Module 1: The Effects of Exercise On The Body

1. Identify the effect of exercise on the body
2. Understand the long term adaptations of
3. Understand the short term effects of
4. Identify smart programming options for
5. Complete the Cheat Sheet
Work through this cheat sheet alongside the video to supercharge your knowledge and confidence

**List the long term cardiovascular benefits of exercise**

The arrows show whether the adaptations increasing or decreasing, you just need to fill in the detail of the adaptations that happen in this area.

<table>
<thead>
<tr>
<th>Lungs</th>
<th>↑  ↑</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart</td>
<td>↓  ↑  ↑</td>
</tr>
<tr>
<td>Blood Vessels</td>
<td>↑  ↑  ↑  →  ↓  ↓</td>
</tr>
</tbody>
</table>

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List the long term musculoskeletal benefits of exercise

The detail of the adaptations is stated below, you just need to place an arrow next to each to show whether it increases or decreases.

<table>
<thead>
<tr>
<th>Skeleton</th>
<th>Bone Density (weight bearing)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Joint Stability</td>
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<td></td>
<td>Joint Mobility and ROM</td>
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<tr>
<td></td>
<td>Connective Tissue Strength</td>
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<tr>
<td>Muscles</td>
<td>Muscle hypertrophy (size)</td>
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<tr>
<td></td>
<td>Neuromuscular connection</td>
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<tr>
<td></td>
<td>Muscles mitochondria</td>
</tr>
<tr>
<td></td>
<td>Resting metabolic rate</td>
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<tr>
<td></td>
<td>Body fat</td>
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<tr>
<td>Posture</td>
<td>Posture</td>
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<tr>
<td></td>
<td>Core stability</td>
</tr>
<tr>
<td></td>
<td>Coordination and balance</td>
</tr>
<tr>
<td></td>
<td>Risk of injury</td>
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</tbody>
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Quiz Questions:

1. State two ways the lungs react differently during exercise (short term adaptations):

2. State two ways the heart changes during exercise (short term adaptations):
3. State two ways the blood vessels change during exercise (short term adaptations):

4. When is Blood Pooling most likely?
   A – When you cool down slowly
   B – When you stop exercising suddenly with no cool down
   C – When sitting down for long times
   D – If you cross your legs

5. During exercise does the muscle increase or decrease in temperature?

6. Generally speaking, what happens to the core activation during exercise, compared to at rest.

7. Which of the following is a short term musculoskeletal adaptation to exercise:
   A = Joints get stiff and reduce Range of Motion
   B = Secretion of synovial fluid increases, lubricating joints
   C = Muscles relax
   D = The skin reduces in temperature

8. What does DOMS stand for?
   ________________________________
9. Complete the five landmarks that signal a neutral posture, as seen from the side:

Ankle, _______, _______, _______, _______, _______.

10. Based on a client that is sedentary and sits for most of the day, organise the following into a list of “usually tight” and “usually weak/inactive” muscles;

*Chest, Gluteals, Mid traps, Hamstrings, Hip Flexors, Core, Low Back*

11. Which of the following would be the MOST suitable for someone wanting to improve their posture:
   A = Walking
   B = Spinning Class
   C = 100 Press Ups every day
   D = 100 Sit Ups every day

12. A long term effect of cardiovascular training would be:
   A = Increased blood pooling
   B = Increased resting Heart Rate
   C = Decreased blood Pressure
   D = Decreased Mitochondria
13. For how long are you most likely to experience delayed onset muscle soreness (DOMS)?

A = 5 hours after training
B = 5 days after training
C = 75-100 hours after training
D = 12-72 hours after training

14. What is a common side effect of blood pooling?

A = Dizziness and Feinting
B = Hypertension (high blood pressure)
C = Hyperglycaemia (high blood sugars)
D = Diarrhoea
Answers:

Long Term Cardiovascular adaptations:
• ↑ Lung CAPACITY
• ↑ Gaseous Exchange
• ↓ Resting Heart Rate
• ↑ Stroke Volume
• ↑ Cardiac Output
• ↑ Blood volume
• ↑ Red blood cells
• ↑ Capillarisation
• ↑ Blood lipid profile
• →↓ Blood pressure
• ↓ Risk of CHD
• ↓ High Cholesterol

Long Term Musculoskeletal adaptations:
• ↑ Bone Density (weight bearing)
• ↑ Joint Stability
• ↑ Joint Mobility and ROM
• ↑ Connective Tissue Strength
• ↑ Muscle hypertrophy (size)
• ↑ Neuromuscular connection
• ↑ Muscles mitochondria
• ↑ Resting metabolic rate
• ↓ Body fat
• ↑ Posture
• ↑ Core stability
• ↑ Coordination and balance
• ↓ Risk of injury
Quiz Questions
1 = ↑ Breathing Rate, ↑ Oxygen Uptake
2 = (any two of) ↑ Heart Rate, ↑ Stroke Volume, ↑ Cardiac Output
4 = B,
5 = increase in temperature/ get warmer
6 = Increased Core Activation
7 = B,
8 = Delayed Onset Muscle Soreness
9 = Ankle, Knee, Hip, Shoulder, Ear
10 = Usually Tight : Chest, Hip flexor, Hamstring, low Back Usually weak/inactive: Upper Traps, Core, Gluteals
11 = A,
12 = C,
13 = D,
14 = A,