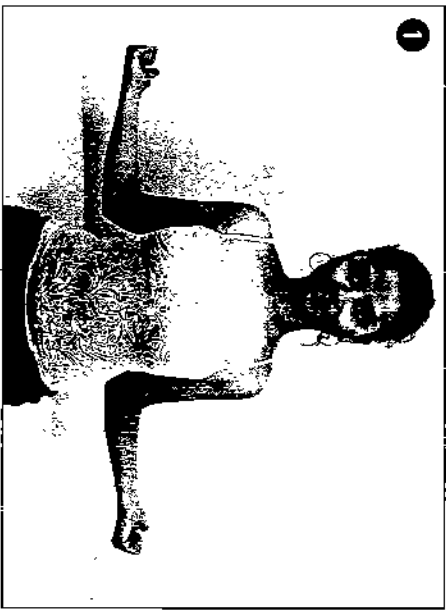


- 1** Lean forward and place your left arm on the bed with the palm facing up.
 - Hold this position with your right hand
 - 2** Lean your body backward.
 - Bend down further, if necessary, to feel your muscles stretch
 - Hold this position for 20 to 30 seconds
- Complete this exercise twice a day.**



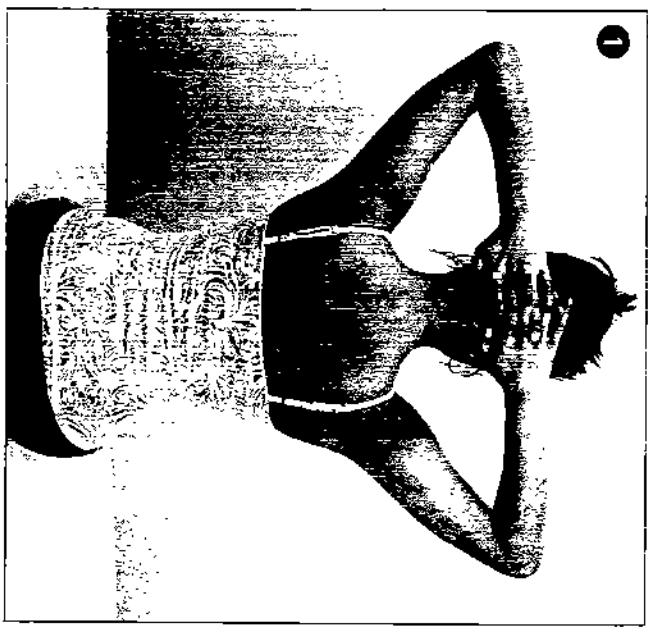
- 1 Sit upright on a level surface.
 - Keep your elbows bent and your hands in the “hitchhiker thumb” position
- 2 Squeeze your shoulder blades together.
 - Hold for 10 seconds

Complete 10 repetitions twice a day.



- Begin by sitting upright on a level surface.
- 1 Link your hands behind your head. Resist the tension as you press the back of your head into your hands.
 - Hold for 10 seconds

Complete 10 repetitions twice a day.

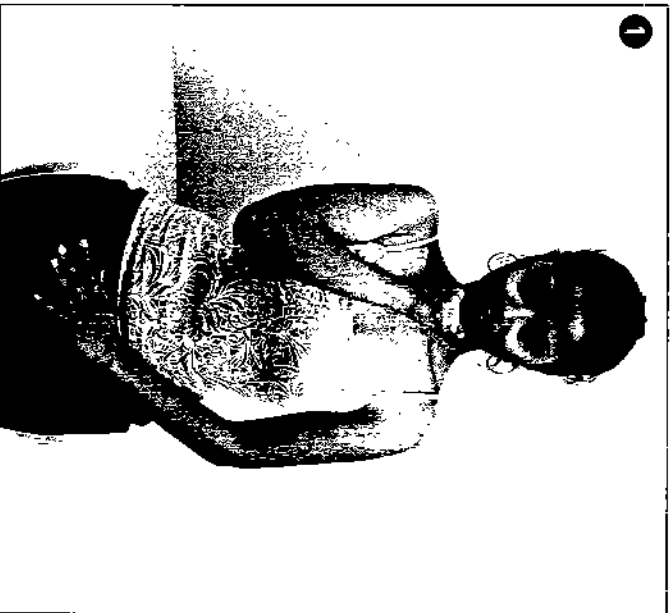


Begin by sitting upright on a level surface.

- 1 Make a fist under your chin. Resist the tension of your chin into your fist.

— Hold for 10 seconds

Complete this exercise 10 times twice a day.

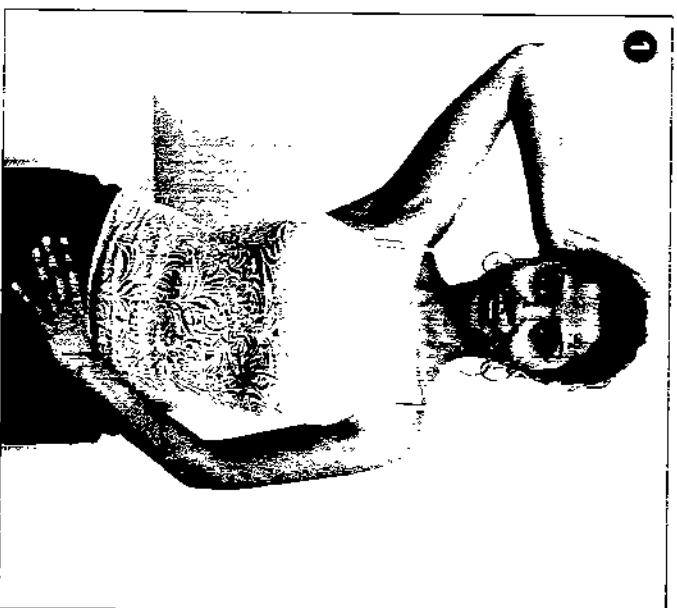


Begin by sitting upright on a level surface.

- 1 Press the side of your head into your palm, and resist the tension.

— Hold for 10 seconds

Complete this exercise 10 times twice a day.



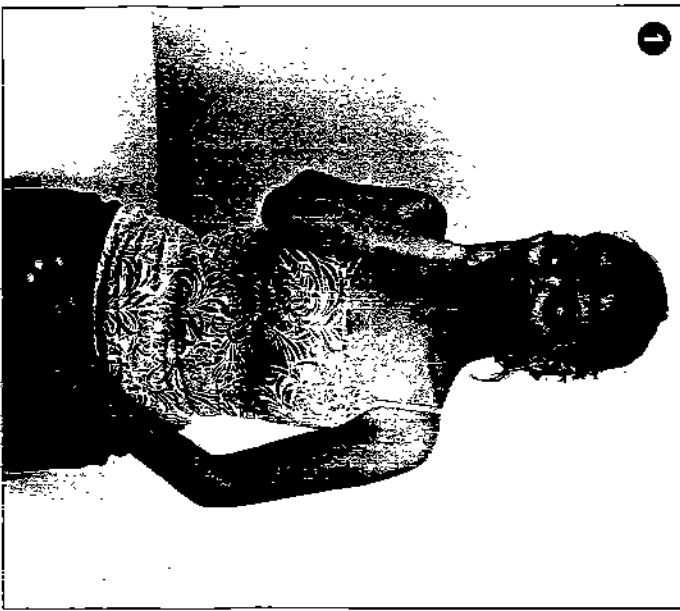
Please note: See how the fist is placed for maximum comfort.

Please note: The arm can be at a right angle as shown or can be by your side (depending on comfort level). The angle of resistance is better with your arm at a right angle.

Begin by sitting upright on a level surface.

- 1 Place your palm along side your face. Resist the tension of your face turning into your palm.
- Hold for 10 seconds

Complete this exercise 10 times twice a day.



Lie prone with a rolled-up towel supporting your forehead and a pillow under your stomach.

- 1 Keep your arms above your head.
- Raise your arms overhead with your thumbs pointing toward the ceiling in the "hitchhiker thumb" position
- Hold for 10 seconds

Complete this exercise 10 times twice a day.



Lie prone with a rolled-up towel supporting your forehead and a pillow under your stomach.

- 1 Keep your arms outstretched at a right angle to the rest of your body.
 - Lift your arms toward the ceiling with your thumbs pointing up in the “hitchhiker thumb” position
 - Hold for 10 seconds

Complete this exercise 10 times twice a day.



Lie prone with a rolled-up towel supporting your forehead and a pillow under your stomach.

- 1 Keep your arms by your side.
 - Squeeze your shoulder blades together as you raise your arms toward the ceiling
 - Hold for 10 seconds

Complete this exercise 10 times twice a day.



Appropriate sample exercises for each CD subtype are provided as initial suggestions to help you effectively work with patients to help ease the symptoms of CD.

Please keep in mind that the exercises in this booklet are suggestions, and before recommending any exercise, it is important to assess the specific needs of your individual patients. This will help you determine the optimal number of repetitions, intensity level, and frequency of the exercises.

In addition to this booklet, we have also included a CD-ROM of the same exercises and descriptions, which you can print out and provide to your patients as part of a home exercise program.

Cervical Dysfunction Subtype	Affected Muscles	Appropriate Sample Exercises	
Torticollis	Left	Right sternocleidomastoid and left splenius capitis	Cervical retraction exercises (pp7-9); right sternocleidomastoid stretch (see sternocleidomastoid example p13); and right isometric rotation exercise (p23)
	Right	Left sternocleidomastoid and right splenius capitis	Cervical retraction exercises (pp7-9); left sternocleidomastoid stretch (p13); and left isometric rotation exercise (p23)
Lateralocollis	Left	Left splenius capitis, left levator scapula, and left trapezius	Left scalene stretch (p12); left levator scapula stretch (p14); left upper trapezius stretch (p15); and right isometric lateral flexion exercise (p22)
	Right	Right splenius capitis, right levator scapula, and right trapezius	Right scalene stretch (see scalene stretch example, p12); right levator scapula stretch (see levator scapula stretch example, p14); right upper trapezius stretch (see upper trapezius stretch example, p15); and left isometric lateral flexion exercise (p22)
Anterocollis		Bilateral scalene complex and bilateral sternocleidomastoid	Pectoralis stretch (pp10,11); scapular retraction exercise (p19); and isometric cervical extension exercise (p20)
Retrocollis		Bilateral trapezius, bilateral splenius capitis, bilateral longissimus, bilateral splenius cervicis, and bilateral semispinalis capitis	Cervical retraction exercises (pp7-9); posterior cervical stretch (p16); and isometric cervical flexion exercise (p21)

Please note that choices of supine lying versus upright exercises will depend on the severity of the condition and the patient's ability to tolerate the exercises. The goal is to get the patient to do exercises in a sitting/standing position, as this is a functional weight-bearing position of the neck.