Whiplash

Whiplash is an acceleration-deceleration mechanism of energy transfer to the neck. It may result from … motor vehicle collisions … The impact may result in bony or soft tissue injuries (whiplash injury), which in turn may lead to a variety of clinical manifestations (Whiplash-Associated Disorders)

New PIAB Form

- Please complete this section where Injury is Neck Pain or Whiplash Associated Disorder
- Assessment of Cervical Spine ROM   Normal   Abnormal
- Palpation for consistent Tenderness   Present   Absent
- Neurological Signs   Present   Absent

New PIAB Form

- Treatment Investigation to date

- The claimant should complete the Neck Disability Index (NDI)
  - NDI Score %

Whiplash Associated Disorder (WAD) Quebec Score

WAD 0	No neck pain or physical signs
WAD 1	Neck Pain – Tenderness only
WAD 2	Neck Pain and MSK signs Limited ROM and Point Tenderness
WAD 3	Neck Pain and Neurological Signs Weakness, Sensory deficits or Reduced or absent reflexes
WAD 4	Neck pain and # or dislocation

WAD Grade (QTF)

- WAD 0
- WAD 1
- WAD 2
- WAD 3
- WAD 4.

- If the claimants WAD Score has changed during the course of the recovery please comment

Indicate the degree to which you feel the claimants symptoms/Disability have been caused by the accident/event which is the subject of this clain

- 1. None of the disability
- 2. A small proportion of the Symptoms/Disability <25%
- 3. A moderate amount of the Symptoms/Disability <50%
- 4. Most of the Symptoms/Disability 75%
- 5. All of the Symptoms/Disability

Whiplash

- Early management of whiplash-associated disorders
- INITIAL ASSESSMENT
- ASSESSMENT History and Physical Examination
- History - DoB, Sex, Education Level
- Circumstances of injury
- Symptoms – Localisation, Time of onset and profile of onset
- Pain (VAS), stiffness, numbness, weakness and extra cx symptoms
- IS AN X-RAY NEEDED? Apply Canadian C-Spine rules

1. Any High-Risk Factor Which Mandates Radiography?

Age ≥ 65 years
or
Dangerous mechanism *
or
Paresthesias in extremities

Yes → Radiography
No ↓

2. Any Low-Risk Factor Which Allows Safe Assessment of Range of Motion?

Simple rear-end motor vehicle collision (MVC) **
or
Sitting position in emergency department
or
Ambulatory at any time
or
Delayed onset of neck pain ***
or
Absence of midline c-spine tenderness

No → Radiography
Yes ↓

3. Able to Actively Rotate Neck?

45 ° left and right

Unable → Radiography
Able ↓

No Radiography

Radiography

Rule Not Applicable if:

- Non-trauma cases
- Glasgow coma Scale < 15
- Unstable vital signs
- Age < 16 years
- Acute paralysis
- Known vertebral disease
- Previous C-spine surgery
- Pregnant

*Dangerous Mechanism

- Fall from elevation ≥ 3 feet or 5 stairs
- Axial load to head, e.g. diving
- MVC high speed (> 100 km/hr), rollover, ejection
- Motorized recreational vehicles
- Bicycle struck or collision

**Simple Rear-end MVC Excludes

- Pushed into oncoming traffic
- Hit by bus or large truck
- Rollover
- Hit by high speed vehicle

***Delayed

- Not immediate onset of neck pain

Developed by the BC Physical Therapy Cervical Spine Rule Advisory Group: Marj Belot, John Howick, Peter Francis, Sarah Hrabi, Carol Kennedy, Melina Kurtakis, Dr. Linda Li, Bill Lyons, Guido Wisotzki, Antonio Zenone, Alison Hoens March 2014 A Physical Therapy Knowledge Broker project supported by: UBC Department of Physical Therapy, Physiotherapy Association of BC, Vancouver Coastal Research Institute, Providence Healthcare Research Institute and Arthritis Research Centre of Canada.

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Initial assessment of Whiplash

Assess WAD Quebec Score

Visual Analogue Scale - >5/10 poor prognosis

Neck Disability Index - >15/20 poor prognosis

Expectations of recovery

“Do you think you are going to get better soon”

Identify patients at low risk of poor recovery

Patients with the following outcome measure scores **ARE AT LOW** risk of poor recovery:

- low disability - NDI score less than 15/50
- low pain - VAS score less than 5/10
- people with a good expectation of recovery

DO NOT provide complex assessments, physical therapy referral or referral to a clinician with expertise in the management of whiplash.

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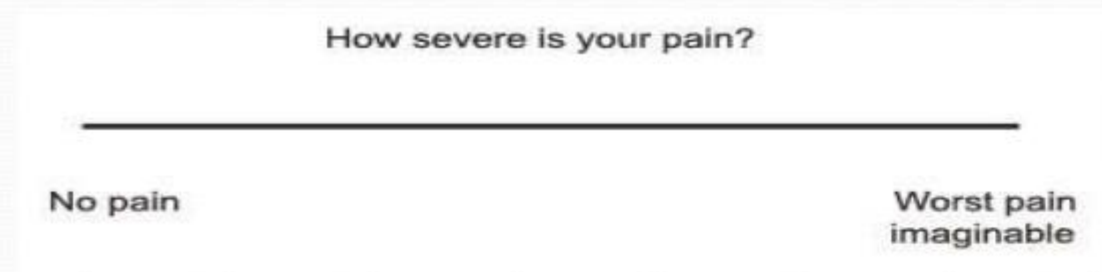
5. The visual analog scale (VAS)

- 10 cm horizontal line

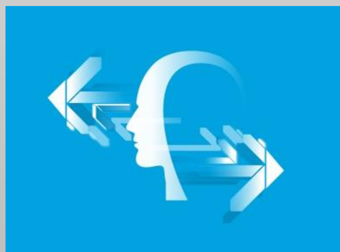


- the distance from no pain to the patient mark indicates the severity of pain numerically
- **Advantage**-simple, efficient , valid, and minimally intrusive
- **Disadvantage**-more time consuming than others & some difficulty in understanding in elderly

Identify patients at risk of poor recovery

RECOMMENDED

At the initial assessment	People at risk of poor recovery
Neck Disability Index (NDI)	NDI score greater than 15/50
Visual Analogue Scale (VAS)	VAS score greater than 5/10
Expectation of recovery	Poor expectation of recovery



Outcome measures are the best way to identify people at risk of poor recovery.

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Initial Management of Whiplash

- Apply recommended treatments Educate and stay active Exercise
- Medication – Analgesia and NSAID (If appropriate)
- No evidence for muscle relaxants
- Practitioners should review patients regularly, at least at the following intervals: 7 days, 3 weeks, 6 weeks, 12 weeks unless resolved earlier.

Provide treatment

RECOMMENDED TREATMENT

ADVICE TO REMAIN ACTIVE

Provide advice to continue usual activities as this will optimise recovery.

Provide advice that restricting or not doing usual activities because of the injury may cause delays in recovery.

Discuss daily activities and provide examples on how to modify, plan and simplify activities to reduce strain on the neck and to keep active.

Refer to the whiplash fact sheet for examples of how to stay active.

REASSURANCE

Acknowledge that the person is injured and has symptoms. Advise that:

- symptoms are a normal reaction to being injured
- maintaining a normal life is important in the recovery process
- it is important to focus on improvements in function.

Encourage the injured person to take an active role in their recovery.
As recovery progresses encourage self management and independence.

Provide treatment

RECOMMENDED TREATMENT

NECK EXERCISES

Provide advice that neck exercises are effective in managing whiplash.

Recommend neck exercises such as range of motion, low load isometric, postural endurance and strengthening exercises.

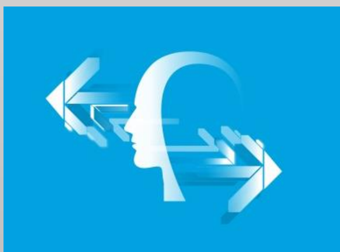
FIRST-LINE PAIN RELIEF

Doctors should discuss strategies and medications for pain relief with the injured person.

Provide advice that regular paracetamol is the first option.

Non-Steroidal Anti-inflammatory Drugs (NSAIDs) may be used if regular paracetomol is ineffective.

Oral opioids, preferably short-acting agents at regular intervals, may be necessary to relieve severe pain. Any ongoing need for these drugs requires regular reassessment.



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ide treatment

NOT RECOMMENDED

- Reduction of usual activities for more than 4 days
- Immobilisation collars
- Pharmacology – anti-convulsants and anti-depressants
- Muscle relaxants
- Botulinum toxin type A
- Intra-articular and intrathecal steroid injections
- Pulsed Electromagnetic Treatment (PEMT)

These treatments SHOULD NOT be used.

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vide treatment

TREATMENTS WITH NO EVIDENCE FOR OR AGAINST THEIR USE

- Traction
- Pilates
- Feldenkrais
- Alexander technique
- Massage
- Homeopathy*
- Cervical pillows
- Magnetic necklaces
- Spray and stretch
- Heat
- Ice
- Transcutaneous Electrical Nerve Stimulation(TENS)
- Electrical stimulation
- Ultrasound
- Laser
- Shortwave diathermy

7 Day Assessment – VAS and NDI

Improving

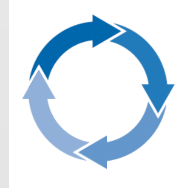
- Continue Recommended Treatments

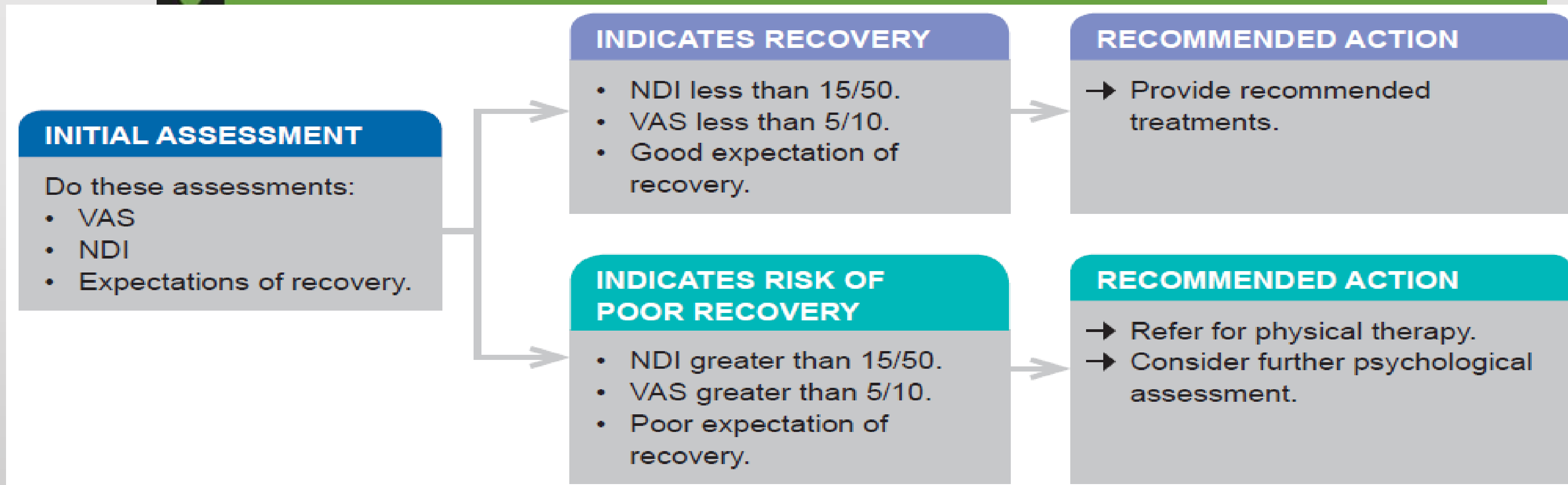
Not Improving

- Consider other recommended tratments

Review and take recommended action

RECOMMENDED





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3 week Assessment

Improving

Continue recommended treatments or if resolved cease treatments

Not Improving

- Consider referral to a clinicaian with expertise in management of WAD

Provide treatment

USE WITH CAUTION AND MONITOR CLOSELY

These physical treatments may be used in conjunction with the recommended treatments

- Manual therapy
- Thoracic manipulation
- Acupuncture
- Kinesiotaping
- Trigger point needling

Monitor closely. Continue ONLY if there is evidence of benefit. At least a 10% improvement on VAS and NDI at each review.

6 weeks

Improving

- Continue recommended treatments or if resolved cease treatments

Not improving

- Referral to specialist with expertise in WAD. Specialist Examination should include Physical and/or psychological assessment

Identify patients at risk of poor recovery

At the 3 or 6 week review	People at risk of poor recovery
Impact of Events Scale (IES)	IES score of more than 25 / 75

Patients with an IES score of greater than 25 (moderate symptoms)

- refer to a psychologist with experience in managing posttraumatic stress symptoms.

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Review and take recommended action

12 WEEKS POST INJURY

Do these assessments:
- VAS
- NDI
- IES.

INDICATES RECOVERY

- Improvement of 10% on NDI and VAS.

RECOMMENDED ACTION

→ Gradually withdraw treatment and focus on interventions which require active participation and independence.

INDICATES RISK OF POOR RECOVERY

- VAS and NDI scores are high or unchanged.
- IES higher than 25.

RECOMMENDED ACTION

→ Follow recommendation from specialist.
→ Refer for coordinated multidisciplinary care.
→ Follow the NHMRC chronic whiplash pathway.

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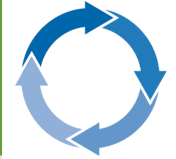
Review and take recommended action

RECOMMENDED



3 WEEKS POST INJURY

Do these assessments:
- VAS
- NDI

Where the patient has unchanged VAS and NDI, do this assessment:
- IES - screen for posttraumatic stress.

INDICATES RECOVERY

- Improvement of 10% on NDI and VAS.

RECOMMENDED ACTION

→ Continue recommended treatments.

INDICATES RISK OF POOR RECOVERY

- VAS and NDI scores are high or unchanged.
- IES higher than 25.

RECOMMENDED ACTION

→ Conduct a more comprehensive physical and psychological examination.

→ Consider referral to a clinician with expertise in whiplash management.

→ Refer to psychologist for:
- adjustment difficulties
- management of pain, and/or
- posttraumatic stress management.

WAD and MRI

WAD 1 and WAD 2

- MRI has no role

WAD 3

- MRI might be used

MRI and Back Pain

Results of MRI in those without back pain.

The presence of radiological findings in whiplash injury is NOT predictive of poor recovery

If you take people without back pain and put them through a CT scan or MRI, you get some surprising results.

37% of 20 year olds	30% of 20 year olds
80% of 50 year olds	60% of 50 year olds
96% of 80 year olds	84% of 80 year olds
Have "disc degeneration"	Have "disc bulging"

It turns out that some of these changes are

Predictive of poor recovery

- Symptoms

- Higher initial neck pain levels – Ongoing Pain/Disability/Psychological
  Work Disability

  Higher initial disability - Ongoing disability

  Self Perceived injury Severity

Predictive of poor recovery

- Psychological

- PTSD Symptoms
- Negative expectation of recovery
- Somatisation
- Depression
- Pain Catastrophising

Predictive of poor recovery

- Physical Examination

  Cervical Range of Movement

Identify patients at low risk of poor recovery

These factors **DO NOT** predict risk of poor recovery

- age, gender, marital status and education
- seat belt use, awareness of impending collision, position in vehicle and speed of collision
- pre-collision pain or general health status
- high healthcare utilisation for treatment of whiplash.
- Shoulder pain
- Radiological findings

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an examination

NOT RECOMMENDED

- MRI, CT, EEG, EMG, or specialised peripheral neurological test for WAD I and WAD II
- X-ray or CT - except to diagnose fracture or dislocation (avoid unnecessary exposure to radiation)

Visit our website for whiplash videos and other resources to help you recover.

Recovery advice

Staying active

Neck exercises

sira.nsw.gov.au/injuryadvicecentre

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