



Revision Series 2023

CIE IGCSE Physical Education
(0995 and 0413/12)

◆ Notes pages ◆



The EverLearner

How to use this revision session and notes

- Complete this document when doing the live or on-demand revision shows.
- Have the National Mock Exam to hand and, ideally, your completed, marked version of it.
- Have the [exam infographics](#) to hand. These will be referred to throughout the show.
- Focus on the skills that James is presenting as much as the content. In most cases, students have a knowledge of the topic but struggle to respond to the command in the question. This is a focus of our revision.
- Complete the notes spaces as extensively as possible and, if necessary, return to the show to complete it more than once in order to make the fullest notes possible.

My ticklist:

- Notes pages
- Exam infographics
- Exam paper
- Exam mark scheme
- Exam model answers

Performer profiles

Use these performer profiles when making examples and developing your A02 skill. The list is not exhaustive and you are encouraged to use your own examples as well as these ones.



Josh

Basic Details
Age: 19
Sport: 100m Sprint
Level: Olympic Podium Potential



Tom

Basic Details
Age: 43
Sport: Tennis (singles and doubles)
Level: Novice



Kate

Basic Details
Age: 17
Sport: Triathlon
Level: Club



Laura

Basic Details
Age: 15
Sport: Gymnastics (Artistic)
Level: National



Julie

Basic Details
Age: 26
Sport: Netball (GD, GK)
Level: Semi-professional/National



Carlos

Basic Details
Age: 35
Sport: Wheelchair basketball
Level: Ex-national team

Material covered in the National Mock Exam

→ Green denotes content to be covered in this session.

→ Yellow denotes skills that will be covered in the session and that are also covered in the mock exam and model answers.

1 Applied anatomy & physiology

- Joint types
- Movement types
- Location and role of muscles
- Antagonistic muscle action
- Heart structure and function
- Cardiac volumes
- Aerobic and anaerobic respiration
- Principles of force
- Levers

2 Health, fitness & well-being

- Social health and well-being
- Diet and energy sources
- Components of fitness
- Test protocols

- Methods of training
- High altitude training

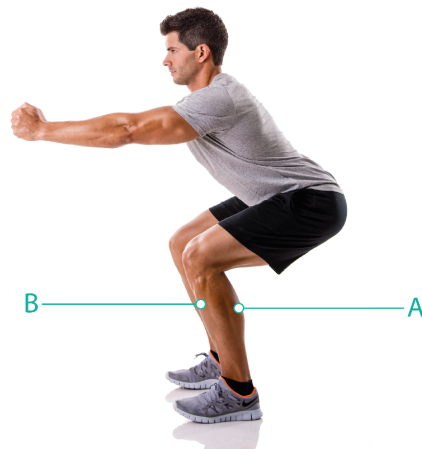
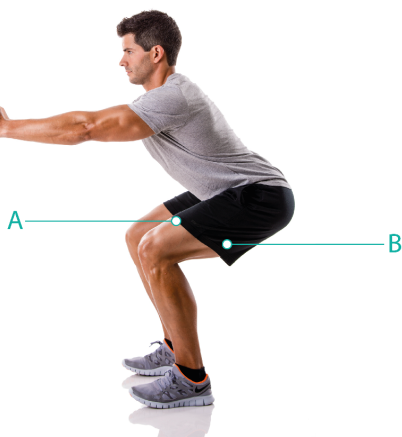
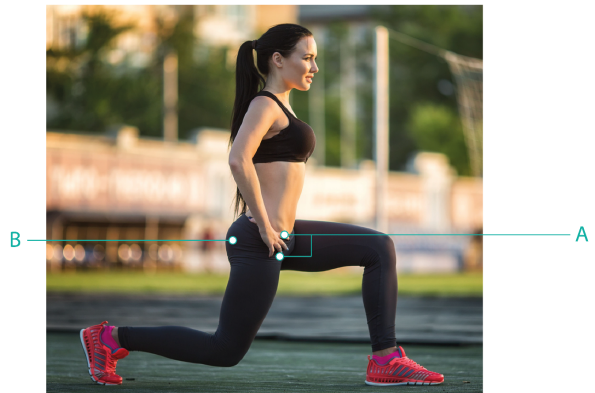
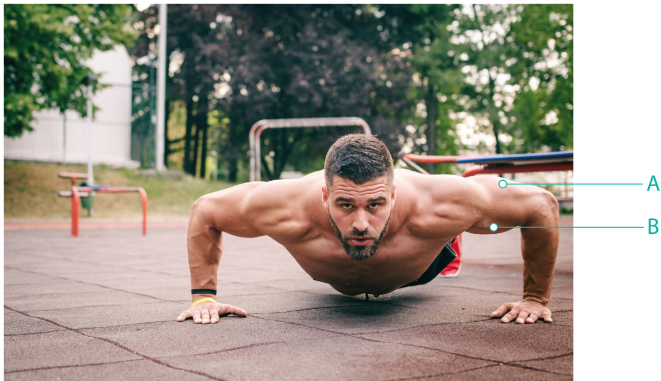
3 Skill Acquisition & psychology

- Skill classification continua
- Guidance
- Goal setting
- Personality types

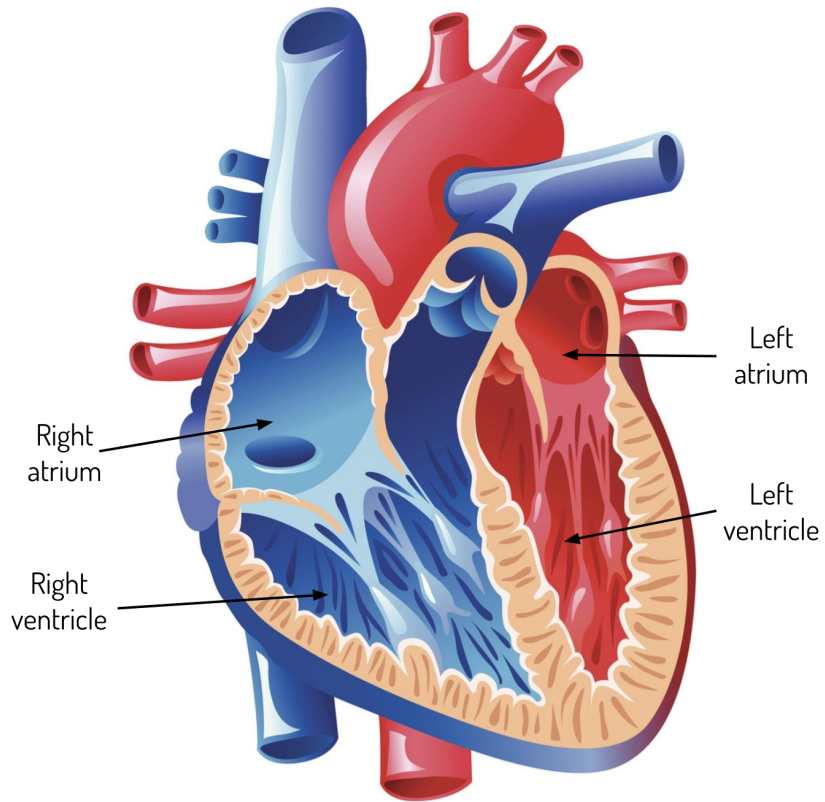
4 Social, cultural & ethical influences

- Leisure and recreation
- Sports development pyramid
- Media
- Disadvantages of PEDS
- Blood doping
- Risk assessment
- Injuries

Section 1: Antagonistic muscle action



Section 2: Heart structure & function



Notes

Chamber	Role
Atria	Upper chambers
	Receive blood
Ventricles	Lower chambers
	Eject blood

Notes

Notes

Type	Blood vessel	Description
Artery	Aorta	Exits left ventricle
		Robust/Strong/Elastic
		High pressure blood
		Oxygenated
		Carries blood to the whole body
Vein	Pulmonary artery	Exits right ventricle
		Deoxygenated
		Carries blood to the lungs
Vein	Vena cava	Inferior and superior
		Pocket valves
		Low pressure blood
		Deoxygenated
		Carries blood to the right atrium
		Vein
Oxygenated		
Carries blood to the left atrium		



Section 3: Cardiac volumes

Heart Rate Values

$$\text{Cardiac output} = \text{Stroke volume} \times \text{Heart rate}$$

Notes

Section 4: Aerobic & anaerobic respiration

System	Energy release	
Aerobic respiration	Glucose + Oxygen 	Carbon dioxide + Water + Energy
Anaerobic respiration	Glucose 	Lactic acid + Energy

Notes

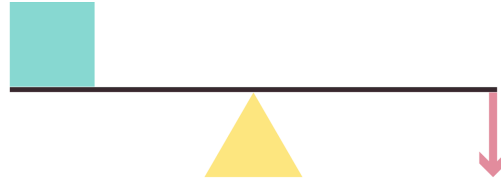
Section 5: Principles of force

Force: strength or energy exerted or brought to bear/cause of motion or change /active power.

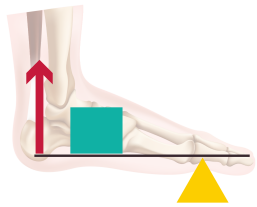
$$F = ma$$

Notes

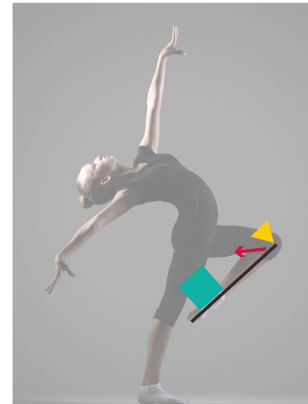
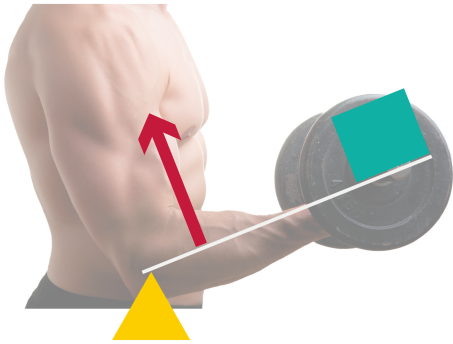
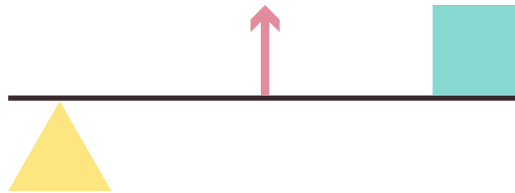
Section 6: Levers



Notes



Notes



Notes

Section 7: Social health and well-being

Concept	Definition
Health	A state of complete mental, physical and social wellbeing, and not merely the absence of disease and infirmity.
Fitness	Able to cope with the demands of the environment.



Notes

Section 8: Components of fitness

Components of Fitness (A-F)		
Component	Definition	Performance example
Agility	Ability to change direction quickly whilst maintaining control	Netball player dodging left and right to find space to receive the ball.
Balance	Keeping centre of mass above the base of support	Skier leaning forward to keep their CoM above their skis in order to Prevent a crash and to stay in the race.
CV endurance/Stamina	Ability of the heart and lungs to supply oxygen to the working muscles	Triathlete efficiently delivers oxygen to the gastrocnemius when running in order to work at higher intensities aerobically and prevent OBLA.
Coordination	Ability to use different parts of the body together smoothly and efficiently	High jumper arches their back whilst simultaneously kicking their legs up in order to clear the bar with their lower body.
Flexibility	Range of movement possible at a joint	Hockey goalkeeper shows a wide range of movement in the shoulder by hyperextending to save a slow-moving ball that has already looped over their head and is going into the net.

Components of Fitness (M-S)		
Component	Definition	Performance example
Muscular endurance	Ability of a muscle to undergo repeated contractions without fatigue	Olympic rower repeatedly contracts the biceps to flex the elbows and pull against the water without fatiguing meaning they maintain their pace in the crucial last 100m.
Power	Strength x speed	100m sprinter applies maximal force to the block at the highest speed possible to accelerate them ahead of their opponents in the race.
Reaction time	Time taken to initiate a response to a stimulus	Basketball player reacts quickly to their opponents drive to the basket by starting to push off their left foot so they can begin to move to their right to block the route to the basket and prevent 2 points.
Speed	Maximum rate at which an individual is able to cover a distance or perform a movement in a period of time	Table tennis player moves rapidly to their left to reach a hard-hit loop shot before the ball passes their paddle and wins the point for the opponent.
Strength	Ability to overcome a resistance	Weightlifter begins to raise a world record weight off the ground by applying maximal muscular force to the bar with the upper and lower body.

From examples to impact

Try completing answers to this question over and over again:

Justify the importance of (insert component of fitness here) to a (insert performer/activity here)

For example:

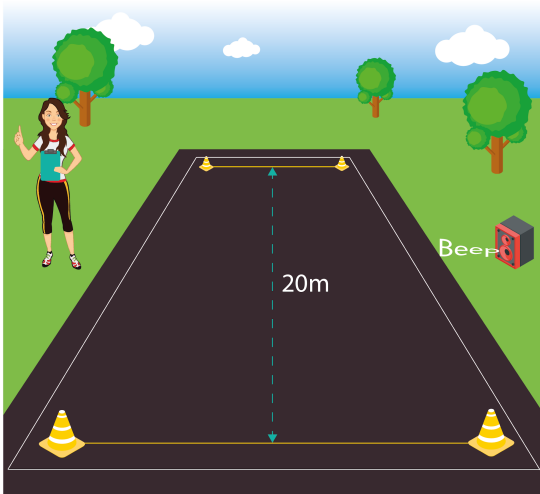
- “Justify the importance of speed to a marathon runner.”
- “Justify the importance of flexibility to a hockey goalkeeper.”

You can use the performer profiles provided to get you started or use your own examples.

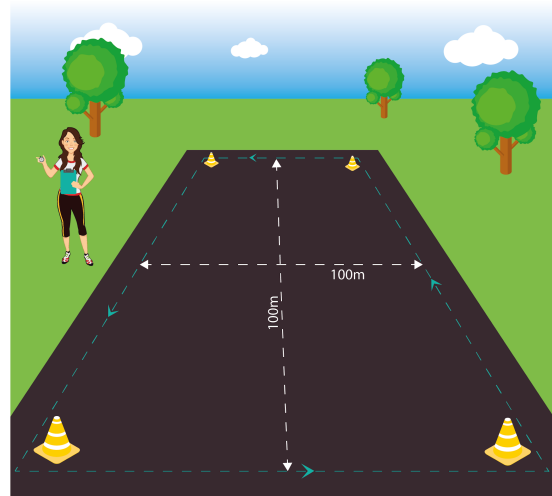
	CoF		Performer/Activity	Answer
Justify the importance of	strength	to	sprinting (Josh).	“Maximal strength causes large amounts of force to be applied to the block to cause an explosive start. It also allows the sprinter to apply more force to the ground when striding, which propels the sprinter forward faster. Finally, maximal strength in the arms and shoulders allows the sprinter to pump their arms causing greater forward motion.”
Justify the importance of		to		
Justify the importance of		to		
Justify the importance of		to		
Justify the importance of		to		

Section 9: Test protocols

Multi-stage Fitness Test



12 Minute Cooper Run



Components of Fitness - CV endurance	
Definition	Ability of the heart and lungs to supply oxygen to the working muscles
Examples	Triathlete efficiently delivers oxygen to the gastrocnemius when running in order to work at higher intensities aerobically and prevent OBLA.
Cooper 12-minute run/walk	Measure out a known area/use running track.
	Participants need to keep moving around the area for 12 minutes.
	Result is how far they run/distance covered.
	Calculate metres travelled/measured in metres.
Multi-stage fitness test	Measure out a 20m track.
	Use a Multi stage fitness recording.
	Keep in time to the bleeps/Arrive at the line on or before the bleep.
	Wait for bleep before turning.
	Bleeps get faster.
	Test ends after two missed bleeps.
	Result is the last level and shuttle they reach.

Notes

Sit and Reach Test



Notes

Components of Fitness - Flexibility

Definition	Range of movement possible at a joint
Examples	Hockey goalkeeper shows a wide range of movement in the shoulder by hyperextending to save a slow-moving ball that has already looped over their head and is going into the net.
Sit-and-reach test	Remove shoes
	Sit on floor with legs straight out
	Soles of feet on the box
	Reach forward with one hand on top of the other
	Stretch as far as possible
	Hold for two seconds
	No jerking movements
	Distance reached is measured in cm

Abdominal Curl Test



Notes

Components of Fitness - Muscular endurance

<p>Definition</p>	<p>Ability of a muscle group to undergo repeated contractions without fatigue</p>
<p>Examples</p>	<p>Olympic rower repeatedly contracts the biceps to flex the elbows and pull against the water without fatiguing meaning they maintain their pace in the crucial last 100m.</p>
<p>Multi-stage Abdominal Curl Conditioning Test</p>	<p>Use a sit up bleep test recording</p>
	<p>Keep in time to the bleeps</p>
	<p>Complete entire range of movement</p>
	<p>Two bleeps per sit up</p>
	<p>Test ends after two missed bleeps</p>

Vertical Jump Test

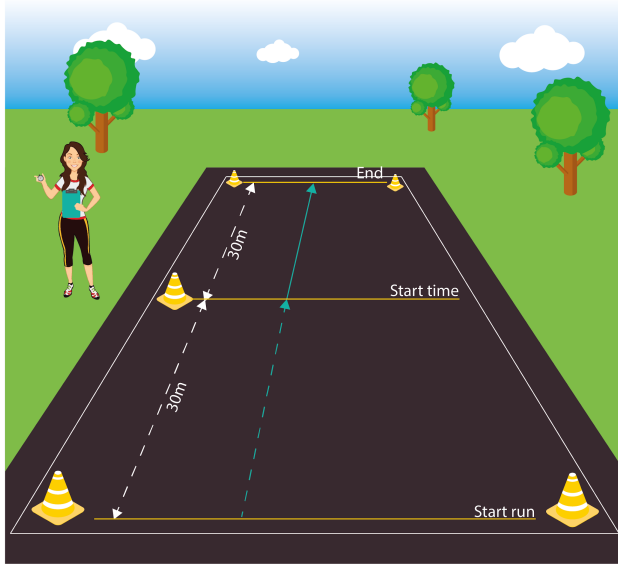


Notes

Components of Fitness - Power

Definition	Strength x speed
Examples	100m sprinter applies maximal force to the block at the highest speed possible to accelerate them ahead of their opponents in the race.
Vertical Jump test	Stand sideways on to the wall
	Reach up and make a mark/Slide ruler up
	Jump up and touch the board/Jump up and mark chalk on the wall
	Measure the distance between two marks in cm

30m Sprint Test

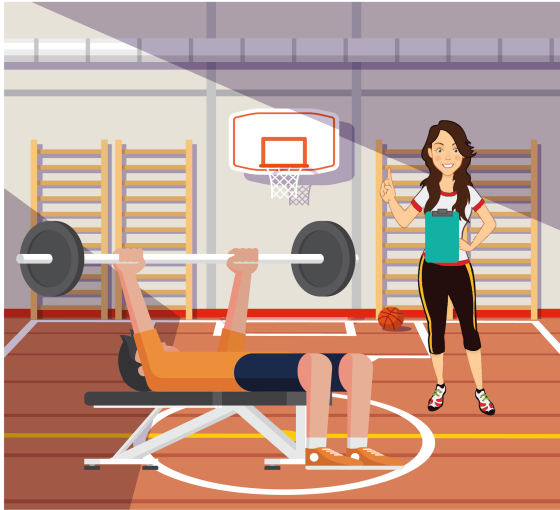


Notes

Components of Fitness - Speed

Definition	Maximum rate at which an individual is able to cover a distance or perform a movement in a period of time
Examples	Table tennis player moves rapidly to their left to reach a hard-hit loop shot before the ball passes their paddle and wins the point for the opponent.
30m Sprint Test	Select a sprinting area 60-80ms long
	Measure a 30m distance
	Rolling start/Accelerate before the start
	Run as fast as you can/Run through the line
	Time is recorded

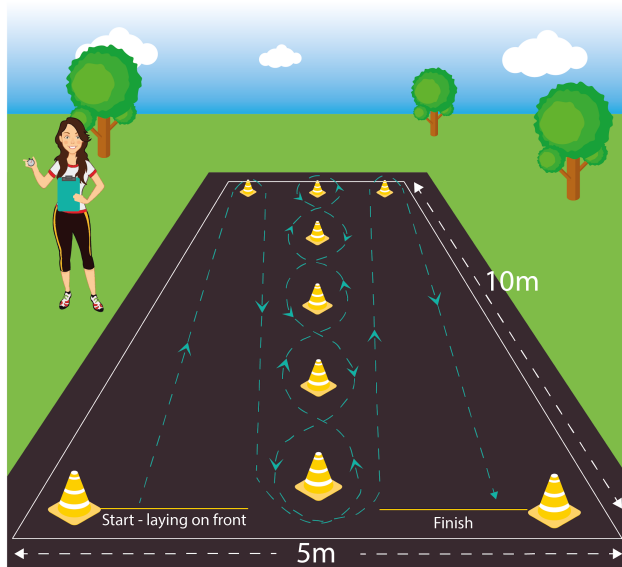
1 Rep Max Test



Notes

Components of Fitness - Strength	
Definition	Ability to overcome a resistance
Examples	Weightlifter begins to raise a world record weight off the ground by applying maximal muscular force to the bar with the upper and lower body.
Grip strength dynamometer test	Hold in dominant hand
	Start with your hand up
	Bring down to side/Squeeze the handle/Lower arm
	No swinging your hand
	Repeat three times
	Record the maximum force reading
1 Repetition Maximum (1RM)	Select the body part/Select the muscle group/Test specific muscle
	Weight lifting technique for that body part
	Select a realistic weight
	Lift weight once
	Rest for 5 minutes
	Repeat with heavier weight
	Repeat the process until a weight is selected that cannot be lifted successfully for one rep
	Last weight you lifted successfully
Usually measured in kilogram	

Illinois Agility Test



Notes

Components of Fitness - Agility

Definition	Ability to change direction quickly whilst maintaining control
Examples	Netball player dodging left and right to find space to receive the ball.
Illinois Agility test	Mark out the course to the exact measurements required
	Start lying face down on the start line (prone position)
	Run the course as quickly as you can
	How fast you complete the course is recorded
	Measured in seconds

Standing Stork Test



Notes

Components of Fitness - Balance

Definition	Keeping centre of mass above the base of support
Examples	Skier leaning forward to keep their CoM above their skis in order to Prevent a crash and to stay in the race.
Stork Stand Test	Hands on hips and one foot on inside knee of the opposite leg
	Participant raises their heel
	Hold balance for as long as possible
	If either heel of standing foot leaves the floor or other foot leaves the knee, balance is lost
	The score is total time the participant held the balance successfully
	Measured in seconds

Wall Throw Test



Notes

Components of Fitness - Coordination

Definition

Ability to use different parts of the body together smoothly and efficiently

Examples

High jumper arches their back whilst **simultaneously kicking their legs up in order to clear the bar with their lower body.**

Anderson Wall Throw test

Mark a line 2m from the wall

Stand behind the line

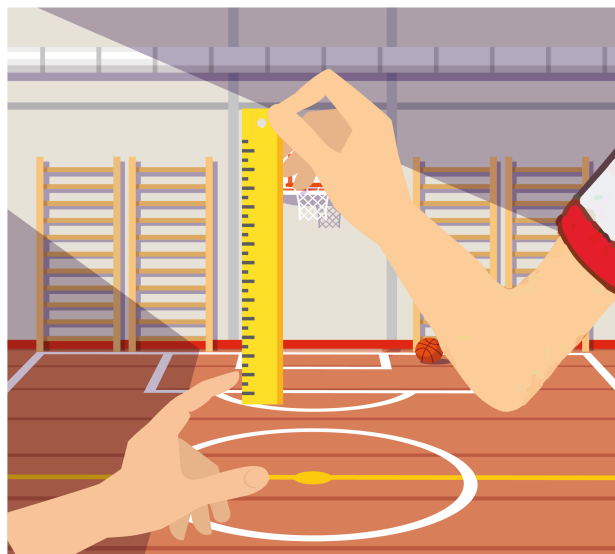
Underarm action throw the ball at the wall

Throw the ball with one hand and catch with the other

Count the number of successful catches

In 30 seconds

Ruler Drop Test



Notes


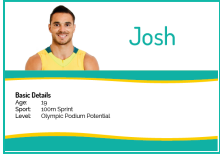





Components of Fitness - Reaction Time




Definition	Time taken to initiate a response to a stimulus
Examples	Basketball player reacts quickly to their opponents drive to the basket by starting to push of their left foot so they can begin to move to their right to block the route to the basket and prevent 2 points.
Ruler Drop Test	Partner holds a ruler above the open hand
	The 0 cm mark must be directly between the thumb and index finger
	Drop the ruler with no warning
	Catch it as soon as possible
	The score is taken from where the top of the thumb hits the ruler
	Measured in cm

Section 10: Skills classification continua

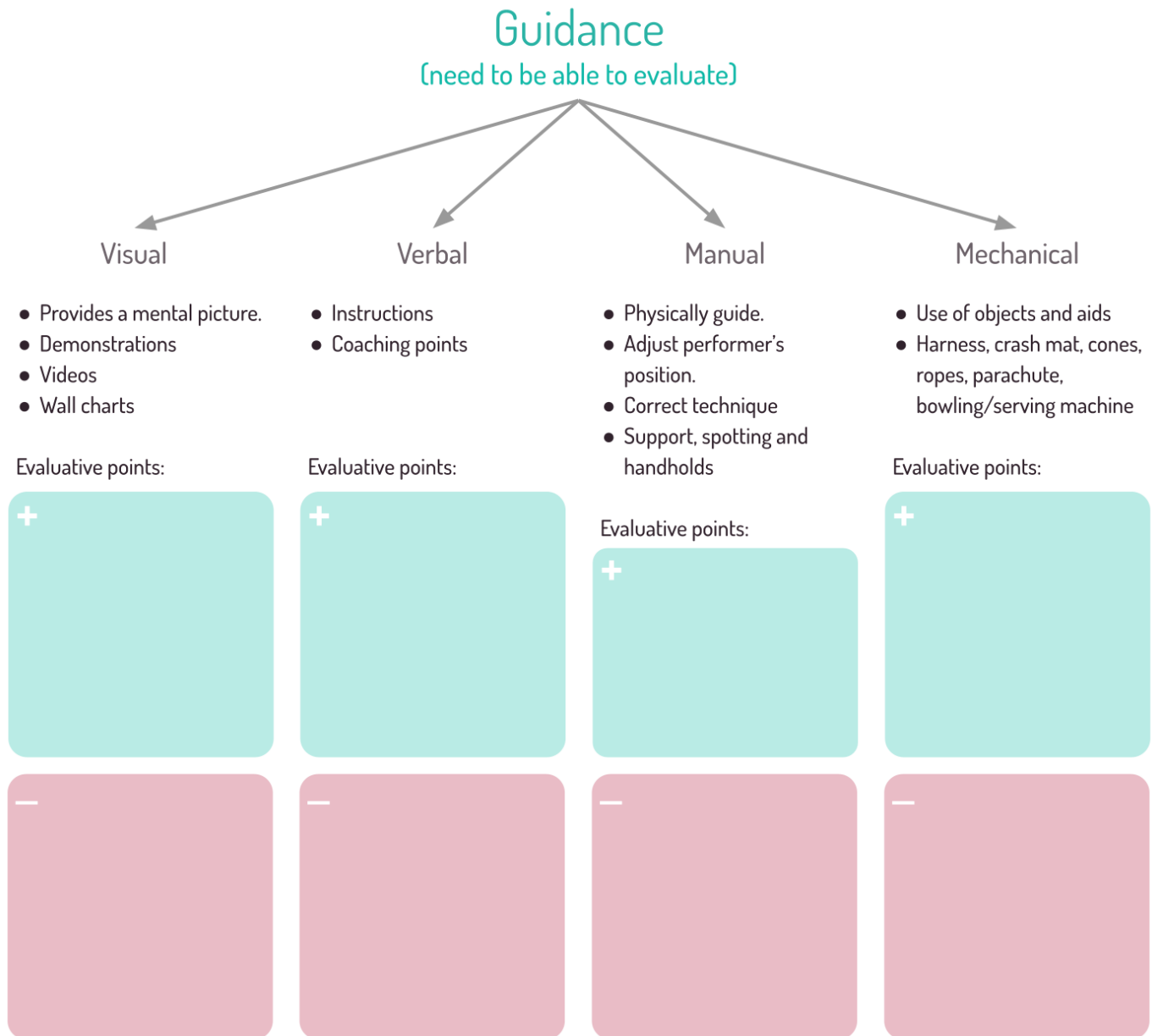


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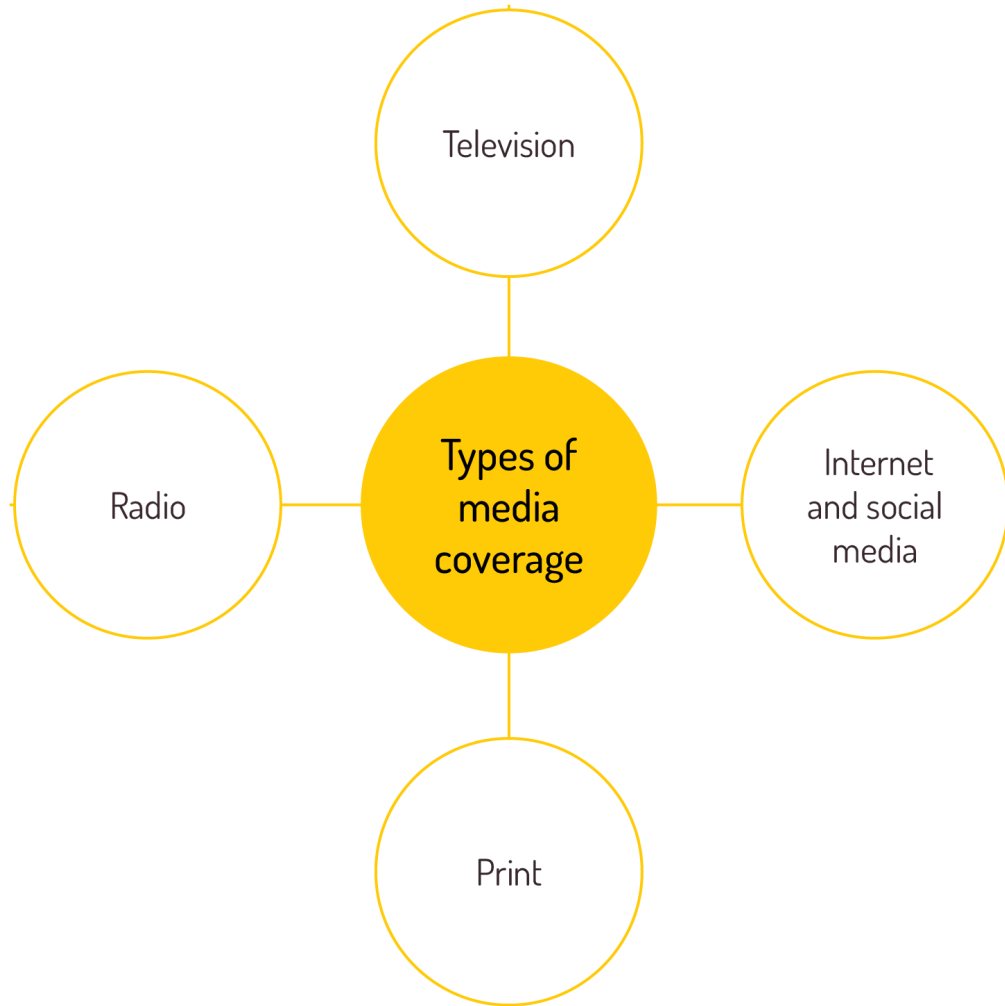
Performer	Performance	Justify placement on basic/complex.	Justify placement on gross/fine.	Justify placement on open/closed.
	Sprint start	Basic because there is only one decision to make and the response to the gun is always to begin sprinting.	Gross because Josh needs to propel himself forward with power using large muscle groups like the quadriceps.	Open because Josh has to respond to a changing environment. In this case, the gun sounding.
	Middle of the race			
	Serving			
	Lobbing the opponent			
	Triathlon racing			
	Vaulting			
	Penalty pass			

Performer	Performance	Justify placement on basic/complex.	Justify placement on gross/fine.	Justify placement on open/closed.
 <p>Julie</p> <p>Basic Details Age: 20 Sport: Netball (ICC, GFI) Level: Semi-professional/National</p>	Intercepting a pass into the D			
 <p>Carlos</p> <p>Basic Details Age: 35 Sport: Wheelchair basketball Level: Ex-national team</p>	Free throw			
 <p>Carlos</p> <p>Basic Details Age: 35 Sport: Wheelchair basketball Level: Ex-national team</p>	1v1 defending			

Section 11: Guidance

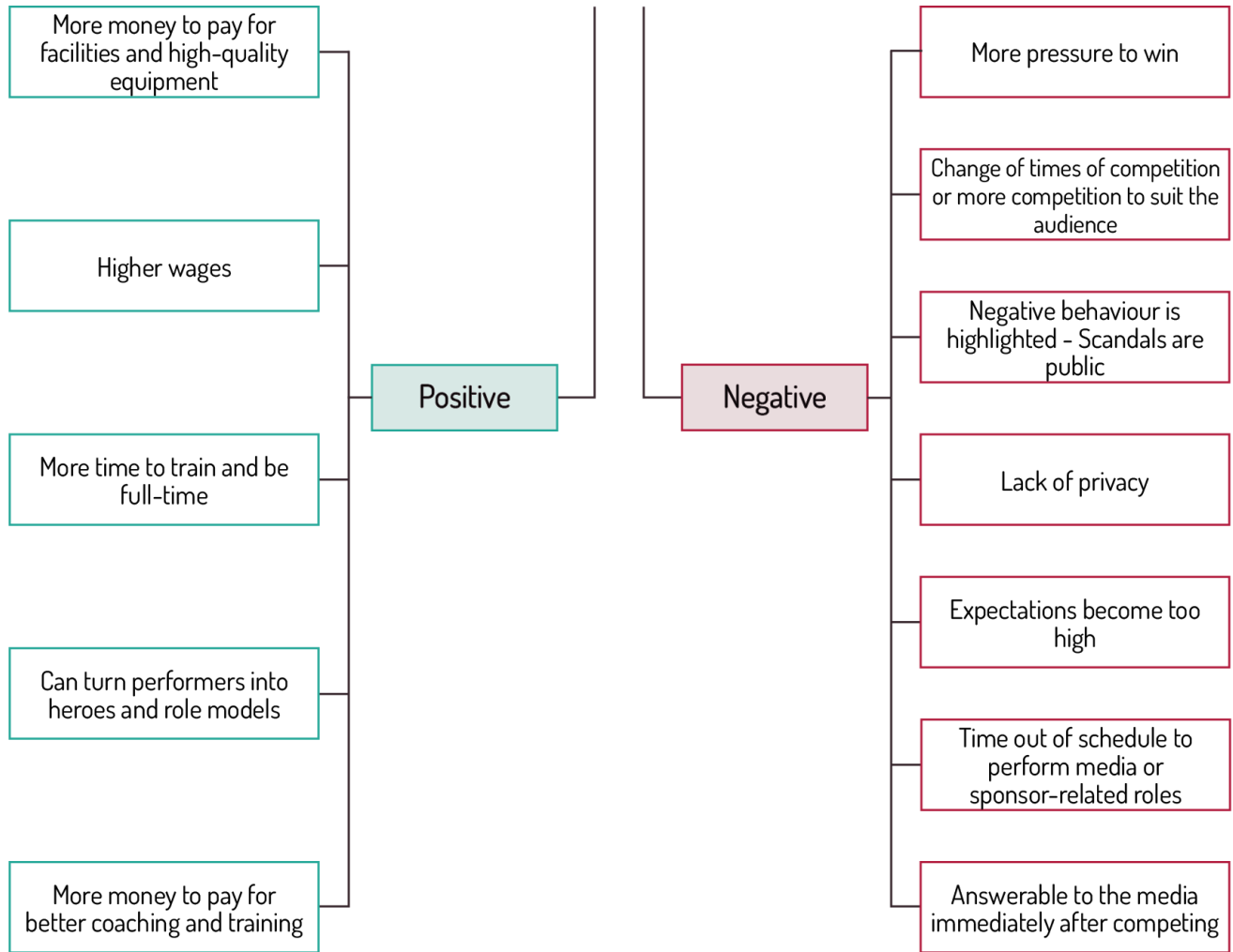


Section 12: Media



Notes

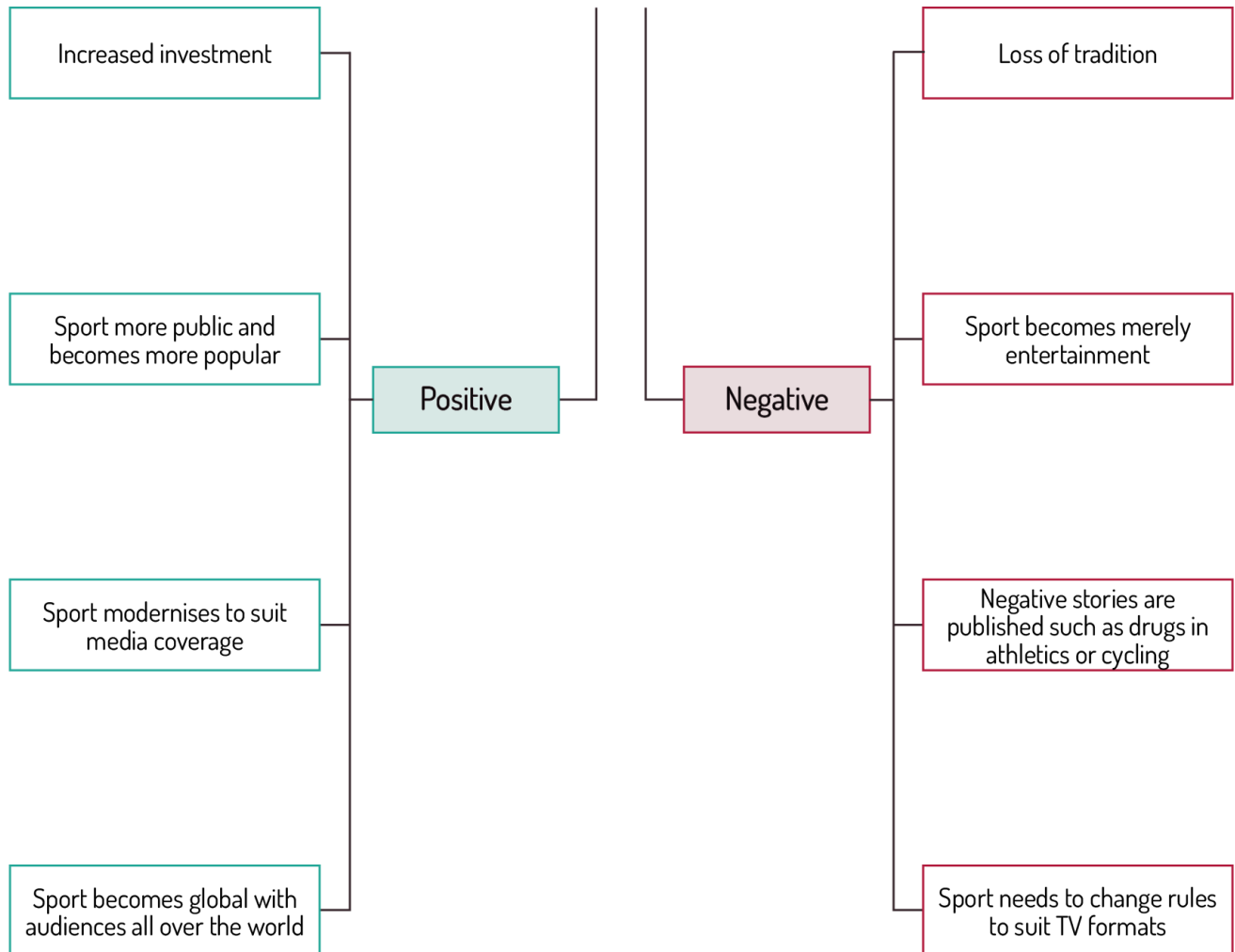
Impact of media on the performer



This topic is likely to feature in "Evaluate" questions.

Notes

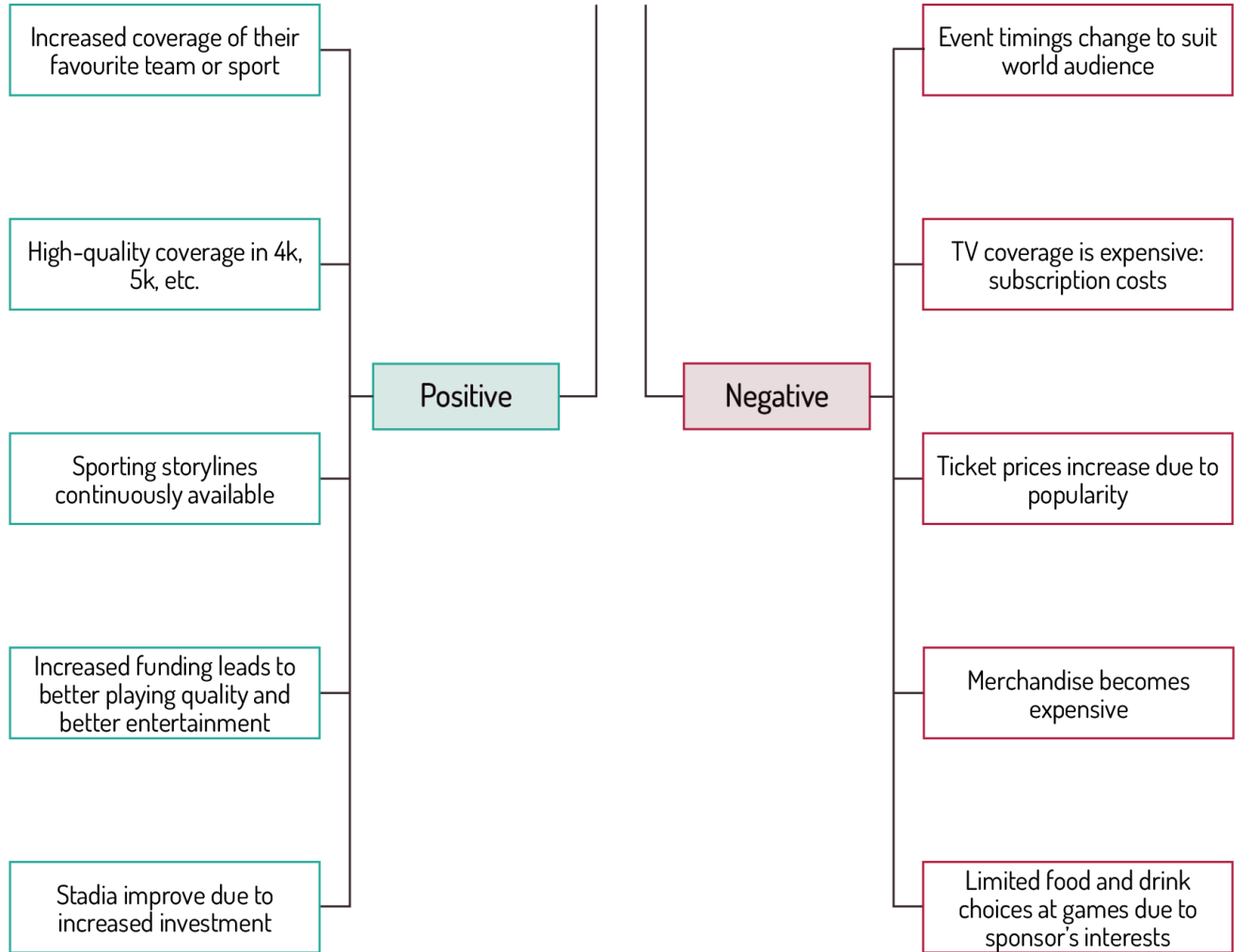
Impact of media on the sport



This topic is likely to feature in "Evaluate" questions.

Notes

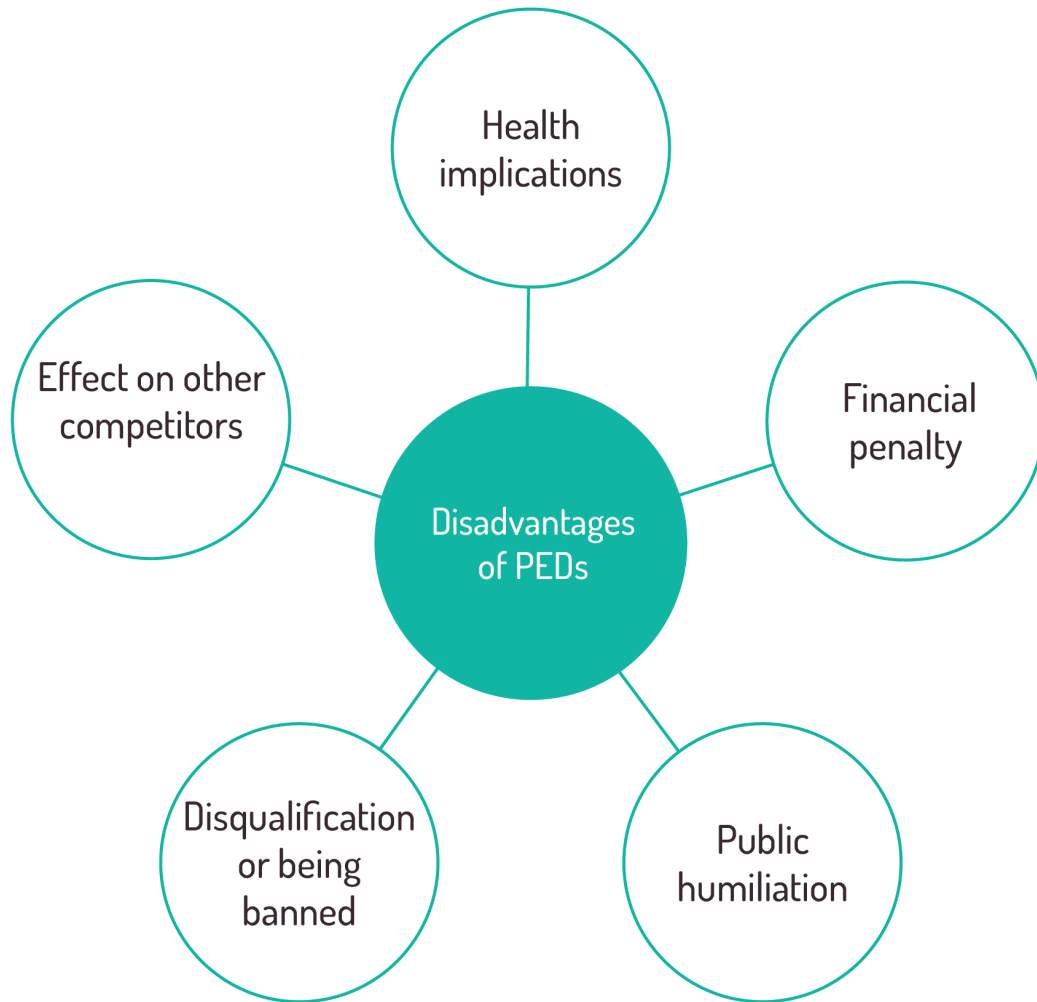
Impact of media on spectators



This topic is likely to feature in "Evaluate" questions.

Notes

Section 13: Disadvantages of PEDs



Notes



Notes

Section 14: Blood doping



Blood doping		
*Taken by	Positives	Negatives
<ul style="list-style-type: none">● Road cyclist● Triathlete● Marathon runner● X-country skier	<ul style="list-style-type: none">● RBC production● Increased oxygen transportation● Perform at higher intensities aerobically	<ul style="list-style-type: none">● Transfusion infections● High blood pressure

Notes
