



PDHPE
HSC Enrichment Day
2011
Option 3

Sports Medicine

Syllabus Focus Area

Rehabilitation Process

From the Syllabus:

Learn About:	Learn To:
<ul style="list-style-type: none">rehabilitation procedures<ul style="list-style-type: none">– progressive mobilisation– graduated exercise (stretching, conditioning, total body fitness)– training– use of heat and cold	<ul style="list-style-type: none">examine and justify rehabilitation procedures used for a range of specific injuries, eg hamstring tear, shoulder dislocation

Introduction
Slide 2

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HSC Sample Question

Justify the rehabilitation procedures necessary for an athlete with an ankle injury.
(12 Marks)

Activity 1

Activity 1:

Example HSC Question (12 marks)

Justify the rehabilitation procedures necessary for an athlete with an ankle injury.

Breakdown the Question

Read the question and identify how many marks it is worth

Marks allocated =

Circle the HSC verb/s that tells you HOW to answer the question.

What does each HSC verb require you to do to answer this question?

Underline the syllabus area/s in the question.

List the key areas of the syllabus to address when answering this question

Highlight any other words in the question that need to be addressed

Identify the links or relationships between syllabus content areas that need to be addressed

Re-write the question in your own words

The more you practice the above steps the less you will need to do this step

Draw Up a Plan/Mind Map

Prepare a plan/mind map of points to include in your response. Use lines or arrows to make links between the concepts in your response.

Progressive Mobilisation

Slide 3

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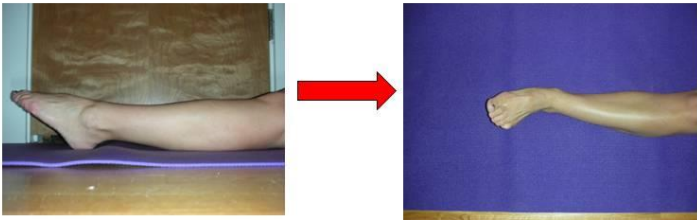
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Progressive Mobilisation

Define – Progressive Mobilisation involves performing movements that gradually increase over time to work the injured joint through an increased range of motion

Ankle Injury Example:



<http://physicaltherapy.about.com>

<http://physicaltherapy.about.com>

? Activity 2





Activity 2:

What is Progressive Mobilisation?

Outline the role of progressive mobilisation in the rehabilitation process?


Use of Heat and Cold

Slide 4

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Use of Heat v Cold

	Characteristics and Features	How it will assist athlete
Cold	<ul style="list-style-type: none">- used in first 48-72 hours after injury- apply via ice packs, sprays (don't place ice directly onto skin)- can also be used after training and competition once returned to play	
Heat	<ul style="list-style-type: none">- used after swelling goes down (typically after 48-72 hours)- Apply via heat packs, ultrasound	

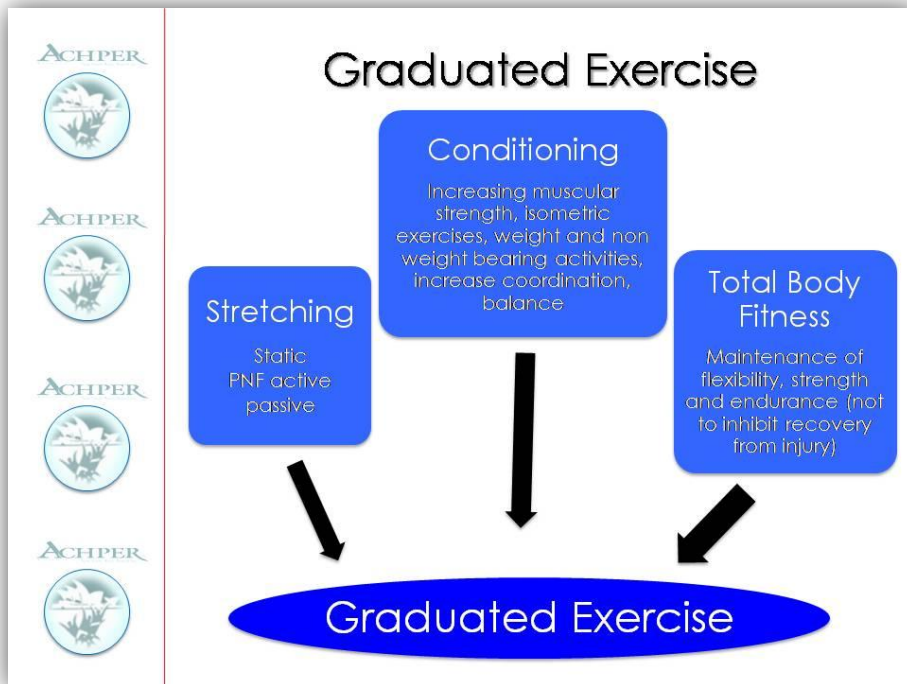
 Activity 3

Activity 3:

	Characteristics and Features	How it will assist athlete
Cold		
Heat		

Graduated Exercise

Slide 5



Activity 4:

Graduated Exercise	Justification of use in Rehabilitation procedure	Application to Ankle injury (Examples)
Stretching		
Conditioning		
Total Body Fitness		

Justification of Graduated Exercise
Slide 6


Justification of Graduated Exercise			
ACHPER	Graduated Exercise	Justification of use in rehab procedures	Application to ankle injury
ACHPER	Stretching		
ACHPER	Conditioning		
ACHPER	Total Body Fitness		

Training
Slide 7

Training

- Promotes the return to specific competitive movement patterns (pain free)
- Re establish skills for competition physically and psychologically

Insert video
<http://www.youtube.com/watch?v=p8g7UeSw95A>

 Activity 5





Activity 5:

View video – Ankle training for Basketball

<http://www.youtube.com/watch?v=p8g7UeSw95A&feature=fwrel>


Why is returning to training so important in the rehabilitation process?

Writing Your Response Slide 8

Writing Your Response

Marks	Criteria
10-12	Demonstrates a thorough knowledge and understanding of health and physical activity concepts relevant to the question Provides clear arguments/conclusions(s) regarding the use of necessary rehabilitation procedures for an ankle injury Illustrates response using relevant examples Presents ideas in a logical and cohesive manner
7-9	Demonstrates a sound knowledge and understanding of health and physical activity concepts relevant to the question Describes the rehabilitation procedures for an ankle injury Uses relevant examples Presents ideas clearly
4-6	Sketches in general terms rehabilitation procedures OR Provides examples of a ankle rehabilitation program
1-3	Identifies rehabilitation procedures

 Activity 6

Take Home Activities

Additional Revision Questions

1. Analyse the rehabilitation procedures for an athlete with a shoulder dislocation (12 marks)
2. Outline the indicators of readiness for return to play following injury (4 marks)
3. Discuss how skill and physical tests can be used to indicate readiness to (6 marks)
return to play
4. Examine the ethical considerations for athletes playing with injuries (6 Marks)
Evaluate the policies and procedures that regulate the timing of return to (8 Marks)
play for athletes

Supplementary Material

Sports Medicine Australia. www.sma.org.au

Australian Sports Commission www.ausport.com.au

Smart play www.smartplay.com.au

<http://www.smartplay.com.au/Content/Pub/ContentMenuDetail.asp?lngContentMenuID=2&Cat=38>

Appendix 1:

HSC Paper Section 2 Rubric

Section II

In your answers you will be assessed on how well you:

- demonstrate knowledge and understanding of health and physical activity concepts relevant to the question
- apply the skills of critical thinking and analysis
- communicate ideas and information using relevant examples
present a logical and cohesive response

Appendix 2:

Example exercise Rehabilitation program for a Kite boarder

Source -

http://www.kiteboardingexercises.com/index.php?option=com_content&view=article&id=80&Itemid=89

Ankle Flexibility Exercises As soon as you can tolerate movement in the ankle joint and swelling has stopped, you can begin gentle stretching and range of motion exercises of the ankle joint.

- Towel Stretch
- Standing Calf Stretch
- Standing Achilles / Soleus Stretch

Ankle Range of Motion Exercises

- Toe Circles. Move your ankle through its entire range of motion (up and down, in and out, and in circles). Move only the ankle and not the leg.
- Alphabet Exercise. With your leg extended, try to write the alphabet in the air with your toes.
- Ankle Strengthening Exercises. Once you have good range of motion, joint swelling is controlled and pain is managed, you may begin strengthening exercises.
- Step Ups. Begin on a short step and slowly step up in a controlled manner while focusing on contracting the muscles of the foot, ankle and leg. Turn around and slowly step down in the same manner. Repeat 20 times several times per day.
- Towel Curl. While seated and bare foot, place a small towel on a smooth surface in **front** of you. Grab the towel with your toes. Keep your heel on the ground and curl your toes to scrunch the towel as you bring it toward you. Let go and repeat until you've moved the towel to you. Repeat the action in reverse to push the towel away from you.
- Isometric Exercises. Gently push against an immovable object in four directions of ankle movement -- up, down, inward, outward. Hold 5 seconds and repeat 10 times, several times a day.
- Tubing Exercises. Use elastic tubing to create gentle resistance as you move through a full range of motion. Wrap the elastic band around the ball of the injured foot and resist the band as you move your ankle up, down, inward and outward. These exercises incorporate the four movements of the foot: inversion, eversion, plantar flexion and dorsiflexion. Perform 3 sets of 15 repetitions for each movement.
- Toe Raises. Stand with your heel over the edge of a step. Raise up on the ball of your foot, hold for 3 seconds and slowly lower your heel to the start position. Repeat 20 repetitions several times a day.
- Heel and Toe Walking. Walk on your toes for 30 seconds. Switch and walk on your heels for 30 seconds. Build up to one minute on toes and heel alternate for 5 to 10 minutes. Perform several times per day.

Ankle Balance / **Proprioception** Exercises (prehab)

After you are able to place your full weight on the injured ankle without pain, you may begin proprioceptive training to regain balance and control of the ankle joint.

- One-leg Balance. Try to stand on one leg for 10 to 30 seconds. Increase the intensity by doing this with your eyes closed.
- One-leg Squat
- Balance Board Ball Toss. While balancing on a wobble board, balance board, or Bosu Ball, catch and toss a small (5 pound) medicine ball with a partner.
- Balance Board with Half-squats. While balancing on a wobble board, perform 10 slow, controlled half-squats.
- Step up onto Balance Board. Place a balance board (or soft pillow or foam pad) 6 to 8 inches higher than your starting point. Step up 10 times.
- Step down onto Balance Board. Place a balance board (or soft pillow or foam pad) 6 to 8 inches lower than your starting point. Step down 10 times.
- One-Leg Squat and Reach
- Jump to Bosu Ball or balance board - See the movies section

Ankle **Agility** / **Plyometric** Exercises

- Lateral Step Up and Down. Step up to a step of bench, sideways and then step down sideways.

Plyometric Exercises:

- Single Leg Hops
- Hop forward and concentrate on "sticking" the landing.
- Single Leg Spot Jumps
- Hop from spot to spot on floor.
- Reactive Spot Jumps
- Place numbered pieces of tape on floor and as a partner calls out a number, hop to that number.