



Orthopaedic Division

CANADIAN PHYSIOTHERAPY ASSOCIATION

Division d'orthopédie

ASSOCIATION CANADIENNE DE PHYSIOTHÉRAPIE

Level 4, 5 & Advanced Exam Case History Exam Objective Booklet

Questions to be completed following the ***Objective*** Examination

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1. Provide your main hypothesis for this patient's clinical picture. Outline in detail your rationale and justification for this hypothesis with consideration of the evidence from both the subjective and objective examination. (10 marks)

Once the objective examination is completed, the candidate should have a working hypothesis from which to formulate the treatment plan.

A good answer should articulate a concise but informative hypothesis that accounts for the most relevant subjective and objective findings. The candidate must demonstrate logical relationships between these subjective and objective data in light of the main hypothesis described. If the 3 areas of pain have a relationship with each other, this should be addressed in the answer.

The detailed rationale must include justification points from both the original subjective data along with the objective findings and explain why these support the developed hypothesis. Negating factors that assisted in ruling out other plausible hypotheses could also be used to support this final hypothesis. The main hypothesis may incorporate more than one of the previously stated hypotheses as long as it is substantiated by the subjective data and objective findings. For example: neck referral and shoulder impingement for an upper quadrant case; lumbar spine / SIJ and hip involvement and how they relate for a lower quadrant case.

2. State your predictive outcome, including timelines, for this patient and provide your rationale (prognostic indicators). (3 marks)

(3 marks)

A good answer will include prognostic indicators from both the subjective and objective data that have positive and negative consequences on the patient's overall prognosis. Examples of relevant data may include, but are not limited to the following:

- Patient's perspectives and expectations
- Patient's social, occupational, and economic status
- The mechanisms of symptoms involved
- The balance of mechanical versus inflammatory components
- The degree of damage/impairment
- The length of history and progression of the disorder
- The patient's general health and presence of pre-existing disorders
- Psychosocial risk factors

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An acceptable answer will include a description of anticipated timelines and sound rationale that reflect the nature and extent of the prognostic indicators listed by the candidate. For example, candidates may comment on the extent to which a particular factor influencing the patient's pain presentation, the presence of psychosocial factors, and patient's perspectives and expectations are exerting an influence on the patient's presentation. When describing appropriate timelines, the candidate should consider and articulate the expected length of time for recovery, percentage of recovery anticipated and if residual findings are expected.

3. At this point, with respect to this particular patient, are there any medical diagnostic tests that would be indicated (either now or later) or the need to refer to another health care professional? Give your rationale. (2 marks)

A good answer will reflect the candidate's ability to recognize the need for immediate referral (e.g., an x-ray to rule out a suspected fracture, a brace or splint, a custom fitted cervical collar, other medical investigations DVT – Doppler). There may be no indication for immediate referral of any sort and this should be stated.

The answer may include plausible future referral needs such as:

- *Imaging or blood work if the patient is not responding to physical treatment*
- *Referral to a medical practitioner for further consultation in the even of worsening or unresponsive to treatment*
- *Referral for orthoses to maximize function and control symptoms*
- *Referral for ergonomic assistance for return to work*
- *Referral to a clinical specialist e.g., pelvic incontinence therapist/women's health*
- *Referral to a psychologist or other health care professional e.g., dentist*

The answer must include the rationale for the choice of tests or referrals.

The intent of this question is to assess the candidate's ability to recognize dysfunction(s) requiring immediate or future referral for medical diagnostic test(s) and/or to another healthcare professional and the ability to articulate the rationale for immediate or future referrals.

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4. For this patient, give 2 of the most relevant physical impairments. Relate an activity limitation and participation restriction to each of the impairments. Then indicate an outcome measurement you would choose to monitor change and provide your rationale. An outcome measure already presented in the case cannot be used in this answer. (4 marks)

Physical impairment 1: Decreased range of hip flexion

Activity limitation for physical impairment 1: Difficulty squatting

Participation restriction for physical impairment 1: Difficulty cycling for more than 10 kilometers

Outcome measurement for physical impairment 1: Lower Extremity Functional Scale (LEFS)

Rationale for outcome measurement for physical impairment 1: Measures functional impairment – questions are related to a person's ability to perform activities at home, work, school, recreation and sport; good reliability; appropriate for hip OA

A good answer will demonstrate the candidate's ability to link the constructs in the ICF biopsychosocial framework in a logical manner; how do the physical impairments identified relate to the activity limitations and participation restrictions. Candidates may find it helpful to start with the participation restriction, work back to the left of the chart and then choose their outcome measure with rationale.

Physical Impairments are the specific regional neuromusculoskeletal dysfunctions found through physical examination including impairments in posture, active and passive movement, myofascial (length or strength), neurodynamics and motor control/strength/etc. Physical impairments may be symptomatic and directly associated with the source of the patient's symptoms or asymptomatic but still contributing to the patient's presentation by altering stress/load elsewhere causing other structures to be symptomatic. (Jones 2014). For example, decreased hip flexion.

Activity Limitations are **difficulties an individual may have executing tasks or activities**. Examples could be an inability to squat, maintaining a sustained sitting position, bending, lifting, and ascending/descending stairs.

Participation Restrictions are **problems an individual may experience in involvement in life situations**. Issues related to limited or lack of participation in educational/religious/work/social activities. Examples could include recreation and leisure activities, community life, inability to garden, limited exercise program, limited work tolerance.

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The candidate must also choose an appropriate outcome measure and provide the rationale for their choice. The outcome measures should be relevant and applicable for the physical impairments, activity limitations and/or participation restrictions listed by the candidate for this particular case presentation. It can be a self-report questionnaire e.g. Lower Extremity Functional Scale (LEFS) or a client specific impairment measure e.g. weight-bearing squat, hip passive range of motion. They can be region specific or generic. Pain scales (i.e. Numerical Pain Rating Scale) or other outcome measures that have already been reported for this case should not be included in this answer.

Jones MA. Clinical reasoning: From the Maitland Concept and beyond. in Maitland's Vertebral Manipulation. Management of Neuromusculoskeletal Disorders Volume 1 2013 Churchill Livingstone

5. Indicate your PRIMARY FUNCTIONAL GOAL as it relates to the Activity Limitations and Participation Restrictions. Select 4 of the most relevant problems related to the primary functional goal you have identified. For each problem, include your treatment goal and the testing criteria you would use to monitor change. (6 marks)

In this first part of the question, we are assessing the candidate's ability to describe a primary functional goal in relation to the nature and extent of the patient's activity limitations and participation restrictions (based on the International Classification of Function – ICF Framework). It is important for the candidate to consider the patient's perspective (e.g. their reported activity limitations and participation restrictions) in formulating this goal and to reflect beyond the body structures and impairment construct in the ICF framework, remembering that clinical reasoning is a collaborative process between therapist and patient. (Jones 2014)

PRIMARY FUNCTIONAL GOAL:

The primary functional goal should be detailed and include the activity limitation or participation restriction with set parameters (timelines, measurement criteria). It should also be realistic and achievable for the particular case.

Examples:

To be able to return to computer work pain-free for 3 hours within 2 months.

To improve sitting tolerance to be able to work pain-free for 4 hours within 3 months.

To be able to cycle 10 kilometers without pain within 2 months.

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PROBLEMS:

*The second part of this question is assessing the candidate's ability to select **4** of the most relevant **problems (impairments)** that are of high priority for this patient given the primary functional goal stated above and to select the most pertinent testing criteria related to these impairments. This portion of the question assesses the candidate's ability to select the most appropriate method(s) of evaluating patient outcomes (test criteria) and their ability to predict expected changes in the patient's participation restrictions, activity limitations and/or physical impairments. As such, the **treatment goals** should be described using the SMART format – specific, measurable, achievable, realistic and time-based. Under the **testing criteria** the candidates should list one or more objective measure that the candidate feels is/are the most relevant testing criteria for the stated impairments (e.g. ROM measure, functional test, strength, endurance test, outcome measure).*

Examples:

PROBLEM #1 *decreased strength and endurance of the biceps brachii muscle*

Treatment Goal:

The patient will be able to achieve a grade 5 on manual muscle testing of the biceps brachii within 6-8 weeks without compensation strategies.

Testing Criteria:

Manual muscle testing / functional movements – lifting groceries.

PROBLEM #2 *poor scapular motor control with overhead activities*

Treatment Goal:

The patient will be able to control scapular position with the arm overhead under low loads in 4-6 weeks.

Testing Criteria:

*External rotation load test at 90 degrees abduction
Observation of scapular control on flexion load testing*

6. Outline in detail the management strategies you would use over the first two treatments under the following headings:

- i) manual therapy,**
- ii) exercise,**

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iii) education and

iv) other.

Include your rationale for each component of the treatment. (10 marks)

*A good answer considers the subjective findings (irritability, severity) and the objective findings (direction, end feel) along with the hypothesis given (mostly neck, mostly shoulder...) to develop the most appropriate initial treatment plan. 'Over the first 2 treatments allows the candidate to address their treatment priorities without over treating at the first visit. **It is not meant to encourage the answer to be broken down into a 'Day 1' and a 'Day 2', instead to outline the main problems that need to be addressed first.***

*For **manual therapy**, the specific joint, the technique, direction, grade, oscillation vs sustained, position (neutral, into range), dosage should all be included to demonstrate the clinical reasoning and rationale involved in the choices of manual therapy. Would include passive & active mobilizations, MWM, soft tissue techniques, muscle lengthening, traction...*

****Just listing the treatment parameters is insufficient. The candidate must defend why each parameter was chosen.*

For example: Maitland Grade 3 posterior glide of the humerus at the GH joint with the arm in 30 degrees of internal rotation (pain free position) for 2 minutes. Rationale: The posterior glide was found to be decreased on passive accessory mobility testing with a capsular end feel, which could be a contributing factor to the impingement. As it is early in the treatment and the shoulder is moderately irritable, with pain and resistance, a grade 3 in mid range was chosen and if well tolerated could be moved further into the resistance. As this is a chronic condition, 2 minutes will be required before a change is perceptible.

*For **exercise prescription**, be specific enough that the reader can grasp the exercise being chosen, but a complete detailed description of each exercise is not required. Dosage would be required, at a minimum as generalized concepts (e.g. – different dosages for goals of recruitment vs. strength vs. endurance).*

****Just listing the exercise parameters is insufficient. The candidate must defend why each parameter was chosen.*

For example: Correction of scapular alignment by activating lower fibres of trapezius (LFT). Hold 10 secs. Repeat 3 times every hour at least but can be performed more frequently during activities of daily living (ADLs). Rationale: Scapula is resting in downward rotation and LFT tested weak and lengthened. Proper scapular alignment is required before resisted arm exercises are started. 10 sec hold, as endurance is required of this postural muscle. As a new motor pattern needs to be developed using

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LFT, the more frequent the contraction the better but only at the activation level initially.

Education should reflect the most important factors from the subjective and objective examination that need to be addressed early.

****Just listing the educational advice is insufficient. The candidate must defend why each piece of advice was chosen.*

For example: Avoid overhead activities. Rationale: Until proper motor patterning is achieved overhead activities will continue to impinge the irritable structures.

Other could include modalities, ice, taping if appropriate. Once again, only treatments with brief rationale as to why they were chosen will be considered when marking. Clinical reasoning must be demonstrated.

7. Using the biopsychosocial framework, outline in detail your progression of subsequent treatments to discharge addressing all the identified problems and provide your rationale to return to their optimal functional level. Use the following headings:

- i) manual therapy,
- ii) exercise,
- iii) education, and
- iv) other

Include your rationale for each component of the treatment. (10 marks)

A complete and effective answer will demonstrate a logical progression of the treatment plan to address all the components found in the objective examination, while also considering the patient's activity limitations and participation restrictions.

Manual therapy may be progressed through dosage, grade, position, as well as technique and must also eventually address all areas found to have positive findings in the objective exam. The rationale for the change in parameters for techniques must be given for a treatment to be considered for marking.

The **exercise** section should show progressions of the exercises and addition of further exercise to again address all the areas of involvement and include consideration of returning the patient to their usual activities for work and/or play i.e. individualized exercise prescription based on the patients ADLs and goals. A brief rationale must be

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given as to why each exercise was chosen including its dosage.

Education must cover all components likely to be important for remediation and prevention of recurrence of this patient's problem— ergonomics, prevention, long-term prognosis and management strategies...

There may be some additional management that does not easily fall under the above categories, which could be developed under the 'other' heading.

8. What 3 key terms would you enter into one search on PubMed to inquire about the evidence related to your assessment or management of this patient? Provide your rationale.

The general structure of a search includes key terms or words related to the population, the intervention, the diagnostic test, a comparator and the outcome. A good answer would include key words that would facilitate a search on PubMed to produce articles related to your clinical question that would be useful for your assessment or management of this patient.

Examples:

Key term 1- adults with mechanical neck pain

Key term 2 - manual therapy/exercise

Key term 3 – pain and function

Rationale: to determine the effectiveness of the two treatment interventions and which lead to the best outcome

Key term 1 – adults with low back pain

Key term 2 - manipulation, mobilization

Key term 3 – pain and disability

Rationale: to be able to provide the client with the evidence supporting manipulation of the low back and its effectiveness

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Key term 1 - lateral elbow pain

Key term 2 - Mobilizations with Movement (MWMs)/cortisone injection

Key term 3 - pain and disability

Rationale: My patient has inquired as to whether a cortisone injection would be useful, so this would provide me with the evidence to support physical therapy interventions

Key term 1 – adults with cervical radiculopathy

Key term 2 – diagnostic test

Key term 3 – accuracy, specificity, sensitivity

Rationale: to determine which test or cluster of tests is the most accurate in diagnosing cervical radiculopathy

Key term 1 – cervical arterial dysfunction

Key term 2 – risk factors

Key term 3 – manual therapy

Rationale: to determine the risk factors associated with CAD and if these factors apply to my client