

How to optimise training and prevent injury



UNTAMED
EDUCATION

1.3.5 Physical training

PARQ

Injury

Drugs

Concussion

Fracture

Blood Doping

How to optimise training and prevent injury

R.I.C.E.

Over Use

Anabolic Steroids

Soft Tissue

Abrasion

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1. PAR-Q

- ▶ It is important to assess your readiness to perform before becoming active in case you have the following conditions:

- ▶ **Heart problems.**
- ▶ **Chest pains.**
- ▶ **Dizziness** or feeling **faint.**
- ▶ **High blood pressure.**
- ▶ **Bone** and **joint** problems.

- ▶ The questionnaire asks questions to uncover any of these conditions.



2. Preventing Injury

- ▶ **Warm up** and **cool down** properly.
- ▶ Use the **correct equipment.**
- ▶ **Know and follow the rules and regulations.**
- ▶ **Wear appropriate protective clothing.**
- ▶ Check equipment for **faults.**
- ▶ Check the **facilities** for any harmful objects and **hazards.**



3. R.I.C.E

- ▶ There is one form of treatment that is used for a number of minor injuries and you can remember it using the acronym R.I.C.E.
- ▶ **Rest** - sit down or lie down and do not move.
- ▶ **Ice** - cool the injured area by applying ice.
- ▶ **Compression** - use a bandage to stop the swelling.
- ▶ **Elevation** - raise the joint higher than the heart to reduce the swelling.

4. Concussion

A person will display a number of **symptoms** if they are concussed.

- ▶ Loss of **consciousness**.
- ▶ Relaxed **limbs**.
- ▶ Weak irregular **pulse**.
- ▶ Slow shallow **breathing**.
- ▶ Dilated **pupils**.
- ▶ Bleeding from the ears.

Treatment

If a performer takes a blow to the head it is important to get **help** immediately. Then place them in the **recovery position** making sure their airways are clear.



5. Fractures

- ▶ **Compound** or **open fracture** is where the broken bone comes through the skin. There is then a risk of infection entering the damaged skin.
- ▶ **Simple** or **closed fracture** is a break of the bone without any breaking of the skin.
- ▶ **Greenstick fracture** is caused by pressure and impact so the bone bends but only partially breaks.
- ▶ **Stress fractures** are hairline cracks in the bone caused by constant pressure such as running. When muscles fatigue they are unable to absorb the shock and the resulting pressure causes small cracks to appear in the bone.

Treatment

For all types of fractures you should immediately stop and seek medical attention.





6. Dislocation

A person will display a number of symptoms if their bones become dislocated at the joint.

- ▶ The joint looks deformed.
- ▶ Swelling.
- ▶ Bruising.
- ▶ Numbness.
- ▶ Pain.
- ▶ Lack of movement.

Treatment

For a dislocation you should immediately stop and seek medical attention.



7. Soft Tissue Injuries

Soft tissue injuries involve injuries to the muscles, ligaments and tendons.

- a. **Strains**
- b. **Cuts**
- c. **Abrasions**
- d. **Sprains**
- e. **Tennis elbow**
- f. **Golfer's elbow**

a. Strains

Strains - caused by a tear in the muscle tissue, resulting in pain, swelling and bruising.

- ▶ Strains should be treated with R.I.C.E.
 - ▶ **Rest** - sit down or lie down and do not move.
 - ▶ **Ice** - cool the injured area by applying ice.



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- ▶ **Compression** - use a bandage to stop the swelling.
- ▶ **Elevation** - raise the joint higher than the heart to reduce the swelling.

b. Cuts

Cuts - caused by an impact **breaking the skin**.

- ▶ Requires immediate attention to **reduce the loss of blood**.
- ▶ They should be **cleaned** with an antiseptic first.
- ▶ Dress them with a **plaster** or **bandage** or both so they **don't get infected**.



c. Abrasions

Grazes or abrasions - caused by **rubbing** against a rough surface

- ▶ Need to be **cleaned thoroughly** as there may be grit or dirt in the wound.
- ▶ The graze should then be **covered** to prevent further infection.



d. Sprain

Sprains - caused by **stretched or torn ligaments** from a sudden twisting movement.

- ▶ Sprains should be treated with **R.I.C.E.**
 - ▶ **Rest** - sit down or lie down and do not move.
 - ▶ **Ice** - cool the injured area by applying ice.
 - ▶ **Compression** - use a bandage to stop the swelling.
 - ▶ **Elevation** - raise the joint higher than the heart to reduce the swelling.



e. Tennis elbow

Tennis elbow - caused by **overuse** of the tendons and muscles surrounding the elbow.

- ▶ Tennis elbow should be treated with **rest** and if symptoms persist speak to a doctor.



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f. Golfer's elbow

Golfer's elbow - caused by **overuse** of the tendons and muscles surrounding the elbow

▶ Golfer's elbow should be treated with **rest** and if symptoms persist speak to a doctor.

8. Causes of Injury

- ▶ **Colliding** with another person.
- ▶ Sudden or **twisting** movements.
- ▶ Hot, cold, wet or windy **environments**.
- ▶ Wearing **inappropriate clothing**.
- ▶ Not following **instructions** or the **rules**.
- ▶ **Not** warming up and cooling down.
- ▶ **Impacting** with the ground or another person.



9. Performance Enhancing Drugs (PEDs)

Drugs are:

"Any chemical introduced to the body which affects how the body works."

Doping is:

"To improve performance by taking drugs."

10. Reasons for taking them

Sports performers may take performance enhancing drugs for a number of reasons. Here are some:

- ▶ **Steroids** help to build muscle quickly.
- ▶ **Narcotic analgesics** help to kill pain and allow the performer to keep going.
- ▶ **Stimulants** make the performer more alert.
- ▶ **Anxiety reducing drugs** calm performers before an



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event.

11. Types of drugs

The drugs
banned

Type of Drug	Effect on Performance	Risks	Sports Used
Stimulants	Reduce tiredness.	Impotence, high blood pressure, heart failure, paranoia and insomnia.	Endurance events such as swimming and cycling.
Narcotic-analgesics	Painkillers mask the pain of injury.	Injuries become more severe, nausea, drowsiness, dry mouth and constipation	Used in all sports where injuries are sustained.
Diuretics	Increase the amount of water excreted. Flush other drugs out of the system.	Muscle weakness, and dehydration. Loss of sodium and potassium salts.	Sports that have weight categories such as boxing and horse racing.
Anxiety reducing drugs - Beta Blockers	Slow down and regulate the heart and reduce <u>hand shake</u> .	Diarrhoea, slow heart rate and impotence.	Shooting and archery.
Peptide hormones & analogues (EPO & GH)	They mimic the effect of naturally occurring hormones. Increase muscle strength and growth.	Allergic reactions, high blood pressure, abnormal growth in hands, feet and face.	<u>Weight lifting</u> to increase muscle mass.
Anabolic Steroids	Quick increase in strength. Able to train for longer.	Heart disease, high blood pressure, kidney and liver disease, infertility and aggression.	Strength and power related sports such as weightlifting and sprinting.

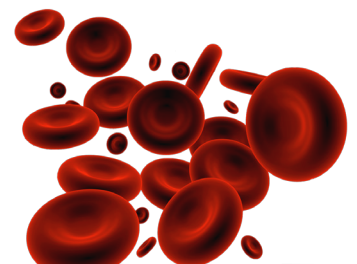
following
are
by the

International Olympic Committee:

12. Blood doping

The method:

- ▶ **Blood** is **drawn** from the athlete a few weeks before competition.
- ▶ The **red blood cells** are **separated** and **frozen**.
- ▶ **Just before** the **event** the red blood cells are **thawed** and **injected back** into the athlete.





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- ▶ The **higher** the **concentration** of **red blood cells** the **more oxygen** can be delivered to the working muscles.
- ▶ Long distance athletes such as **cyclists** and **marathon** runners may use this method.

The **dangers**:

- ▶ Injections could result in **infections** and **blood diseases**.
- ▶ **HIV** and **AIDS**.
- ▶ Cheating can result in being **banned**.

