

CERVICAL SPINE NECK PAIN NON-OPERATIVE GUIDELINES

The following Cervical Spine Neck Pain guidelines were developed by HSS Rehabilitation and are categorized into levels of irritability as well as treatment sub-groups. These guidelines are intended to assist the clinician in structuring an individualized criteria-based treatment plan. They are based on the most current evidence and clinical pearls from experienced clinicians, however, are not meant to be a substitute for clinical reasoning and decision making. It is the clinician's responsibility to determine the most reasonable treatment model based on sound clinical judgement and assessment of objective clinical findings. For appropriate utilization of these guidelines, it is imperative that the clinician be familiar with the current clinical practice guidelines, treatment-based classifications systems and the influence of regional interdependence to make the most appropriate evidence-based decisions.

The clinician should use a patient-centered approach to promote function and general health. As treatment goals and plan of care are developed, the patient must take an active role in making informed decisions about their activities and behavior. The language used by the clinician during the evaluation and throughout all treatments has a substantial impact on outcomes. It is recommended that the clinician de-emphasize pathoanatomical explanations, and instead empower the patient by using language that promotes functional gains towards overall goals. It is recommended that the patient be provided with an appropriate home exercise program to promote active participation in the treatment plan throughout all phases of rehabilitation.

FOLLOW REFERRING PROVIDER MODIFICATIONS AS PRESCRIBED

A comprehensive cervical spine examination should include a comprehensive subjective history, review of systems, review of past medical/surgical history, and review of medications to identify signs/symptoms of sinister pathology and determine appropriateness for care. The therapist should be mindful of response to treatment and should continue monitoring for sinister pathology throughout course of care.

If any of the following events occurred or symptoms are present in conjunction with neck pain, refer for medical work up:

- New or recent trauma including:
 - Fall from elevation >3 feet or stairs
 - Axial load to head, e.g. diving, football
 - Motor vehicle collision at high speed (>60 miles per hour), rollover, ejection
 - Bicycle accident
- New onset of bowel and bladder dysfunction (retention/incontinence)
- Recent change in neurological status including paresthesias/numbness, dermatomal or myotomal abnormalities, upper motor neuron signs
- Sudden changes in auditory system, visual system, vestibular system and/or speech
- Severe/loss of coordination, recent increase in falls, fainting, drop attacks, nausea/vomiting, dizziness
- Recent concussion

Consider signs/symptoms and risk factors of vascular pathology:

- Neck pain
- Headache
- Unsteadiness/ataxia
- Dysphasia/dysarthria/aphasia
- Lower/upper limb weakness and/or paresthesia
- Facial palsy
- Dizziness
- Ptosis
- Significant cardiovascular history, i.e.: HTN, HLD, vascular anomaly
- Current or past smoker
- Recent infection

If any of the following yellow flag risk factors (see reference #2) are present in conjunction with neck pain, consider the impact on patient progression and the possibility for psychological referral:

- Depression / anxiety
- Psychosocial issues (secondary gain issues, No-Fault cases)
- Work related conditions (i.e., job dissatisfaction, worker's compensation)
- Substance abuse or chronic opioid use

CERVICAL SPINE NECK PAIN NON-OPERATIVE CLINICAL GUIDELINES

Phase 1: High Irritability

Vigor of activity required to provoke symptoms: low

Severity of symptoms: high

Time for symptoms to subside once aggravated: long duration

PRECAUTIONS

- Red, yellow, black flags
- Avoid exacerbating recurring symptoms

ASSESSMENT

- Neck Disability Index (NDI)
- Fear-Avoidance Belief Questionnaire Back (FABQ)
- Numeric Pain Rating Scale (NPRS)
- Static/dynamic posture
- Bed posturing
- Range of Motion (ROM): Active/Accessory/Physiologic
- Function-based assessment of impairments
 - Lifting, carrying, reaching
- Neurologic screening as indicated
 - Dermatomes
 - Myotomes
 - Reflexes
 - Cranial nerves
- Neurodynamic testing
- Neck-specific special tests, i.e.: Spurling's test, cranial cervical flexion test, deep neck flexor endurance test, cervical flexion-rotation test
- Strength testing
 - Handheld dynamometry (HHD) of cervical and periscapular musculature
 - Consider upper quarter and core if applicable
- Flexibility

TREATMENT RECOMMENDATIONS FOR ALL CATEGORIES OF NECK PAIN

SYMPTOM MODULATION - PAIN CONTROL

- Utilize directional preferences
- Encourage movement / activity vs. inactivity
 - Low impact aerobic activity, i.e.: stationary bike, walking
- Traction: manual/mechanical
- Proprioceptive taping/bracing
- Soft tissue mobilization
- Joint mobilization/manipulation (see Blanpied et al, page A32)
- Cervical isometrics
- Provide education regarding proper posture and activity modification for work, home and leisure activities
- Therapeutic modalities as appropriate
- Dry needling as appropriate
- Consider an ergonomic evaluation

TREATMENT RECOMMENDATIONS BY CATEGORY

Based on evaluative findings, patients are assigned to one or more of the following treatment categories:

NECK PAIN WITH MOBILITY DEFICITS

- Cervical and/or thoracic mobilization/manipulation
- Cervical range of motion
- Selective soft tissue stretching/mobilization

NECK PAIN WITH MOVEMENT COORDINATION IMPAIRMENTS

- Education of the patient to return to normal, non-provocative pre-condition activities as soon as possible
- Minimize use of soft collar
- Cervical isometrics
- Perform postural and mid-range mobility exercises to decrease pain and increase ROM
- Reassure patient that gradual recovery is expected

NECK PAIN WITH HEADACHES

- Cervical and/or thoracic mobilization/manipulation
 - Upper cervical mobility (C1-2-3)
 - Scapular and rib cage mobility
- Selective soft tissue stretching/mobilization

NECK PAIN WITH RADIATING PAIN

- Consider short term use of cervical soft collar in acute stage
- Cervical mobilization to reduce nerve irritation
- Traction: manual/mechanical
- Proprioceptive training with laser (head lamp)
- Selective soft tissue stretching/mobilization
- Nerve flossing techniques (either ipsilateral or contralateral)

CRITERIA FOR ADVANCEMENT

- Independent symptom management
- Symptom improvement

EMPHASIZE

- Importance of being an active participant in recovery process
- Provide posture/activity modifications
- Function-based language to describe symptoms

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Phase 2: Moderate Irritability

Vigor of activity required to provoke symptoms: moderate

Severity of symptoms: moderate

Time for symptoms to subside once aggravated: medium duration

PRECAUTIONS

- Avoid exacerbating recurrent symptoms
- Avoid loading the spine if it results in symptomatic exacerbation/decline in neurological status

ASSESSMENT

- NDI
- FABQ
- NPRS
- Static/Dynamic posture
- Bed posturing
- ROM: Active/Accessory/Physiologic ROM
- Function-based assessment of impairments
 - Lifting, carrying, reaching
- Neurologic screening as indicated
 - Dermatomes
 - Myotomes
 - Reflexes
 - Cranial nerves
- Neurodynamic testing
- Neck-specific special tests, i.e.: Spurling's test, cranial cervical flexion test, deep neck flexor endurance test, cervical flexion-rotation test
- Strength testing
 - HHD of cervical and periscapular musculature
 - Consider upper quarter and core if applicable
- Flexibility

TREATMENT RECOMMENDATIONS: Treat based on impairments and Treatment Based Classification. Pain neuroscience education should be implemented to help patients cope. Low impact aerobic activity can promote hypoalgesia and is recommended for maintenance of cardiovascular fitness.

NECK PAIN WITH MOBILITY DEFICITS

- Cervical and/or thoracic mobilization/manipulation
- Selective soft tissue stretching and mobilization
- Cervical and thoracic range of motion
- Scapulothoracic and UE strengthening
- Neck and periscapular endurance exercises

NECK PAIN WITH MOVEMENT COORDINATION IMPAIRMENTS

- Cervical and/or thoracic mobilization/manipulation
- Proprioception training
- Scapulothoracic and upper extremity (UE) strengthening
- Neck and periscapular endurance exercises

NECK PAIN WITH HEADACHES

- Cervical and/or thoracic mobilization/manipulation
 - Upper cervical mobility (C1-2-3)
 - Scapular and rib cage mobility
- Selective soft tissue stretching/mobilization
- Suboccipital release
- Proprioception training
- Neck and periscapular endurance exercises

NECK PAIN WITH RADIATING PAIN

- Cervical and/or thoracic mobilization/manipulation
- Selective tissue stretching and mobilization
- Mechanical Intermittent Traction
- Proprioception training
- Neck and periscapular endurance exercises
- Nerve glides to tolerance

CRITERIA FOR ADVANCEMENT

- Independent symptom modulation
- No increase in symptoms with progressive activities
- Functional strength and range of motion

EMPHASIZE

- Patient education regarding recurrence rates with acute cervical pain
- Normalize mobility and ADL function
- Symptom modulation through posture control and sequencing in multiple planes

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Phase 3: Low Irritability

Vigor of activity required to provoke symptoms: high

Severity of symptoms: low

Time for symptoms to subside once aggravated: short duration

PRECAUTIONS

- Symptom provocation with high impact/loading activities (i.e. jumping, tumbling, throwing, rapid head movements)

ASSESSMENT

- NDI
- FABQ
- NPRS
- Static/Dynamic posture
- Bed posturing
- ROM: Active/Accessory/Physiologic
- Function based assessment of impairments
 - Lifting, carrying, reaching
- Neurologic screening as indicated
 - Dermatomes
 - Myotomes
 - Reflexes
 - Cranial nerves
- Neurodynamic testing
- Neck-specific special tests, i.e.: Spurling's test, cranial cervical flexion test, deep neck flexor endurance test, cervical flexion-rotation test
- Strength testing
 - HHD of cervical and periscapular musculature
 - Consider upper quarter and core if applicable
- Flexibility

TREATMENT RECOMMENDATIONS

- Phase out manual therapy as appropriate
- Progress cervical and thoracic spine mobility exercises
- Progress proprioception training to incorporate full body coordination
- Dynamic balance activities

- Postural strengthening and endurance activities
 - Head/neck/shoulder relationship
- Begin multi-planar active range of motion spine activities
 - Include overhead UE AROM
 - Thoracic spine
 - PNF patterns
 - Upper extremity neuromuscular control
- Progress UE resistive activities
 - Closed chain UE strengthening, e.g.
 - Full planks, full yoga poses
 - Overhead scapular strengthening
 - Include LE resisted activities
 - Advanced neuromuscular control
 - PNF patterns with resistance or weight
- Plyometric UE/LE training
- Impact training
 - Return to run (if applicable)

CRITERIA FOR DISCHARGE (OR ADVANCEMENT IF RETURNING TO SPORT)

- Independent with progressive home/community-based activity programs
- Adequate strength and neuromuscular control of UE and LE
- ROM WFL
- Minimal to no pain with functional activities
- Independent with ADL's
- Independent symptom management
- **Discharge or move onto Phase 4 if the goal is to return to sport or advanced functional activities**

EMPHASIZE

- Advanced functional mobility
- Graded return to activity / work
- Maximize multi-planar and multi-joint function, neuromuscular control, and sequencing
- Self-monitor signs and symptoms during ADLs and occupational activities

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Phase 4: Return to Sport (if applicable)

CONSIDERATIONS

- Progress exercise gradually

ASSESSMENT

- NDI
- FABQ
- NPRS
- Static/dynamic posture
- Bed posturing
- ROM (Active/Accessory/Physiologic ROM)
- Function based assessment of impairments
 - Lifting, carrying, reaching
 - Sport-specific activities
- Neurologic screening
- Neurodynamic testing
- Neck-specific special testing
- Specific strength testing
 - HHD for cervical and periscapular musculature
 - Include upper quarter and core if applicable
- Flexibility

TREATMENT RECOMMENDATIONS

- Activity specific training
- Sport specific warm up and activities
- High resistance training
- Dynamic neuromuscular re-education
- Agility and coordination drills as necessary for sport
- Multi-planar and rotational movement patterns
- Gradual loading of the spine to meet sport-specific demands
- Abdominal strength to meet sport-specific demands
- Collaborate with ATC, performance coach/strength and conditioning coach, skills coach and/or personal trainer to monitor load and volume with return to sport participation

CRITERIA FOR DISCHARGE

- Full activity participation
- Independent symptom management

EMPHASIZE

- Self-monitoring volume of exercise
- Self-monitoring of load progressions
- Speed and accuracy
- Communication with appropriate Sports Performance expert

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