COURSE GUIDE

KHE 438
EMERGENCY CARE AND FIRST AID IN SPORTS

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CONTENTS **PAGE**

INTRODUCTION

Emergency Care and First Aid in Sports is very important: as it leads to the understanding of how to support and assist Coaches, Teachers, Students or Stakeholders in Sports from the knowledge and skills in handling emergency and first aid practice. This can be used during participation in sports to care and help in life threatening factors, freedom from danger, and ability to detect and avoid danger or dangerous play, removal of obstacles sand impediment that may cause injury, personal health promotion in sports and risk management.

The prevalence of accidents in and around playgrounds, especially, makes it very necessary for skills and knowledge of care and support acquisition to be learned. This will encourage and motivate participation in sports and play. It is important to always have the emergency and first aid kits around the playground also so as to make it possible for such needed knowledge and care to be given and promptly too.

COURSECOMPETENCIES

The Course is to provide you with relevant information and practical skills in:

i. First aid Kits
ii. Handling Emergencies (victims)
iii. and First Aid Knowledge.

COURSE OBJECTIVES

By the end of this course, you will be able to

- Define First aid
- List the contents of a First aid box (Kits)
- State the uses of the contents of the box
- Enumerate the qualities of a First aider
- State the objectives of First aid

STUDY UNITS

Module 1

Unit 1 Conceptual Definition and Objectives of First Aid
Unit 2 The First Aider
Unit 3 First Aid Box and Contents (kits)

Module 2

Unit 1 Emergency Care of Sports Injuries
Unit 2 Common Emergency Care Cases I
Unit 3 Common Emergency Care Cases II

Module 3

Unit 1 Athletic Injuries/Open Wound
Unit 2 Closed Injuries
Unit 3 Mosculo-Tendinous Injuries

Module 4

Unit 1 General Nature of Athletic Injuries
Unit 2 Injuries to the Joints Upper Extremities
Unit 3 Injuries to the Lower Extremities

Module 5

Unit 1 Conditioning for Fitness and Performance
Unit 2 Therapeutic Modalities for Rehabilitation
Unit 3 General Prevention of Athletic Injuries.

WORKING THROUGHTHISCOURSE

For you to understand this course material, you will need to read or study the material thoroughly as well as to be able to state the objectives of First aid.

You should be able to carry out the self-assessment exercises in each of the units very correctly.

This course material also provides you with references to relevant texts and links that can enhance your understanding of the unit in the modules.

PRESENTATION SCHEDULE

Your course materials have important dates for the early and timely completion and submission of your TMAS and attending tutorials. You should remember that you are required to submit all your assignment by the stipulated time and date. You should guard against falling behind in your work.

ASSESSMENT

There are three components of assessment for this course: self-assessment exercises and assignments at the end of each study unit, the tutor-minced assessment; and a written examination. In doing these assessments, you are expected to use the information gathered during your study of the course.

HOW TO GET THE MOST FROM THE COURSE

This course material provides you the opportunity of reading, learning at your own pace, time and location. To get the best of experience, you will need to work with the material in the following logical order:

1. Read each unit step by step as arranged
2. As you read the materials for each unit, note the key points in each unit
3. Refer to the links and text provided
4. After reading, attempt the assessment exercise given at each step
5. You should obey all the rules and guiding instructions.

FACILITATION

Online facilitation would be made available to provide you with the opportunity to interact with your colleagues across the world.

MAIN COURSE

CONTENTS **PAGE**

MODULE 1

INTRODUCTION

Understanding the meaning and objectives of first aid is to arouse your interest towards a proper attention to principles and the importance of First aid. This will help to appreciate what should be the qualities of a first aid and not to only to value first aid, but to think of becoming skillful first aiders.

Unit 1 Conceptual Definition and Objectives of First Aid
Unit 2 The First Aider
Unit 3 First Aid Box and Contents (kits)

UNIT 1 CONCEPTUAL DEFINITIONS

CONTENTS

1.0 INTRODUCTION

There are conceptual meaning and definition of First aid, depending on how an individual or groups view it, i.e it could be a matter of semantics. Some say it is first help given to a victim of accident, others say it is first treatment and so on. Whatever it is said to be, some considerations come to focus, such as the person attending to the accident victim, is he a trained first aider? The treatment itself could be temporary, if the environment was not conducive, etc.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- To define and explain concepts of first aid
- Mention the objectives of first aid

- Explain the principles of a first aid
- State the qualities that qualify one to be a first aider.
- Describe the values of first aid.

3.0 MAIN CONTENT

3.1 Conceptual Definitions First Aid

For the purpose of this write up, this definition is considered useful, thus "First aid is the first, temporary and immediate, preferably, medically approved care or assistance given to an athlete or victim of accident at the playground or elsewhere e.g

It could also be given to a victim of illness or any other condition that threatens life or the health of the athlete or victim, using the available materials before the arrival of a physician or getting the victim to the hospital.

3.2 Objectives of First Aid

i. To save or preserve life of the athlete
ii. To prevent further aggravation or deterioration of the condition of the athlete
iii. To provide comfort to the athlete or victim
iv. To provide athlete with reassurance of care and improve his ailing condition.
v. To provide first and temporary care to the athlete
vi. To provide notes on the athlete's condition to a physician
vii. To arrange or provide transportation to the hospital for further examination or treatment.

3.3 Values of First Aid

The values of First Aid are enormous and they include;
i. Value to self
ii. Value to others
iii. Value to civil defense e.g Red Cross
iv. Value in fostering, safety consciousness

SELF-ASSESSMENT EXERCISE

i. First aid can help in fostering safety consciousness
   a. Control emotions
   b. Value
   c. Control of emotions
   d. Diagnose

4.0 CONCLUSION

Having read this course unit and successfully complete. The self-assessment test, it is assumed that you have attained understanding of the concept and definition of first aid knowledge

5.0 SUMMARY

In this unit, you have learnt the concept and definition of first aid. Also, you have studied the objective of first aid, its principles were discussed and what you need to qualify a first aider. The value of first aid was explained to you.

6.0 TUTOR-MARKED ASSIGNMENT

1. The primary object of first aid is:
   a. To provide comfort
   b. To arrange for transport
   c. To save or preserve life
   d. To examine the victim

2. Ensure breathing or provide respiration is a
   a. Transport
   b. Definition
   c. Principle
   d. Value

3. Self-confidence and cheerfulness are a
   a. Quality of a First Aider
   b. Principle
   c. Value
   d. Objective

7.0 REFERENCES/FURTHER READING

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UNIT 2 THE FIRST AIDER

CONTENTS

1.0 INTRODUCTION

The First Aider is any person who may have been trained and learnt the process of standard methods of application of First Aid which is best suited to his skill. He is trained to reach patients identify the problem and should be able to provide emergency assistance without further causing pains or injuries.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and correctly explain the responsibilities of a First Aider
- Outline the stages of First Aid correctly
- Enumerate the scope of a First Aider
- Identify and describe the qualification of a First Aider

3.1 Qualification of the First Aider

The First Aider is any person who may have learnt standard method of application of first aid skills, which is best suited to his skill. He has been trained to reach patients identify the problem and should be able to provide emergency assistance without further causing or worsening the patient conditions.

The following are some of the qualification that an able First Aider need to enable him/her to function well as a First Aider:

1. Good observer
2. Good reflex action i.e act quickly and intelligently

3. Not easily excited or panicky
4. Possess self-confidence and quick intelligent ability
5. He is a motivator-being able to reassure the apprehensive victim of recovery and wellness.

3.2 Principles of the First Aider

The First Aider (coach) action is always guided by the following principles as he tries to attend to the athlete:

i. Ensure breathing or provide respiration A,B,C of first aid (Restoration)
ii. Treat Shock, Fainting and general unconsciousness
iii. Treat Fracture or dislocations
iv. Treat Burns and Scalds
v. Multiple injuries– wounds of various degrees
vi. Transportation

3.3 Scope of First Aider

1. The First Aider should not take the place of a doctor
2. He should not examine wounds by opening wounds that have been bandage by someone else
3. He should not declare a victim dead
4. The scope of the first aider should cover accidents or situation that may take place on the road, home factories, building which are as a result of calamities, electric shock, burns, snake bite, poisoning etc

3.4 Responsibilities of the First Aider

1. Gain access to victim in easiest and safest ways
2. Access and observe the scene
3. Direct and control traffic, also control bystanders
4. Find out the situation of victim- unconscious, conscious, alive or dead
5. Give immediate and appropriate assistance using the following priority.
   i. Restoration of breathing
   ii. Circulation of blood
   iii. Stop bleeding
6. Identify the injury involved
7. Arrange to transfer victim either home, hospital or safest place
8. Keep record of the patient- incident – addresses - witness

SELF-ASSESSMENT EXERCISE

i. T F: Calling ahead to the homes athletic trainer can help to let you know that supplies might be made available to you, as the visiting team.
ii. T F: Food is never to be part of the Kits.

4.0 CONCLUSION

With the successful completing of the self-assessment test, it is assumed that you have attain understanding of listing or describing of the First aid Kits contents, their usage etc.

5.0 SUMMARY

It is impossible to be prepared for an Emergency. As you assemble your First aid Kits, you will find that the information contained in this module, is extremely important. The contents are always improved according to the number and kind of students.

6.0 TUTOR-MARKED ASSIGNMENT

1. T F: The personal kit is carried with you at all times only during games.
2. T F: A Trainer's Angel is used to remove the face marks from helmet.
3. T F: The Physician Kits may include items the athletic trainer is not or legally allowed to use.

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UNIT 3 FIRST AID BOX AND CONTENTS (KITS)

CONTENTS

1.0 INTRODUCTION

In many cases of emergencies, what is not done is just as important to the victim as what is done. The term emergency may really suggest speed in action, however a judicious delay may even be better than a wrong or unnecessary urgency and perhaps doing the wrong thing

Always, ONE IS WARNED against what he should not do. In emergency, ----first thing-----first. i.e one is expected to order his priority. Sick or injured persons do not carry label indicating what their problems is or are.

In Emergency situation, the first step is diagnoses of the situation or occurrence and the condition of the victim is best. This will not only help your ability to prioritize but also to help you know the whole areas of needs.

Note: In case of accident; don't be in a haste to move victim from the scene, except to avoid another accident remove victim from further danger of incoming traffic or fire.

This unit consists of:
a) Carriers: - boxes, or bags etc.
b) Content (kits): - (i) Materials or equipment and (ii) Small drugs

The carriers or first aid boxes are continently made, handy and just enough to help transport first kits or contents

In the developed world, every vehicle or transport, on air, sea, road, including, motor-cycles and even bicycles are made with a carriers, of first aid kits.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and explain the key terms correctly
- List most of the kits needed for certain emergency care or first aid administration
- Outline the common usage of the kits
- Mention the small medicine needed for first aid administration.

3.0 MAIN CONTENT

3.1 The kits and contents to be used for the injured athletes will include the followings

- Triangular bandages
- Roller– type bandages
- Dressing/quake pads
- Adhesive tape of Elastic plaster
- Bandage sheets
- Eye protectors
- Stick for tourniquet
- Blanket
- Cold spray or cold compress
- Scissors
- Splinter forceps
- Wire or thin board splints
- Sterile gauze in square packages
- Absorbent cotton, sterility

3.2 Drugs and Small Medicine to be carried in the First Aid Kits will include:

- Some approved variety of burn ointment.
- Small bottle of aromatic spirits of ammonia
- Small bottles of antiseptic solution
- Alum, powdered
- Ammoniated mercury ointment
- Antiseptic bottle
- Aspirin
- Boric acid crystals (label as poison)
- Hot water bottle etc.
- G V, Iodine etc.

3.3 Usage of some Drugs and Small Medication

Note that, sports accidents or injuries may go beyond the play ground to include;

- Camping experience, injuries
- Aquatic sports accidents
- Roads transport accidents
- Air travels etc.

First aid box kits to be carried may have to also include all emergency kits needed. So as to accommodate the above off playground accidental or illness conditions.

SELF-ASSESSMENT EXERCISE

i. The trainer need to be _____ in preparing kits for work

4.0 CONCLUSION

Having successfully responded well to your self-assessment test. It is assumed that you have attended good understanding.

5.0 SUMMARY

The trainer needs to be very resourceful as he prepares his first aid kits for outing. It is impossible for one to say you can over prepare with your first aid kits. You only need to consider the following:

1. The level of development you are dealing with
2. The sport is also considered etc.

6.0 TUTOR-MARKED ASSIGNMENT

Circle true (T) of false (F) the option that best represent your correct response

1. T, F: Triangular bandage has 3 edges
2. T, F: Scissors are used for cutting injuries
3. List any four (two each) examples of the following and state their function (i) Bandages, (ii) small medicines

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MODULE 2

INTRODUCTION

In Emergency situation, the first step is diagnoses of the situation or occurrence and the condition of the victim is best. This will not only help your ability to prioritize but also to help you know the whole areas of needs.

Note: In case of accident; don't be in a haste to move victim from the scene, except to avoid another accident remove victim from further danger of incoming traffic or fire.

UNIT 1 EMERGENCY CARE (HANDLING) OF SPORTS INJURIES

CONTENTS

1.0 INTRODUCTION

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- define and correctly explain the key terms
- list the priorities order
- state the process of diagnoses at the state of first aid (look, listen, touch and smell)
- Mention other procedural assistance

3.0 MAIN CONTENT

3.1 Ordering of Priority

1. ------first-----attend to victim that are alive and breathing or will need help to breath
2. -----second--------stop bleeding as life may ‘ebb’ out in the blood
3. ----third-------safe victim or ensure vomitous and/or chocking does not obstruct victim’s breath.
4. -----fourth------prepare victim for transportation to the hospital
5. ------fifth------check for internal injuries, bleeding or any other internal problems continue with procedure assistance.

3.2 First Aid Procedural Assistance

1. Keep the victim down with the head low and to one side to ensure blood flow to the brain.
2. Raise the legs to return the flow of blood to the vital organs (if victims injuries allow).
3. Loosen any constricting (tight) clothing around the neck, chest and waist

4. Casualty should be made to relax well enough
5. Minimize shock by keeping warm blanket covering
6. Check breathing pulse etc after every 10 min interval
7. Examine (diagnose) the victim for further clarification on the number of injuries (look, listen, touch and smell).
8. If casualty is unconscious, but breathing place in a recovery position.
9. Resuscitate if breathing and heart stop functioning
10. Cover the victim with blanket underneath, if possible
11. Keep record of specimens e.g. vomits, urine, tool etc.
12. Remove victim to hospital immediately.

3.4 Further Hints on Procedural Assistance

a. Keep calm
b. If a sudden illness, send for a doctor, transport victim to hospital
c. When it involves poison, 1st try to identify what poison and transport victim to hospital. Also, get the details about the poison.
d. If the victim is burnt keep warm and transport victim to the hospital.
e. For accident on playground or others places, follow the three steps in first aid i.e diagnose, treat and transport victim to the hospital.
f. Don't be in a hurry to move victim without first trying to diagnose (look, listen, touch and smell) know the extend and needs. Try immobilizing of the affected part.
g. When breathing has stopped suddenly try to resuscitate (CPR) by providing artificial respiration to restore breathing. Use any of the artificial respiration techniques method you are used to, from the following:
    i. Mouth to mouth ventilation
    ii. Schaffer's method/holger Nielsen method
    iii. Silvester method
    iv. CPR
    v. Check for bleeding and stop the bleeding
    vi. When unconscious-don't first move victim, try to keep breath
    vii. Check for evidence of fracture to include the neck region and the back of the victim.

    Try immobilizing the affected part.
h. While waiting for the specialist or ambulance
    i. Don't administer alcoholic drink
    ii. Loosen tight clothes or other wears
    iii. Conserve heat by covering victim with a blanket

iv. When it involves vomiting-turn head to left or right to avoid the danger of vomiting or chocking.

i. Move the victim to hospital or call the special (CPR)

Information on Cardio-Pulmonary Resuscitation; (CPR)

If the mouth to mouth ventilation is unsuccessful and the victim's heart stops or stopped beating the first aider must perform external chest compression with mouth to mouth ventilation.

Any time the heart stop functioning the blood cannot be circulating thus cannot reach the brain. The use of external heart compression is known as 'cardio-pulmonary resuscitation'. This technique is strongly advised to start cases of cardiac-arrest (sudden death) sudden death are the immediate and unexpected cessation of respiration or breathing and functions circulation. It is also called cardio-pulmonary arrest. Sudden death does not only involve persons with chronic diseases but may resulted to death.

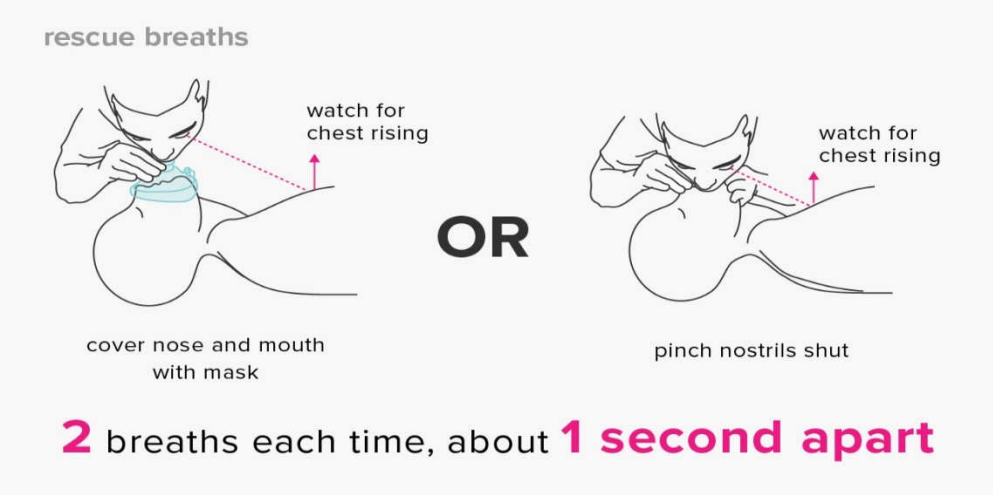
3.4 Stages in First Aid Emergency Handling

The Coach or Trainer who handle athlete must possess the knowledge of first aid. He should be trained on how to administer a standard first aid to victim athlete. He should be able to take the following steps or stages in first aid.

a. Diagnose– investigation and discovery of needs
b. Provide treatment–Application of First aid essentials
c. Transport athlete– or conveyance.

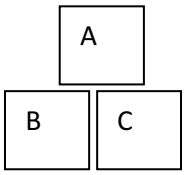
The following qualities are also expected to assist the First Aider/Coach;

3.5 Resuscitation TechNIQUES



The ability of the first aider to resuscitate a victim solely depend on the way he or she used the basic life support otherwise known as the ABC of basic life, thus;

A- Airway
B- Breathing
C- Circulation



1. **Airway:** The airway can be opened using two methods: (ii) head tilt
   - Place the palm of one hand on the victim head
   - Apply firm backward pressure
   - Lift the victims head backward as far as possible

   Jaw Thrust: This is used when cervical or spinal injury is suspected. After the mandibular bone is displaced forward, support the head carefully, without lifting it backward or turning it from side to side.

2. **Breathing:** There are many ways in restoring breathing in a victim. The first aider can use which ever method or technique most suitable and adequate. The methods are thus outline:

3. **Opes:** the victim shows sign of circulation? These signs are, normal breathing movement, coughing or a carotid pulse.

4.0 CONCLUSION

Having responded to your self-assessment test successfully. It is assumed that the above unit have been well learnt understood by you.

However you most practice emergency handing to make you improve on your ability to handle emergency

5.0 SUMMARY

Documentation in the process or attending or handling emergency cases is good proper record keeping is good too especially when you are thinking of giving quality care.

7.0 REFERENCES FOR FURTHER READING

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UNIT 2 OTHER COMMON EMERGENCY CARE CASES I

CONTENTS

1.0 INTRODUCTION

There are other cases that might present emergency situation to the athlete when they did occur as minor as they might seems to be they could be very serious to the athlete on the field of play, depend on their extent. They include etc

A sport man will need to be totally fit for him or her to participate in plays, especially competitive sports

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- List some other cases that could lead to emergency cases
- Describe their signs and symptoms
- Also state their possible causes
- Treatment and
- Preventions

3.0 MAIN CONTENT

3.1 Hemorrhage

This refers to a rapid and uncontrollable loss of outflow, which can be caused by a fear or damage to a major vessel carrying blood.

3.1.1 Types of Hemorrhage

There are three different types of hemorrhage or bleeding:

a. Arterial Bleeding

- Blood is bright red in colour
- It spurts at each contraction i.e. it jets out with heart beat
- Flow is pulsatile

b. Venous Bleeding

- Blood is dark red in colour
- It oozes i.e. does not spurt
- Steady flow

c **Capillary Bleeding**

- It does not spurt
- Slow but even flow

3.1.2 External Bleeding

These are bleedings that allow

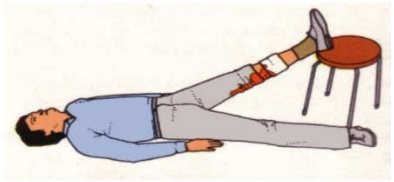
How to Diagnose External Bleeding

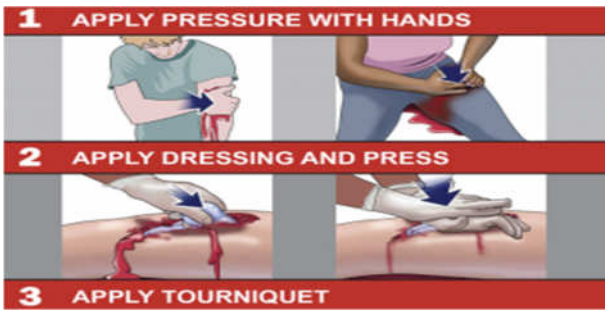
Controlling External Bleeding

b. Elevation

1) Elevate injured extremity so that wound is higher than heart.

2) Continue to apply direct pressure to site of bleeding.





i. Evidence of major external blood loss

ii. Symptoms and signs of shock

- Casualty complains of thirst
- Blurring vision faint and giddiness
- Face and leaves become pale
- Cold and clammy skin
- Fast but week pulse
- Restlessness
- Shallow breathing (Gasping for air)
- Unconsciousness may occur

3.1.3 Management of External Bleeding

The aim of managing bleeding includes the following:

1. Control of bleeding as soon as possible
2. Keep the wound clean and minimize blood loss and infection by dressing.
3. Arrange urgent removal to hospital.

a. Direct pressure

- ❖ Do not waste time for a dressing
- ❖ Place your hand directly over the wound and apply pressure continuously
- ❖ With available sterile dressing or clean cloth apply pressure until bleeding has stop 10-30 minutes.

b. Elevation

This can be used in combination with direct pressure.

- ❖ Elevate the affected part above the level of the heart to slow blood flow.

c. **Pressure Points**

- ❖ Arterial bleeding can be controlled by digital thumb or finger pressure at pressure points
- ❖ Pressure points are at places over a bone where arteries are close to the skin.
- ❖ Pressing the artery against the underlying bone can control the flow of blood to the injured part

d. Applying a Tourniquet

A tourniquet is a device use to control severe bleeding and life threatening. A standard tourniquet is a piece of web belting about thirty-six inches long with a buckle or snap device to hold it tightly in place. The width should be able to make it distribute pressure over tissues.

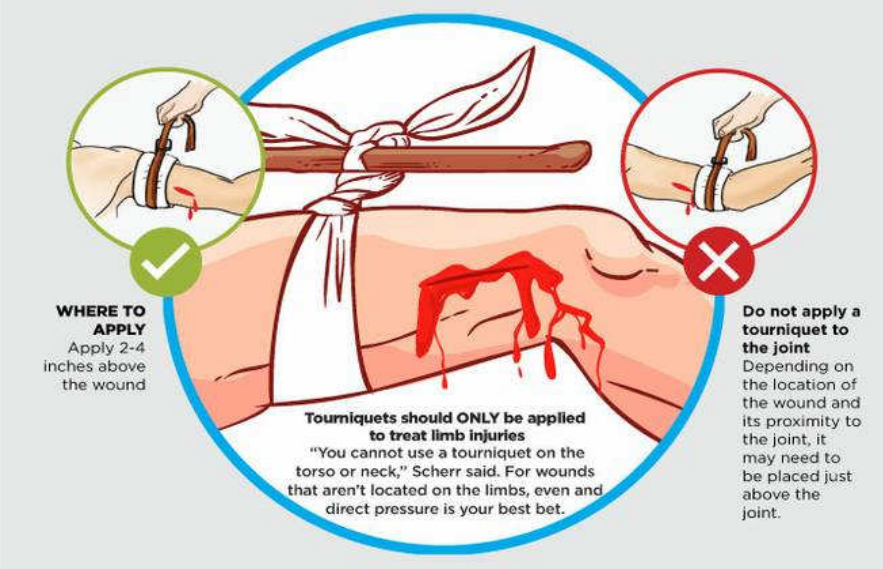
3.1.4 Improvised Tourniquet

In absence of an original tourniquet the first aider should be able to improvise.

The following materials can be improvised
Belt, suspender, handkerchief towel, cloth or other suitable materials.
NB. Wire cord should never be use; otherwise they will cut into the flesh.

3.1.5 How to use Tourniquet

- Put pressure over pressure point by placing the tourniquet between the wound and the heart
- Apply pad over the artery to be compressed
- In using improvised tourniquet wrap the material tightly around the limp twice and tie a knot on the upper surface of the limb
- Place a short stick and tie a full knot.



2. **Snow Blindness And Welders Flash**

This happens when eyes are exposed to glare by reflection of the sun or snow for a long time. It affects the cornea. This condition can also result from ultra-violet rays produced by welding

Signs and Symptoms
Intense pains
- Feeling of sand or pepper in the eyes
  Red, watery and sensitive to light

Treatment

1. Wash the eyes with cold water
2. Lightly dress both eyes with clean cloth or pad
3. See eye specialist

3.2 Hypothermia

This condition develops when the body temperature falls below 35° c (95° f). it occurs when:

- Environmental temperature is very low
- Inadequate protection against cold environment
- Exhaustion in cold climate
- Wearing wet clothes over prolonged period
- High altitude
- Unheated or poorly heated homes
- Aggravated consumption of alcohol-diabetic individuals
- Age accompanied by physical condition

Signs and Symptoms

1. Feeling excessive cold
2. Skin become pale
3. Intense shivering
4. Muscle in coordination with shared speech
5. Restlessness, confusion and irritability
6. Slow pulse and respiration
7. Loss of consciousness
8. Difficulty in breathing and heat blat

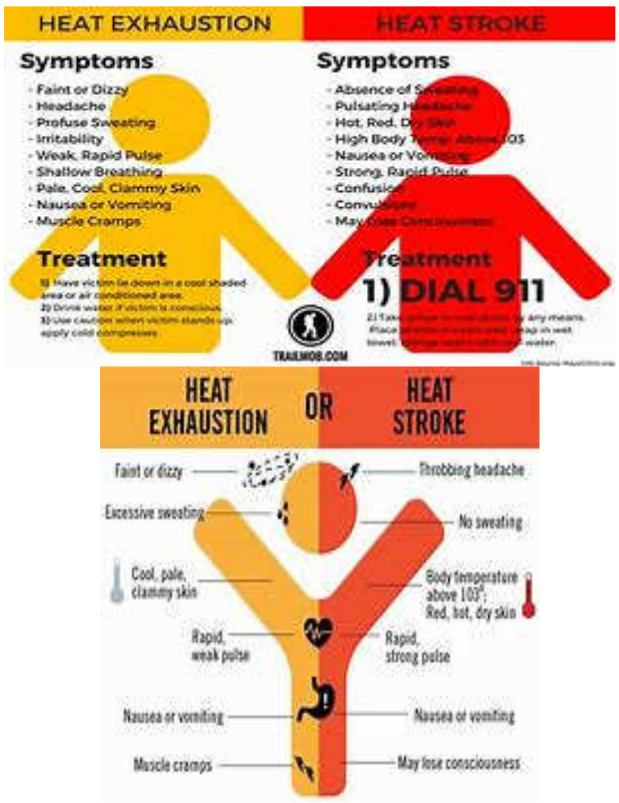
Treatment

1. Do not assume casualty is death because breathing and heart beat appeared absent
2. Cover the casualty with woolen cloth except the face
3. Place unconscious casualty in recovery position
4. Begin resuscitation process if breathing and heat stops
5. Shift to hospital.

NB. Do not place casualty's hands and arms in direct contact with the body as this draws heat from the body.
Do not give alcohol
Do not rub or massage the limb or encourage exercise

3.3 Heat Exhaustion

It occurs after heavy and prolonged sweating which have not been replaced by salt and water on extremely hot days
It can also occur in humid weather



Sympt1oms and Signs

- The individual is exhausted and restless
- Head ache develops
- Tiredness, nausea and dizziness
- Pulse is rapid but weak
- Fast and shallow breathing
- Fainting
- There is also "muscle cramps in the limbs and abdomen
- Cold and clammy skin
- Temperature may be normal or sub-normal

Miscellaneous

UNIT 3 COMMON OTHER EMERGENCY CARE CASES II

CONTENTS

1.0 INTRODUCTION

Other emergency injuries cases that could bring challenges to the athlete, coaches and trainer, may include: some miscellaneous injuries mainly from the athlete's life style e.g, Alcoholic, Hallucination, smoking, over anxiety, suicidal patient and epilepsy drug. The aim is to highlight some common social problems that could involve the first aider.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- List some antisocial problems that may involve the first aiders
- State how to prevent the hazards from this antisocial problem
- Mention the treatment to unconscious victim
- Define some key terms such as; stupor, coma etc
- Outline how to deal with epilepsy
- The symptoms of the hazardous problems named above

3.0 MAIN CONTENT

3.1 Alcoholic Hallucinations

This is an acute toxic state of the individual after a prolonged steady drinking Patient shows sign of;

ANXIETY; uncontrollable fear, irritability[7], agitation and insomnia. Talkative and pre occupied, visual, tactile and auditor}[7] hallucinations.

Management

- Place the patient in a well-lighted room to reduce agitation.
- Close bathrooms/closets to avoid shadow
- Keep the environment calm and non-stressful.
- Observe the patient closely-homicidal or suicidal responses are likely
- Stay with patient

3.2 Smoking

- Smoking is used as a custom or addiction.
- Large number of people smoke for;
- Pleasure
- Relaxation
- Relief from tension
- Sense of false security

Cigarette contains *1.5* % of Nicotine and there are at least sixteen different compounds which can cause cancer. The most common compound is *BENZOPYRINE. The* filtered cigarette can only remove *30%* or a little more of tar by weight. The solid particles are those of carbon with an average diameter of *100(f* of mm and these particles are arrested by filter.

How to prevent above Hazards

- Do not smoke
- If smoke, then smoke few sticks
- Inhale less frequently and less deeply
- Take fewer puffs from each cigarette
- Smoke cigarettes of low tar and nicotine content
- *Do Not Critisize Any Individual Who Smokes Excessively ,Rather Encourage Them To Adopt A More Refine Smoking Habit.*

3.3 Suicidal Patient

The individuals with suicidal tendencies may have suffered loss of either loved one, loss of property is feeling and gingering disappointment in status or integrity. Young boys who feel they have tried but failed examinations or in love or unemployed may try to commit suicide. Other risks are psychic illness jack of resource or those who have made themselves hopeless (as no one is hopeless)

Management

- Reassurance
- Make them understand the importance of life
- Prevent further injury through reminders of any kind
- Persistent cases should be referred to hospital

3.4 Epilepsy

This occurs due to brief disruption in the normal electrical activity of the brain.this may vary from loss of attention to muscular spasm and convulsions. It is sudden and unexpected.

- Loss of consciousness
- Aura and cry
- Falls to the ground and becomes rigid
- Breathing may stop
- Congestion of face
- Mouth and lips turn blue (cyanosis)
- Seconds after arched back develops
- Clenched jaw- which makes breathing noisy
- Gradually the clinic phase subsides and muscles relax
- Attacks usually last from 30 seconds to few minutes
- Deep sleep folio with-gradual recovery
- Confusion, fatigue and muscle sore, and headache

Treatment

1. if observed prevent casualty from falling
2. clear space around him, maintain airway and loosen tight clothing
3. when convulsion stop, place him on lateral position (recovery position)
4. allow him to rest
5. shift casualty to hospital

Forbidden Actions

- Do not move patients unless the position is in danger
- Do not put anything in the mouth of or try to open it
- Do not give anything to drink

Status Epilepticus

This is a condition where the casualty passes from seizure to seizure without gaining consciousness. This is to be considered as an emergency.

Management

- Shift the casualty to the hospital immediately

SELF-ASSESSMENT EXERCISE

i. What are the three forbidden actions in treating or assisting an epileptic victim?

4.0 CONCLUSION

Having read this course unit and successfully completed the self-assessment test, it is assumed that you have attained understanding of the emergency injuries cases.

5.0 SUMMARY

In this unit, you have learnt how to handle challenges from common emergency injuries cases which requires prompt and tactical treatment.

6.0 TUTOR-MARKED ASSIGNMENT

Circle the correct answer

1. How many stages is unconsciousness defined?
   a------1-------four
   b------2-------two
   c------3-------ten
   d------4-------six

fill in the blank space

2. First treatment of unconsciousness is_____
3. Define Epilepsy_____

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MODULE 3

INTRODUCTION

Some injuries may result to blood flow and some may not, yet damage has occurred to the body tissues, sports injuries are inevitable, many are their causes, some identified by their signs and symptoms. When injuries occurs, it doesn't always mean life ends there, proper diagnose is made and treatment is suggested and sort for, there by healing will be the result. Sometimes, for the occurrence of an injury, the prevention or avoidance is also discovered.

UNIT 1 ATHLETIC INJURIES

CONTENTS

1.0 INTRODUCTION

Different types injuries may occur to an athlete during sports and physical activities. some may be referred to as mild, some moderate and some moderate and some severe injuries.

Injuries besides their being mild or severe may still be identified by whether seen or not seen, also, there may still be need to know them by causes or where they have happened. i.e which part of the body is involve. Some injuries may still also be identified by the extent of damage on the body part. In this module, even the sports where the injuries are prevalence will also be discussed.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and correctly explain each of the key terms.
- Name the classes with examples
- Describe the various classes of wounds and
- Their causes.

3.0 MAIN CONTENT

3.1 Definition and Classification of Injuries

An injury can be define as a break or damage to the body tissues it could further be known and define by causes or symptoms injuries became more dangerous delicate when they become infected with germs.

The mechanism and mechanics of the injuries and the symptoms are stated together in the classification examples.

Generally, wounds are classified into

Two Classes

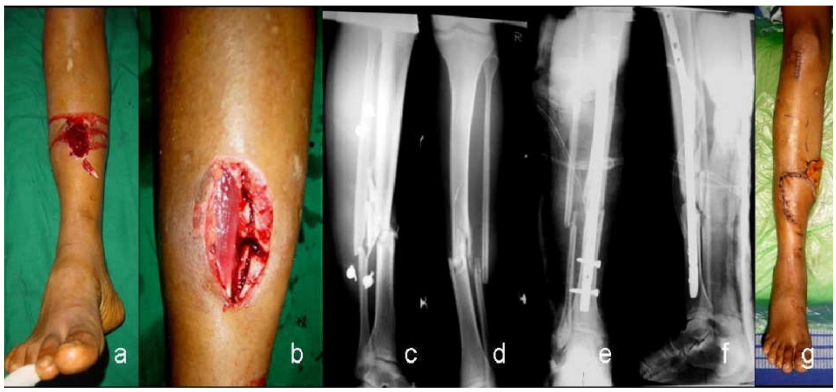
1. Open
2. Close

Wounds injuries

Further Classification includes

Fingers, toes (of hands and legs) ears and nose etc.

These are wounds that are visible, as the injuries allows the damaged tissues to be seen and blood flow or ooze out through the broken damage tissues.



Examples of open of wounds on (and around playgrounds) include;

(a) **Abrasion:** These are wounds that are caused by rubbing or scrapping the skin against something, especially playgrounds or objects and surfaces that are somehow rough and/or unmaintained. It is further characterized

Open wounds

by the peeling of the skin layers leaving the injured weeping. Sometimes this might be with signs of blood like water from the area.

(b) **Incised wound:** Caused by sharp objects (in and around playgrounds),like- knife, razor blade, broken glasses, or even grass. It is further characterized by sharp edges and normally will bleed freely as the blood vessels and tissues might have been damaged.

(c) **Lacerated wounds:** This is commonly caused by blunt edges instruments or objects, with in and around playgrounds. These instruments or objects are with anunevenedges, like, broken glasses or bottle, jiggered instruments etc. the skin or tissue may be partially or completely torn away or apart, depending on how it happened.

(d) **Punctured wounds:** are wounds caused by a stab from pointed objects or instruments, e.g. spikes, nails, javelin spears, bullets swords etc

It may result to a straight line damaging all the tissues and skin involved. It is further characterized by a narrow entry point which continue to widen underneath. If it is caused by a penetrating object like gunshot, the exit point is always wider and more destructive.

(e) **Avulsions wounds**: Involves the tearing loose of a flap of skin which may remain hanging or torn off altogether. The most commonly being the amputated of body parts such as =: legs, fingers etc.

Treatment and Prevention of Open Injuries

This is simply referring to the way that you think of and act or deal with the sports injuries the way you think out the action you will use to deal with open injuries may lead to the healing of such injuries. And also, the way you think out your action of prevention of open injuries may result to the preventive measure take to obtain injuries for participation in sport. It must include the following sure ways, if you must get to healing destination:

i. Stop bleeding if bleeding is involve or control that bleeding, if you must get to healing destination: use direct or indirect way of stopping the it by (a) applying pressure or (b) using the pressure point closer to the injury and between the heart and injury. More methods of controlling bleeding are discussed under HEMORRHAGE.

ii. Prevent infection to the injury by cleaning or/and keep clean, use donut pad, soap and water, remove any implement that might have cause the injury.
iii. If it requires stitching and you can, do it, if you cannot involve the physician, keep the sutured area clean and dry.
iv. Handle injuries gently
v. Use sterile materials. Don't touch the materials that will be over the injury. Touch only the edges.
vi. Apply dressing (bandages) snugly, not too tight. Keep dressing clean and dry
vii. When dressing is wet or soaks, remove and replace or seek help

3.2 Prevention of Open Wounds

i. Athletes must ensure they wear or put on appropriate dressing to protect the body (skin and underlying tissues).
ii. Ensure the play area is free from dangerous objects, e.g. nails, stones etc
iii. Inspect all materials or equipment's in performance, to ensure they are in order.
iv. For contact sports, ensure you apply caution to avoid hard or rough play that can result to cuts or injuries.
v. Shoes should be properly fitting, and be won with lubricants, if too tight
vi. Usage of protective gadgets such as shin guards, shoulder pads, groin cup, chest pad, hand gloves etc should be put on before play.

SELF-ASSESSMENT EXERCISE

Attempt all the questions, circle the correct option

i. Classes of Injuries are:
   a. 1
   b. 2
   c. 3
   d. 4
   (√) tick True or False the correct option
ii. 2. T F: examples of open wound is only 3

4.0 CONCLUSION

Having successfully completed your self-assessment test. It is assured that the definition classes and further classes of injuries was learned

5.0 SUMMARY

In this unit, you have learnt how to handle challenges from common emergency injuries cases which requires prompt and tactical treatment.

6.0 TUTOR-MARKED ASSIGNMENT

3. T F: In closed injuries you see blood
4. T F: Gunshot is an open injury
5. T F: Lacerated injury is tissues for away completely only

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UNIT 2 CLOSED INJURIES

CONTENTS

1.0 INTRODUCTION

Injuries not visible with the eyes, only the signs and symptoms suggest the present of such injury. They are always very serious injuries that can result to fatal consequences. They must be considered as such and handled professionally

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define correctly the key terms
- List the example of closed injuries
- Explain their characteristic
- State the sign and symptoms
- Suggest some treatment close injures
- Preventive measure

3.0 MAIN CONTENT

3.1 Definition and Example of Closed Injuries

These are injuries that are not visible with the eyes, only the signs and symptoms present the evidence of injury
Example of closed injuries include

a. Bruise or contusion
b. Dislocation and subluxation wounds
c. Fracture wounds
d. Strain and sprain wounds
e. Muscle pull wounds
f. Cramps
g. Spasms

3.2 List and Explain

3.2.1 (a) Bruise or contusion wound

The bruise or contused wound is a closed wound in which the soft body tissues beneath the skin are damaged excluding the skin. These wounds are marked by local pain and swellings with some black or blue coloration (ecchymosis).

This could be as a result of the vessels that are damage that permit blood to ooze out into the muscles, causing pains and swollen of the area involve.

They are always caused by a blow or bang mostly from a fall during play.

It is commonly associated with internal bleeding when a large artery is cuter damage.

The treatment is the application of cold compress or use ice block especially for the first 24 hrs or 72 hrs fora large areas i.e big muscles.

(b) Dislocation wound

This is by a sudden twist or pull of a joint while in motion, or a blow to the joint also in motion, causing the bone to shift from its position.

The shift could be of two kinds

i. Partial dislocation or (Subluxation)
ii. Complete dislocation (Luxation)

The signs and symptoms are same as that of contused wounds, as if the injury could also might have led to the damage of capillary or vesseles supplying the joint.

The treatment is same as in confused wounds. However, dislocation treatment may include the use of splints dressing, add up to the application of cold or ice compress.

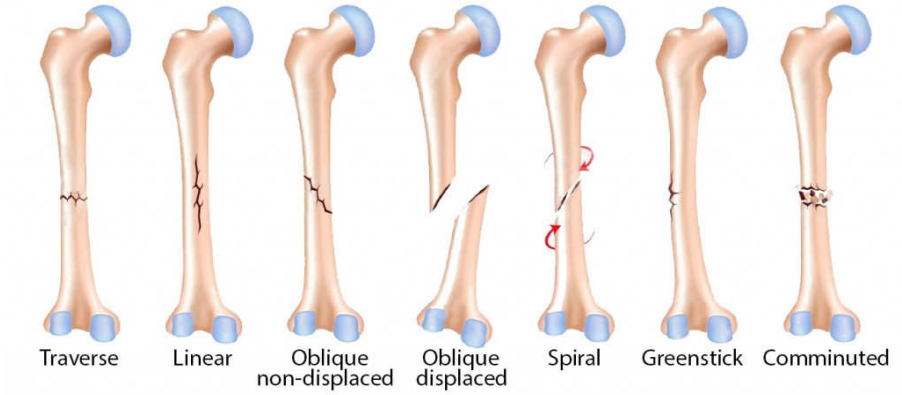
(c) **Fractured wounds**

Definition: This is the breaking or damage to the continuation of bone or the breaking of the bone (periosteum). This includes even a crack on the bone.

Causes include:

(i) Direct Force breaks directly at the point of force
(ii) Indirect Force (bone break away from point of force
(iv) Force of a muscular contraction (violent contraction)
(v) Force of ligaments (wrenching or ‘twisting’ of joint.

Types of Fracture



(i) Green Stick Fracture (commonly with infants) as the bone is not yet completely formed, hence it mostly bent and break.

(ii) Simple (closed) fracture– This does not involve damage to the skin.

(iii) Compound (open) fracture – involve the bone piercing even the skin

This involve damage to the skin, as the bone breaks. i.e as the bone breaks, it penetrates to the surface of the skin, this results to extensive blood loss and probably infection.

(iv) Complicated (closed and open) fracture;

It is associated with injury of blood vessels and nerves.

Further Classification includes

- Transverse fracture
- Longitudinal fracture
- Oblique and
- Spiral fracture – all these happen when a simplefracture involve infection.
- Comminuted
- Depressed and
- Compressed fractures, etc.

Signs and Symptoms

- Pains
- Swellings and discoloration of affected part
- Deformity of affected part or false limb, (joint).
- Tenderness
- Coarse bony grating could be heard
- Shock is likely also

Treatment of Fracture

- Ensure breathing and consciousness, before the fracture
- First aid or treatment of fracture injuries start at the scene of fracture
- Immobilization of the affected part first
- The use of bandages include the following consideration:
  - (i) Use the uninjured limb as splints
  - (ii) Do not apply bandage over fractured injury
  - (iii) Bandaging should not be

- Too lose or
- Too tight

Transport victim to hospital for further care and treatment

(d) **Strain and Sprain wounds:**

These are injuries that takes place at the joints or structure around the joint commonly caused by impact from a blow, fall or twisting the joint from a sudden movement or unbalanced motion.
Strain– is when the tendon structures to the bones are damage or injured.
Sprain injuries occur when the ligaments and cartilage structures are damage or injured.

Just as in the case of confused or dislocation injuries the treatment of strain and sprain start with the immediate application of cold or ice compress or cold spray for hours as earlier stated in the treatment of confused wounds.

SELF-ASSESSMENT EXERCISE

i. Common treatment of closed (except fracture) injuries is
   a. cold compress
   b. signs and symptoms
   c. splints
   d. immobilization

ii. a sprain involve injury to the _____

4.0 CONCLUSION

Having successfully completed the self-assessment test for this unit is assured that you have learnt the contents of the unit successfully

5.0 SUMMARY

The use of ice in the handling of closed injuries is professional and must be seen and treated as such injuries respond to care when they are well

handle otherwise the process treatment and healing could be more worst. Both open and closed wounds should be handled to avoid infections

The preventive aspects is not by proper warn ups conditioning or fitness and also the proper use of proper fire wears gadgets

6.0 TUTOR-MARKED ASSIGNMENT

1. _____ is the displacement of the bone at the _____
2. Define fracture of the bone Circle true (T) or false (F)

5 T/ F A compound fracture is easily identified by bone protruding through the skin

6 T/ F in some cases ice and elevation may be used to treat swelling result from fracture

7 T / F pulse and sensation must be rechecked after splinting a dislocation injuries to the body muscles

8 _____ describes injuries to the body muscles

9 Strain describes an injury to the _____

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UNIT 3 MUSCULO-TENDINOUS INJURIES

CONTENTS

1.0 INTRODUCTION

Musculo–tendonous injuries are responsible for a significant proportion of injuries sustained by athletes and participants in recreational activities.

Musculo–tendonous injuries have a high risk of recurrence.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and explain correctly the key terms
- Mention the different classification of muscular injuries
- State the mechanism and machines of athletic injuries
- Outline the factors responsible for muscle injury

3.0 MAIN CONTENT

3.1 Musculo–Tendonous Injuries

Musculo – Tendinous Injuries are responsible for a significant problem of injuries sustained by athletes and participants in recreational activities. Musculo – Tendinous Injuries have a high incidence of recurrence.

Almost half of all injuries in certain sports are Musculo – Tendinous in nature, and the majority of Musculo – Tendinous Injuries are acute muscle strain or pull.

Muscle strain is a partial or complete tear of the Musculo – Tendon Unit. Strain do not only result in significant loss of time from sports and other daily activities, but are also a frequent source of pain and impaired performance following return to competition too early, especially in sports demanding great power and speed (Garret, 2003).

Epidemiology Studies have documented frequency and disabling potentials of injuries in many sports.

Classification of muscular injuries
Based on clinical presentation the injuries are classed into types;

TYPE I. Muscle Soreness – Occurs 24 – 48 hrs after an unaccustomed vigorous exercise or extreme exertion delayed on set of muscles soreness – caused by small tear within the muscles tendon unit.

TPEE II. Acute disabling pain from a muscle tear, ranges from tear of a few fibers with fascia remaining intact to complete tearing of muscle and fascia.

TYPE III. Muscle soreness or cramp that occurs during or immediately after exercise astrology is not known but many attribute it to an accumulation of waste products resulting from prolong intensive work.

3.2 Mechanism and Machines

Muscle tear and strain – excessive tension on contracted muscles. Muscles tear results from violent contrition during an excessively forceful stretch, often associated with failure of synergistic action in conjunction with antagonistic muscle action.

Tension in Musculotendinous unit is related to;

1) Intrusive factor/component – active force production of the muscle itself caused by interaction of the contractile protein – (actin and myosin) and is proportionate to the overlap between thick and thin filaments of Type II – Phasic – more force and TYPE I – less force
2) Extrinsic component – passive force production due to stretch over one or more joints passive component is associated with the connective tissue within the muscle tendon stretched beyond the length where overlap occurs between actin and myosin filaments. Tension which develop in the muscle in response to large stretch is due to the connective rather than the contractive proteins (Borg, 1999).

Tension which occurs as a result of the active component in an activated muscle must occur within the physiological length of the muscle, but beyond that most of the tension is due to the connective tissues element.

Hamstring muscles group injuries are reported to be the most common muscles injuries and they generally occur during sprinting of high speed exercise.

3.3 Factors Associated with Muscle Injury

- Inadequate or no warm-up
- Incorrect, inadequate or no stretching
- Inflexibility, weakness, strength imbalance
- Poor conditioning, overall fatigue localized muscle fatigue, undernourished muscle, muscle weakness due to scarring from a previous injury, steroid injections excess or unexpended cool – down.

Almost half of all sports injuries are musculotendinous origin (Bass, 1987), and the majority of musculotendinous injures are a cute muscle strains or pulls. Strains do not only result in significant loss of time from sports and other daily activities, but are also a frequent source of pain and impaired performance following a rehabilitation back to competition, especially in sports demanding great power and speed.

SELF-ASSESSMENT EXERCISE

i. T/ F muscule – tendineous injuries are the most sustain injuries in sports

4.0 CONCLUSION

Having successfully completed the self-assessment test, it is assumed that you have learnt the information in this unit.

5.0 SUMMARY

Major causes of muscular injuries have been highlighted in the text, but good conditioning and good living together with proper warm-up before your activity, for the day will be very helpful in reducing or preventing muscular injuries.

6.0 TUTOR-MARKED ASSIGNMENT

1. State a. intrusive component of muscular injuries
2. Extrusive components of muscular injuries:
3. Explain types of the forces causing muscular injuries:
   Circle T for True or False

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MODULE 4

INTRODUCTION

Injuries are accidental and unforeseen; they are also inevitable, they occur whenever they have to occur. However, there are certain factors that can predispose an athlete to athletic injuries; Also, you will learn about the various process of articulation of the human body (leverages), that help the body movements. These factors include;

Unit 1 General Nature of Athletic Injuries
Unit 2 Injuries to the Joints Upper Extremities
Unit 3 Injuries to the Lower Extremities

UNIT 1 PREDISPOSING FACTORS OF ATHLETIC INJURIES

CONTENTS

1.0 INTRODUCTION

An athlete may be prone to injuries because he is predisposed by certain natural or acquired conditions, the difference is briefly discussed in this unit. The discussion looked into the structure of the sport or game, nature and what is required to execute such sport or game.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and explain the key terms.
- List or name the different factors that may predispose an athlete to injuries.
- Discuss the different factors
- Mention the kind of sports involve
- And the kind of injuries likely to occur.
- State the body articulation processed types.

3.0 MAIN CONTENT

3.1 Predisposition Factors

Injuries are accidental unforeseen, they are also inevitable, they occur whenever they have to occur, but certain factors may predispose an athlete to athletic or sports injuries and this factor include;

3.1.1 Genetic/Congenital Factors

Some inherited and acquired conditions may predispose an individual to athletic injuries. This may include; weak muscles tone, a hole in the heart, sickle-cell anemia, type 1 diabetes etc.

These all have the potential of excluding or exposing someone with the chances of injuries in sports.

3.5 Anatomical Conditions

Some kind of body anatomy structure may predispose an athlete to athletic injuries. Such may include; Kyphosis, Lordosis which may pressure the heart for normal functions. Other examples include an athlete with Knock-Knees, Flat-Foot, and Big Toes etc. Athletes with such conditions may be prone to injuries in their chosen sports or may not be allowed in the sports of their choice.

3.6 Certain Abnormalities

Some defective agent's e.g environmental equipment and mechanism may also predispose an athlete to athletic injuries.

The consideration may also include the following body 'Somato type, dehydration, Humidity, etc.

3.7 Nature of Some Sports

The natural way some sports are structured may also predispose the athlete to sports injuries. Sports like Boxing, Kick-boxing, Wrestling including all Combat Sports. The list continues to include, soccer and other contact sports. Athlete in these sports are always prone to sports injuries.

Musculo – Tendinous Injuries are responsible for a significant problem of injuries sustained by athletes and participant in recreational activities. Musculo – Tendinous Injuries have a high incidence of recurrence.

Almost half of all injuries in certain sports are Musculo – Tendinous in nature, and the majority of Musculo – Tendinous Injuries are acute muscle strain or pull.

Muscle strain is a partial or complete tear of the Musculo – Tendon Unit. Strain do not only result in significant loss of time from sports and other daily activities, but are also a frequent source of pain and impaired performance following return to competition too early, especially in sports demanding great power and speed (Garret, 2003).

Epidemiology Studies have documented frequency and disabling potentials of injuries in many sports.

SELF-ASSESSMENT EXERCISE

i. T F The major types of body articulation movement are five in number.
ii. T F Kinesiological factor is not considered in the factors that predispose someone to injuries.

4.0 CONCLUSION

Having successfully done the self-assessment test and completed it, it is assumed that you have learnt all information’s in the unit.

5.0 SUMMARY

As someone working with athletes, working to ensure fitness, it is important for you to be able to recognize the different natural injuries distinguishing between levels of types and severity. So as you can apply appropriate first aid to help your students’ athletes.

6.0 TUTOR-MARKED ASSIGNMENT

1. Define Congenital_____
2. List four of the factors that predispose an athlete to injury:
   a. _____
   _____
   b. _____

Circle T for True or F for false.

3. T F Genetic is another word for congenital

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UNIT 2 MECHANISM OF INJURY OF THE UPPER EXTREMITIES

CONTENTS

1.0 INTRODUCTION

There are different causes of athletic injuries, these injuries also happen all around the body. As the term mechanical implies, the injuries are caused generally by forces from a blow, fall, twist or otherwise, these forces are physical or mechanical to cause tear, inflammation, sprain, strain, fracture, and dislocation etc of the extremities.

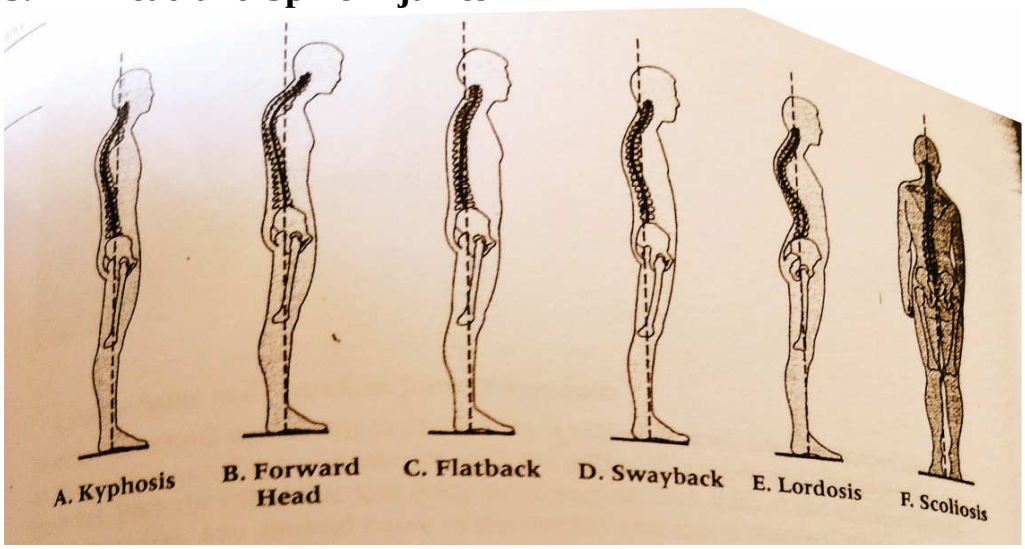
2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and explain the key terms.
- Mention common areas involve in Athletics
- State the different structures affected
- Discuss their symptoms and treatment.

3.0 MAIN CONTENT

3.1 Head and Spine Injuries



This together is referred to as the ‘central nervous system, which control all the body activities through the ‘Sensory Neuron’ and the ‘Motor Neuron’.

The control of the body activities i.e body gland organs and other parts of the body is done by the control of nervous systems in a ‘checks and balance process.

The process is produced by (a) The Parasympathetic system and (b) The Sympathetic system. Injuries to the head or brain and to the spine or

column could be very risky or dangerous. Parasympathetic-control is for all the voluntary activities and actions, and sympathetic-controls is for the voluntary activities or actions.

3.2 Head and Brain Injuries

The head is the body structure that cage or house the very sensitive organs, the brain.

Unless otherwise, sports injuries to the head and spine are always 'traumatic' from a direct blow, fall or landing, vibration of the head, collision, etc.

Injuries to the head or head injuries will include fracture, dislocation and sub luxation, contused injuries and brain concussion and hemorrhage

3.3 Unconsciousness Information

Consciousness is an interference which is concerned with the function of the brain. The seriousness or level of unconsciousness can be determined by testing the actuality's responses to sound or touch.

a. Level of Responses

The level of responses are the stages which a casualty passes during progression from the conscious level to unconsciousness.
Stage 1. Responses normal to questions and conversation.
Stage III, He regularly responds to questions.
Stage IV. He obeys only commands.
Stage V. He responds to pains only.
Stage VI. He does not respond at all.

In general, there are basically two stages of unconsciousness.

1. **STUPOR:** At this stage the casualty react to light.
2. **COMA:** Here the casualty does not react to light nor stimuli.

b. Treatment

1. Maintain the airways open.
2. Remove any lose dentures or detached teeth and clear the mouth of any vomit or blood.
3. Loosen any tight clothing around the neck, chest or waist.
4. Where breathing cease start artificial ventilation immediately
5. Proper examination to find other causative factors
6. Place him on a lateral position (i.e face sideways with chest abdomen on the floor).

7. Manage serious wounds, fracture e.t.c.
8. Where the injury is of spine,, do not remove the patient
9. Check level of responsiveness of the pulse breathing e.t.c
10. Reassurance when recovered

This normally occurs in children between the ages of 1- 4. It is accompanied with raised temperature which could be as a result of infectious disease, throat or ear infection.

c. Symptoms and Signs

- High fever
- Flushing and sweating
- Twitching of muscles
- Upturned eyes (shunting)
- Stiffness of head, back and spine.
- Held breath
- Face congestion
- Throth from the mouth foams I

Treatment

1. maintain airways and ensure fresh air
2. loosen all tight dressing
3. treat as unconscious patient
4. cold sponging to cool down temperature
5. shift him to hospital

Concussion – classified into – mild, moderate and sever injuries – symptoms – headache, dizziness, nausea, and symptoms of disorientation and confusion, stalking at the point of contact – caused by temporary stoppage of blood supply to the brain.

Injuries are inevitable and sports with higher risk of injuries to the head include; gymnastics, basketball, soccer, football, rodeo, diving or water sports and extreme sports.

Every injury to the human is a potential risk and serious that could not only ‘maim and mars but in capacitate, but cause death, including sports injuries.

With the examples of players dieing on the pitch of play, the like of ‘SamuelOkparaji and so many others’. It is very needful to educate every stakeholder, at all levels, in sports, about sports medicine (sports injuries)

3.4 Joints Injuries

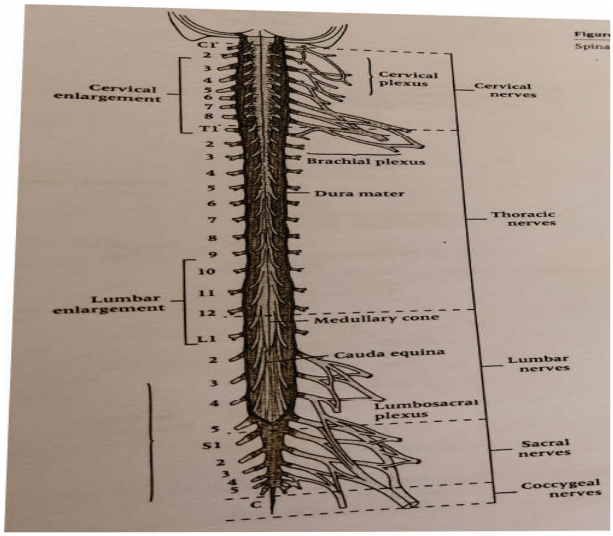
Joints or 'articulations' allow movement according to their range of motion. There are three categories of joints:

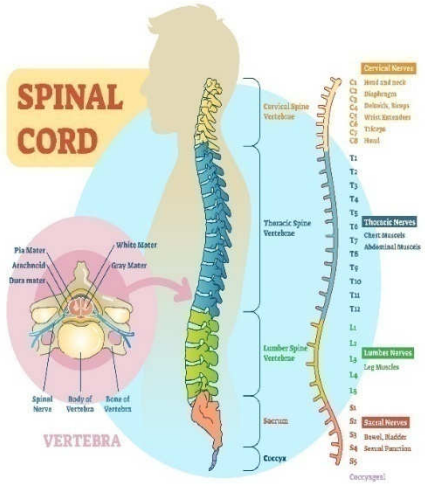
1. Fibrous: (immoveable joints) includes bones of the cranium or skull e.t.c
2. Cartilaginous; (slightly moveable) includes the elbow, knee, finger e.t.c the joint provides the force or forces which every human action or movement takes place including sporting activities. This is possible by the articulation of the bones (to allow human structural movement) and the musculo-tendinous contraction. Hence, injuries to these basic human structures could be very serious.

MECHANISM OF ATHLETIC INJURIES TO THE UPPER EXTREMITIESTRUNK INJURIES

This is the cage like structure that forms the main part of the human body. This cage like structure is also known as the 'thoracic' which housed the vital organs of the body (the heart, lungs, kidneys e.t.c) It is formed by the articulation of the ribs the sternum and the thoracic vertebral. Injuries to this part of the body is from fall, hits blows to the parts of the trunk, structures like ligaments tears, ribs or diaphragm strains or pains.

ATHLETIC INURIES TO THE UPPER EXTREMITIES





B) Injuries to the Spine

The Vertebral Colum consist of 26 bone segments called the 'vertebrae'. The column permits three (3) movements, namely, flexion, extension

and rotation. The inter-vertebral disc and opposing curves permit flexibility or resilience.

The spine also serves as support and attachment for the ribs and muscles, and for the pelvis and head.

It serves as a shock absorber, a body weight distributor, and as a factor in locomotion.

Sources of sports injuries to the spine, include: the way American football is played – driving the head, into an opponent's body during dribbling and passing the ball, causing the bones of the column to fused together, or rupturing the case, the head is driven into a shallow water: in this case the head is driven into the basement of the pool, thereby causing the column to also crack, break or dislocate together and rupturing the bony arrangement of the spine.

Another example is the American wrestling, generally the nature of most sports becomes sources of injuries to the athletes. Most common injuries include;

i. Cartilage tear as in American wrestling
ii. Ribs strain and sprain also in American wrestling
iii. Compression injuries resulting to ribs cracks from severe extended falls. Although a good conditioning programming with good protective equipment's, when used, will minimize the impacted injuries.
iv. Injuries to the shoulder Joint:
the shoulder joint is an insecure joint formed by the articulation of the humorous with the glenoid fossa of the scapula.

It possesses a remarkable free rotational movement as a result of the looseness of the capsules and the ligament surrounding it which allows a considerable range of movements since the joint maintain its integrity mostly through ligamentous structures, it is susceptible to server strains and torsion, dislocation and luxation.

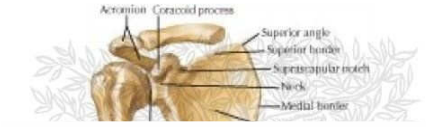
3.4.1 Injuries to the Shoulder

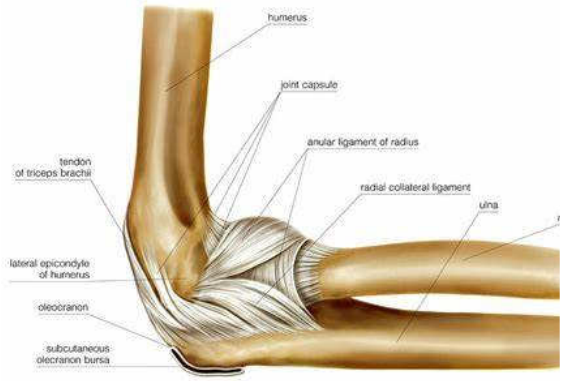
American wrestling or football, soccer etc provides good examples of sports injuries sources to the shoulder, the shoulder been used as a driving force or landing pad during American football or wrestling respectively. In tumbling activities as in gymnastics and Judo, the shoulder is used as the point of contact with the mat using own weight and the opponent weight to provide the force.

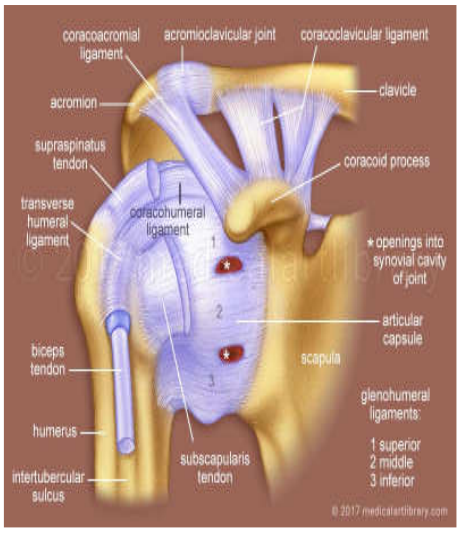
d) The Elbow

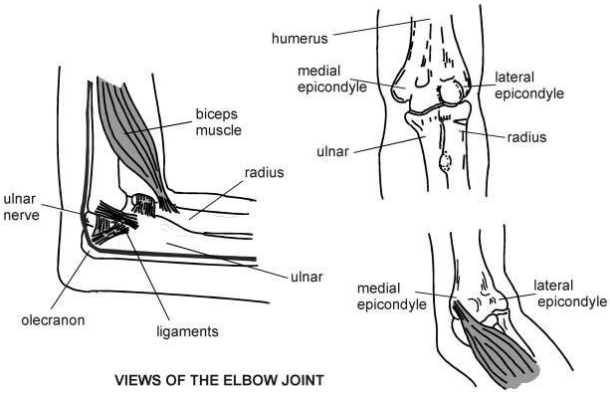
Joint formed by the articulation of the humerus and the radius and ulna bones. It is majorly secured by the radial collateral and annular ligament structures, supported by the Olecranon to check hyperextension process which may sometimes be ruptured in an attempt of hyper-extension of the joint.

Sports like tennis contribute to injuries to the elbow joint, known as 'Tennis elbow'. Other sports that can result to injuries to the elbow joint include Javelin throwing. Other sports that carries increased risk of injuries include; Hockey, Rugby, Ice Skating, Baseball, Skateboarding etc.





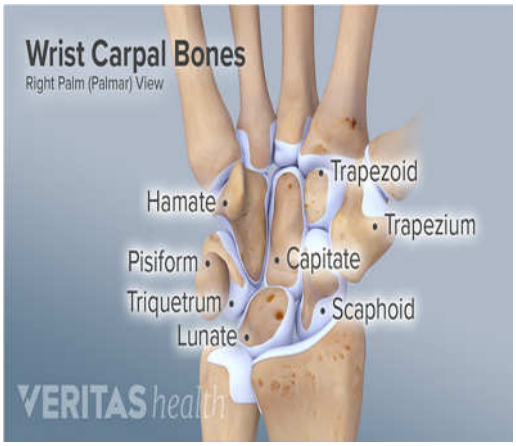




VIEWS OF THE ELBOW JOINT

The injuries to the elbow joint and hand include fracture, dislocation and subluxations, contusions sprains. Sports that contribute injuries to the wrist and hand of the athletes mainly include, Basketball, Volleyball, and American Football, soccer, Gymnastics, etc.

3.4.2 Injuries to the Wrist and Hand



This joint permit mainly flexors and extensors the joint is formed by the articulation of the navicular, carpals and metacarpals, and the phalanges. It is supported and fortified by the retinaculum, the ulnar nerve, Flexor capercaillies, median nerve, Flexor carpi ulnar is, carpal tunnel and Flexor digitorum superficialis structures.

SELF-ASSESSMENT EXERCISE

i. Thenerves passes through the _____ tunnel of the wrist.
ii. Thebiceps branch is most often rupturedby_____ motion in sports.

4.0 CONCLUSION

Having successfully completed the Self-Assessment test, it is well assumed that you have learnt the information in the Unit.

5.0 SUMMARY

Upper extremities affect the appendicular skeleton as well as the muscles, ligaments, tendons, blood vessels, and nerves that cover the bones.

Dislocations and Subluxations are as serious as fractures to an athlete because these injuries involve the soft tissues. Often, Soft tissues injuries (Sprains, Strains, tendonitis, etc, can result in significantly limited range of motion and require long complex rehabilitation programme. Proper assessment of such injuries is vital to appropriate treatment.

6.0 TUTOR-MARKED ASSIGNMENT

Complete the following:

1. The Muscles affecting movement of the shoulder include the (a) and
2. The major nerves of the arm include the and _____

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UNIT 3 INJURIES TO THE LOWER EXTREMITIES

CONTENTS

1.0 INTRODUCTION

There are different causes of athletic injuries, these injuries also happen all around the body. As the term mechanical implies, the injuries are caused generally by forces from a blow, fall, twist or otherwise, these forces are physical or mechanical to cause tear, inflammation, sprain, strain, fracture, dislocation etc of the extremities.

2.0 OBJECTIVES

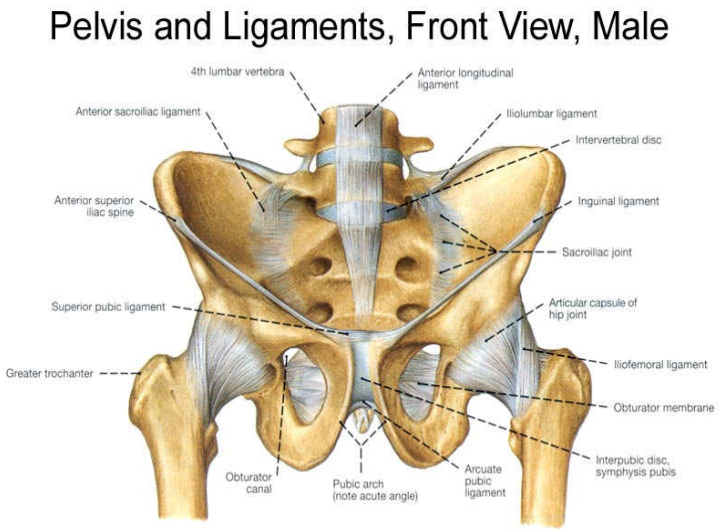
By the end of this unit, you will be able to:

- Define and explain the key terms.
- Mention common areas involve in Athletic
- State the different structures affected
- Discuss their symptoms and treatment.

3.0 MAIN CONTENT

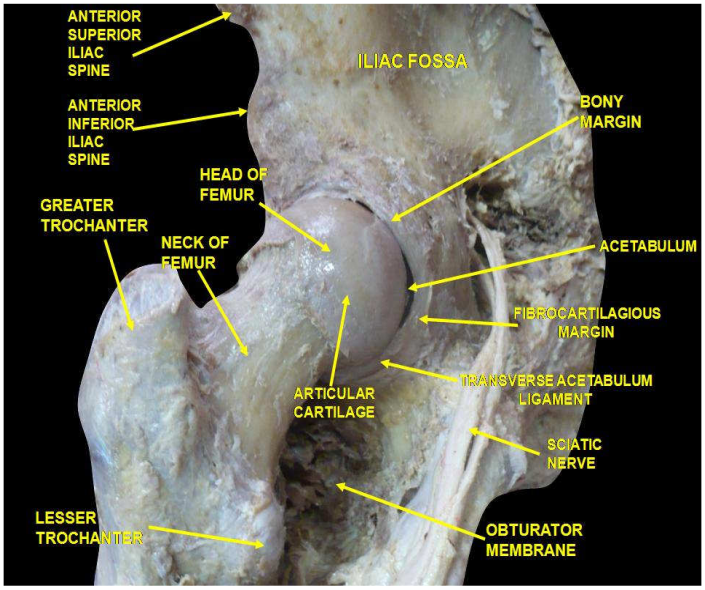
3.1 The Pelvic and Thigh

This is a ball and socket kind of joint formed by the articulation of the ball protrusion on the proximal medical femur, with deep bony socket the acetabulum in the pelvic bone.

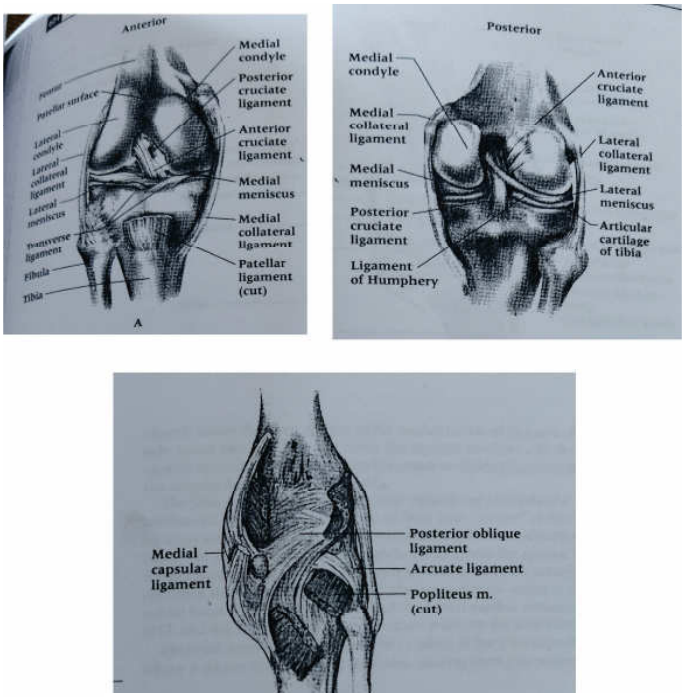


Fortified by the acetabulum ligaments, tensions and muscles, the joint allows abduction, flexion, extension, medical rotation, and lateral rotation and lateral rotation of the femur.

Sources of injuries of the pelvic joint include, contact sports, sports that involve jumps and landing from heights. This can cause the rupturing of the ball head on the end of the femur. Also, injuries of dislocation and subluxation could happen to this joint. Contusions injuries especially to the muscles and tendons, causing strain at the joint



3.2 The Knee Joint



The ligaments of the knee. **A,** anterior view. **B**, posteriorview**C**, capsular ligaments, posterior view.

Articulated by the Femur and Tibia, and Fibular bones. Supported with the crucial medical and collateral ligaments and Menicus. The tenders, increase stability to the joint as the joint seems the most unstable and secure joints in the human body.

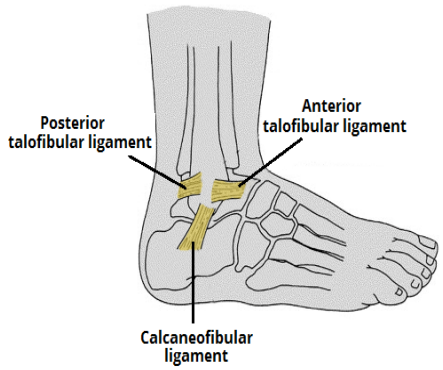
Sources or injuries to this joint include all sports both individual and team, contact and non-contact sports. The mechanisms of injuries to this

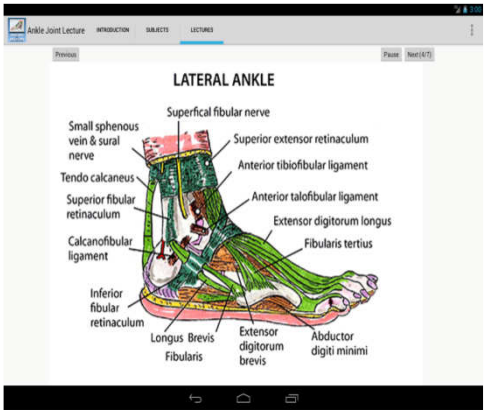
joint include the rupturing of the structures that secure and bring stability to the knee.

The Knee joint permit only flexion and extension any act of hyper-extension could bring a severe consequences. Forces administered downward by a fall, hit upward to the sides of the knee joint, could also lead to a serious injury.

The injuries to this joint include; fracture or crack, dislocation, subluxcation, sprains and strains of the bony, ligaments, contused etc to the structures of the joint.

3.3 Injuries to the Ankle Joint





Formed by the Tibia and Fibula on the Talus joint, also, the metatarsus and phalanges joints.

The joint mostly permit flexion and extension.

Injuries like dislocation and subluxation, fracture, strain and sprains are common to this joint.

The joint is prone to injuries as it is somehow carrying the whole body weight, hence, any slight imbalance, could result to any of the injury already mentioned. Sports like, soccer, basketball, handball, track and field and in fact all sports contribute injuries to this joint.

SELF-ASSESSMENT EXERCISE

i. The _____ moves freely with the tibia and fibula.
ii. The major components of the lower extremities are, the_____ and _____

4.0 CONCLUSION

Having successfully completed your Self-Assessment, it is assumed that, you have learnt the information's in this unit.

5.0 SUMMARY

The Pelvis and Lower Extremities provide good support and mobility to the body as a whole because of the size of the bones and muscles to the pelvis and hip. Sports related fractures to the Pelvis, and hip areas are not as common as they are in other parts of the body. Such injuries do occur, however and when they do excessive internal and external bleeding is a life-threatening possibility.

6.0 TUTOR-MARKED ASSIGNMENT

1. Define and explain correctly the key terms
2. _____ is a Sprain of the caused by a kicking or pushing motions.

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MODULE 5

INTRODUCTION

The human body possesses the ability and capability to adapt whom exposed to new conditions or situation (challenges). It is this process of adaptation that is referred to as conditioning.

When the condition or situation is well or technically manipulated, the ability or capacity could be well enhanced. For instance, one can always increase his strength or power when he undergoes resistance training.

In this module, you will learn about conditioning, as it helps to build a healthy and strong body for performance to his usual and normal activity.

Unit 1 Conditioning for Fitness and Performance
Unit 2 Therapeutic Modalities for Rehabilitation
Unit 3 General Prevention of Athletic Injuries.

UNIT 1 CONDITIONING FOR FITNESS AND PERFORMANCE

CONTENTS

1.0 INTRODUCTION

Conditioning is the process of preparing the body for optimized performance, by becoming stronger and healthier through regular exercise programme and diet, intake.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define Conditioning and explain the key terms
- Discuss the major factors in weight training
- Explain the difference between Isometric, Isotonic and Isokinetic.
- Understand the benefits and concerns of cardiorespiratory conditioning.

3.0 MAIN CONTENT

3.1 Conditioning Programmes

This is the process of preparing the body for optimized performance, by becoming stronger and healthiest through regular exercise programme and diet.

The human body has the capacity to adapt to any physically fit programme,it is exposed to, provided it is physically fit. Effective conditioning programme require careful planning and proper consideration of certain fundamental rules or principles for safety of the success of the programme.

Preventing injury to the athlete require a proper conditioning of the athlete. An Athlete who is not fit is more likely to sustain an injury. Improper conditioning is one major cause of sports injuries when conditioning is inadequate, the resultant outcome might be counter productive if your reason for conditioning was to be fit by loosing weight you might end up with adding weight or if you wanted to add strength, you might end up loosing strength, and vice versa. Those in charge of the responsibilities to condition or prepare the athlete for good performance at his competition, most proper understanding of rules or principles of training Conditioning isrelative to flexibility, strength and cardio-respiratory endurance or muscular endurance.

3.2 Principles of Conditioning

1. Safety
2. Motivation

3. Specialization
4. Warm-up/cool down
5. Diet
6. Intensity
7. Capacity
8. Duration
9. Balanced strength
10. Routine
11. Modification
12. Fun
13. Relaxation
14. Progression

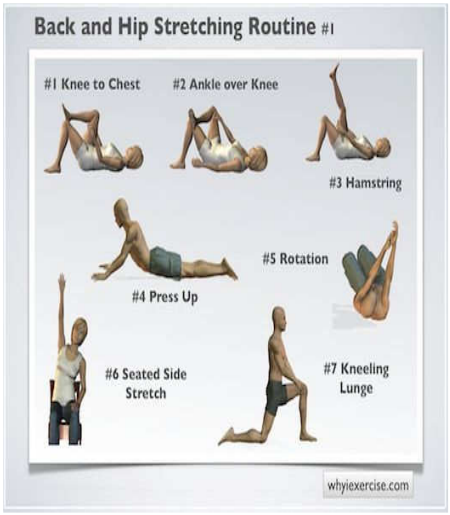
1. **SAFETY:** Proper technique or body mechanics should be used in preparing the athlete. Proper standard equipment should be used safety or health rules must be adhered to constant inspection of trading area of other facilities should be done,
2. **Motivation:** The athlete must be exposed to motivational conditions, both for self or external motivation, through the use of good. Comments that might be helpful or relived be given for good efforts, motivation will ensure proper results.
3. **Specialization:** This means that certain exercises should include those for strength, relaxation, flexibility and other exercises be designed for specific sports.
4. **Warm-up/cool down:** This should precede all other exercises, as it tone up the physical psychological, readiness for the daily activities. At the end of the daily work out exercises that will cool out or the body to be cooled down.
5. **Diet:** A healthy diet is important for a conditioningprogramme. Ensure good diet for the programme. Also ensure you avoid hydration to help delay with cramps.
6. **Intensity:** programme your practice to avoid muscular cramps or the likes.
7. **Capacity-Level**: This means that performance expected should be at the level of the athlete or client especially his physiological limit.
8. **Duration:** Time of workout should last enough to briny result, depending on the athlete or client. The whole programme should be provided with time enough for the daily workout.
9. **Balanced strength:** More strength will lead to more endurance of both muscular or cardio respiratory endurance. In developing more strength, the principle of over loading should be use to ensure results or to avoid injuries. Note that more strength, greater endurance for speed.
10. **Routine:** Daily exercise routine should be established and consistent with the expected workout programmed.

11. **Modification:** The daily programmed workout should consider to take care of specific need of the athlete. The area of deficiency must be properly handle or treated for a unique results.
12. **Fun**: The habits of hard work equated with playing hand or enjoyment should be considered as this is very helpful in development of results from the programmed.
13. **Relaxation:** A proper balance between the programmed with relaxation is very vital for development of physical or mental health. A balance between leisure time and hard workout should also be emphasized.
14. **Progression** Daily workout must be based on progression and regular increment of loading. This should be well programmed, considering the fact that it takes 6-8 weeks for good result to begin to surface in a condition of programme.

These principles are observed in consideration of the use of different methods of training, especially for season athletes

3.3 Conditioning Methods

There are several methods of training that can be used in conditioning an athlete. Each method is unique and may be used in conjunction with other methods for achieving proper result in a conditioning programme



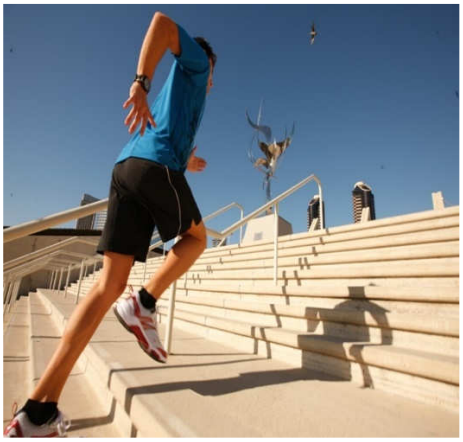
These methods include:

- Interval training method
- Continue training method
- Interval/continued method
- Resistant or weight training
- Speed training e.t.c

For the purpose of conditioning the resistance or weight training is very important as the programme of conditioning is not really considering any specific sports rather it is considering fitness mostly, just as in warm up exercisesaimed at the whole body at low intensity conditioning also aimed at exercising the whole body organs using the various training methods, for a proper build up, at different intensity to develop the entire fitness components in the whole body. Your daily activities and sports determine the level of fitness componentand in what part of the body it is needed.

3.4 Cardiorespiratory Exercises

Resistance (weight) training result in the most visible aspect of physical fitness, increased muscle mass, but cardiorespiratory endurance is the most important aspect of physical fitness to one's health. The cardiovascular and respiratory systems transport oxygen (Fuel) and nutrients to the body tissues for absorption, and carry carbondioxide respiratory waste product, to the lungs for expulsion from the body. Cardio respiratory exercises help build endurance in the heart and lungs, allowing people to do daily or athletic task without getting very tired Calories is also burned up in the process of important consideration. Cardio respiratory exercise may also be performed at low intensity, weight loss and management programme. As part of the warm-up or cool down phase in a weight training programme. As you use different weight training, similarly, there are many different exercises to develop fitness to help develop cardio respiratory fitness. They include: ruining and jogging aerobicor step classes power walking, stair climbing, cling etc.



3.5 Principles of Weight Training

The primary benefit of weight training in a conditioning programme are for (a) muscle strength and (b) muscle endurance. Secondary benefits are (a) muscle tone (b) muscle mass and muscle power and flexibility.

3.5.1 The overload principle (SAID)

S - Specific
A - Adopted
I - Imposed
D - Demand

The principle of overload is by far the most important concept when starting any weight lifting or weight training programme. This principle

involves overloading the body's muscular or cardio respiratory systems by working them harder than normal activity requires. If the overload principle is followed correctly, the muscle strength, endurance and size will all increase and not be injured, because the muscles will be overloaded in a controlled exercise programme.

3.5.2 Method of using overload

1. Increase the amount of weight lifted
2. Increase the number of reputation in a set
3. Increase the number of sets that are performed
4. Increase the speed with which repetition are performed
5. Decrease the amount of time between sets

3.6 Other Principles that could be Considered alongside the overload Principle include:

a. Variation principle: as the name is varying your approaches in terms of; intensity, speed, sequence, and duration of the exercise of your chosen method of exercise.
b. The specificity principle: This refers to the relationship between the choice of exercise and the activity performance enhancement i.e the chosen exercise
c. mustcorrelate to the sport or the component of fitness so desired for performance achievement or enhancement.

3.7 Safety Guidelines for Weight Training

i. Warm-up/cool down
ii. Stretching
iii. Spotting
iv. Collars
v. Muscle balance
vi. Range of motion (ROM)
vii. Hydration
viii. Proper stance or form for lifting weights.

3.8 Strengthening Exercises

Muscles can be exercised in a variety of ways through different types of muscles contractions. The shortening of a muscle, accomplished through flexion, is called a 'concentric', or positive, contraction. The lengthening of the muscle is called an 'eccentric' or negative, contraction. Both types of contractions are essential to conditioning and can be produced in a variety of ways, using free weight, guided weights, or just the weight of the body, among other methods.

Isometric Exercise:

This result in no change in the length of the muscle, the muscle neither lengthens or shortens as it is contracted. This is done by applying pressure against a stable resistance, thereby increasing muscle tension such as when a person pushes or pulls against an immoveable object e.g pushing a wall.

Isotonic Exercise

An Isotonic contraction occurs when the muscle bears the same weight throughout the entire range of motion. Isotonic exercises greatly improve joint mobility as well as muscle strength and tone. The muscles will shorten and lengthen as it goes through the contraction.

Another type of Isotonic exercise is called a variable resistance exercise. Using a machine to vary the muscles resistance.

Isokinetic Exercises

An Isokinetic contraction occurs in the muscles when the speed of the exercise stays constant throughout the range of motion, while the resistance against the muscle varies according to the amount of force applied. This type of contraction will work for the muscles to its full capacity through the entire range of motion (ROM).

Isokinetic exercises can be performed on machines also, that provides hydraulic resistance or electronic resistance. Isokinetic combines both Isometric and Isotonic contractions.

3.8.1 Warm-up/cooldown: As required for every training or conditioning programme activity, warm-up activity for at least 5-10mins, to involve the larger or big muscles of the body. This should precede every conditioning programme/cooldown at the end of every conditioning programme activity. Also for 5-10mins at least. Note that the cooler the atmosphere the more the intensity and durations.

Note:

Stretching: This should be with some selected related exercises that proceed the warm-up to further prepare the entire muscles.

Spotting: Giving support during performance to the performer, especially when dealing with heavier weight.

Coolar: These are grips used to hold weights to the weight bars, to prevent the weights from falling off the weight bars.

SELF-ASSESSMENT EXERCISE

Circle T for True or F for False.

i. Isokinetic C. Contraction of a muscle; using the same weight throughout the contraction.
ii. Eccentric Contraction D. The shape of a muscle of its resting state.
iii. Muscles tone E. Muscle lengthens during contraction
iv. Muscles mass F. Muscle shortens dirty contraction
v. Variable Resistance G. The girth of size of the muscle
   a. H. The speed is controlled during the exercise so mix contraction of the muscle through the full range of motion can be attained.

4.0 CONCLUSION

Having completed your Self-assessment test successfully, it is assumed that you have learnt the lesson in this unit.

5.0 SUMMARY

A successful conditioning programme must address muscular strength and endurance, flexibility, cardiorespiratory, fitness body composition and individual special consideration. In addition, careful attention must be paid to the rules of conditioning to ensure the safety and success of the programme.

6.0 TUTOR-MARKED ASSIGNMENT

1. T F: To get a true cardiorespiratory benefit, you must exercise at an appropriate intensity for at least 20 min.
2. T F: The intensity of exercise can be measured by monitoring the heart rate during Exercise.
   Match the terms in Column ‘A” with the appropriate description in column ‘B’.
   Column ‘A’ Column ‘B’
3. Isometric A. Uses a guide with machine, the resistance varies as exercise area goes through the range of motion.
4. Isotonic B. Muscles exercises, using controlled and relaxation, contraction of a muscle against and immoveable object.

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UNIT 2 THERAPEUTIC MODALITIES FOR REHABILITATION

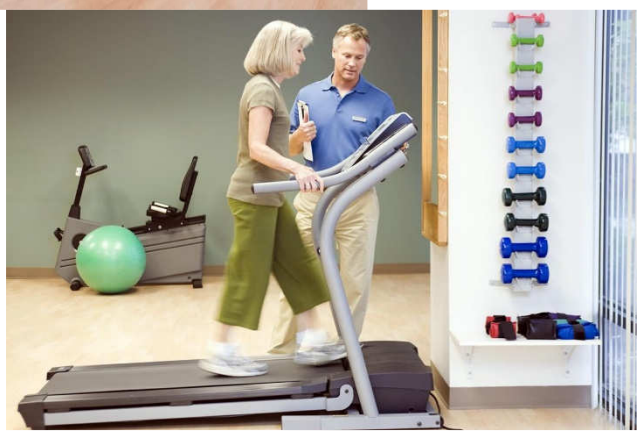
CONTENTS

1.0 INTRODUCTION

Literally, Rehabilitation may mean to restore back to use; or bring back to use'. Rehabilitation process and period is very crucial and fragile, needs to be technically and professionally handle so as to achieve the dream of coming back to top form level. The period, is a period of proper and complete total healing and restoration. These therapeutic modalities must carefully be followed. They include:-

(a) Cryotherapy
(b) Thermotherapy,
(c) Mechanical Electrical
(d) Pharmacological Agents

All these therapeutic Modalities are capable of helping the process of come back when used appropriately. Only two of these modalities shall be treated in this work.



2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and correctly explain each of the key terms.
- Discuss the purpose of Therapeutic Modalities
- List the different types of Modalities and explain how some are used.
- Discuss several safety considerations involved with the use of Therapeutic Modalities.

3.0 MAIN CONTENT

3.1 Cryotherapy Modalities

This method of therapy includes several others such as; ice massage, cold water immersion, ice packs, and vapor-coolant sprays. Due to the cold that is used in cryotherapy, the athlete or patient may feel uncomfortable when it is first applied. As with all procedure, you should explain the procedure to the patient in advance so as he or she knows what to expect. In the application of cryotherapy, the longer the cold treatment, the deeper or depth the cold penetration to the underlining tissues i.e treatment involving bigger muscles, the.

Cooling the body tissue can decrease blood flow, reducing muscle Spasms, Pain, and Edema. These therapeutic effects are achieved when cold is applied tissue to constrict. Cooling an area for less than 15 mins does not reach a therapeutic depth or level, and increase blood flow instead. After 20 mins of cryotherapy, the body defends itself in much the vessels to dilate. When cryotherapy, the body defends itself in much the vessels to dilate. When cryotherapy is used at a therapeutic depth, the person will experience three phases of sensation:

1. A cold sensation lasting 0-3 mins
2. Mild burning and acting 2-7 mins
3. Relative numbness lasting 5-12 mins

Rehabilitation process and period is very crucial, and fragile that needs to be technically or professionally handled, to avoid a falling back to same or even a more divesting condition. The period of come back of an injured athlete is a period of joy and apprehension which requires some therapeutic modalities or processes that will manipulate circulation (blood flow) blood in the treatment of muscles and joints. The purpose is to improve or restore the athlete’s range of motion, physical agility on ability to engage in daily activities and athletic endeavor at his or her optimal performance level. Several approaches are usedcondition and

the muscles and joints. It is important to understand how such therapy can be helpful to the athletes and most importantlythe safety can be classified into five general types, thus;

i) Cryoptheraphy
ii) Thermotheraphy
iii) Electricaltheraphy
iv) Mechanical modalities
v) Pharmacologic agents, depending on the mode of stimulation.

Injury Rehabilitation

Rehabilitation of sports injuries start immediately in the form of First aid, the therapy is only to determine by the type, extend, or area of injury involve.

For proper understanding of the modalities approaches used in rehabilitating sports injuries, the modalities can be grouped into

(1) Exercise(comprising of passive and active exercises)
(2) Pharmacologic Agents, depending on the mode of stimulation.

Injuries such as contused wound, (strains and sprains) increase blood flow to the area tissuesinvolve resulting in inflammation and edema. Symptoms of inflamed tissues include, pain, heat and redness. Due to this local trauma, the vessels does not carrythe tissues oxygen to the tissues, and it may cause muscle spasms and increased edema. The muscle spasm thencausesadditional pain which can increase the spasm and so on. This syndrome is called the ‘Muscle Spasms/Pain Cycle’ and levels to decreased mobility.

Modalitiesare used to stop, slow, or otherwise interrupt the Muscle Spasms/Pain Cycle. Forexample, method of cryotherapy– can be applied to theinflamed area. The cold (ice) will course construction in the blood vessels, decreasing local inflammation and edema, as well as stopping or slowing the muscle spasm/pain cycle. As helpful as this may be, it is importantto know that a wrongful use or misapplication of a modality (method) may only aggravate a condition rather than providing relief.

Guidelines for Cryotherapy

1. Except for ice massage, all cold modalities required the use of a barrier, such as a towel, to prevent the skin from frostbite. This applies to both ice and reusable packs, which reach temperature below freezing.
2. Never applied anyform of cold on an open wound without a protective covering.
3. Never apply and form of old to anesthetized skin.

4. Except for vapo-codant sprays, do not apply cryotherapy to patients with decreased circulation, diabetes, or Cardiac conditions.
5. Monitor the patient for signs of cold allergy or Raynaud's Phenomenon, a condition in which the arteries and arterioles of an extremity constrict excessively.
6. To avoid further injuries to the tissues always monitor the time for which cryotherapy is applied, application should not exceed 30mins.

3.1.1 Guidelines for Applying Ice Pack

1. fill a plastic bag with enough crushed ice to model around the injured area. Or obtain a result able ice pack from the freezer.
2. Explain the procedural effect to the patient
3. Expose the area to be trended draping the patience for modesty as appropriate
4. Wet an elastic wrap or towel and place it between the ice and the patient's skin. Especially when using a revisable or chemical ice pack to prevent a burning effect.
5. Leave the ice in place for 15-20mins, checking with the patient periodically for signs of undue discomfort or cold allergy.
6. Leave treatment area clean and dry when you are done. Wipe up any water drops from the floor to prevent others from slipping.

3.1.2 Guidelines to Ice Massage

1. Prepare the ice by freezing a disposable cup ¾ full of water, forming a cylinder of ice. Massage the ice to the area to be treated. Use materials that will prevent your fingers to the cooling effect from the ice.
2. Expose the area to be treated, draping the patient for modesty as appropriate. Use towel to sock the water drops from the ice.
3. Explain the procedure to the patient.
4. Slowly massage the ice over the injured area in overlapping stokes, taking care not to cause the patient undue discomfort by the pressure of the strokes. Remove more of the Styrofoam or paper from the ice container as the ice melt.
5. After 7 to 10mins of treatment, dry the patients skin and assist him or her from the treatment table.
6. Leave the treatment area clean and dry when you are done. Wipe up any water drops from the floor to prevent others from slipping.

Other cryotherapymodalities include

i. The use of vapo-coolant spray
ii. Ice water immersion
iii. Whirlpool baths
iv. Contrast baths
v. Thermotherapy e.g moist heat packs/hydro-collator
vi. Fluidotherapy
vii. Paraffin bath

3.2 Electrical Modalities

This modalities uses electricity to influence healing by stimulating the body tissues. Like the other therapeutic modalities, electrical modalities are used to speed upthe healing of tissues. Because electrical modalities

penetrate deeper into the tissues than other modalities, they are among the most effective in terms of decreasing healing time.

In general, low voltage stimulation is used to help control pain and high voltage stimulation is used to increase blood flow. General instructions for the electrical modalities follow, but should not be interested as sufficient instruction for therapeutic use in a professional environment.

3.2.1 Guidelines for electrical modalities

Administration of electrical modalities requires special training beyond the scope of this instructions. Furthermore, procedures will vary according to the modality and equipment used. The following guidelines will be helpful.

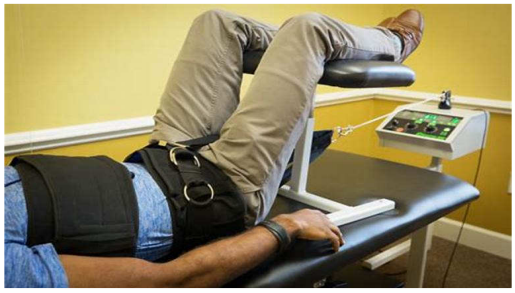
1. Follow the physician or therapists orders for all electrical modalities
2. Make sure the equipment is in proper working condition, is plugged in, and is powered through a circuit served by a ground fault interrupter.
3. Explain the procedure to the patient.
4. Expose the area to be treated
5. Cleanse the treatment area with soap and water or alcohol. Then, dry it thoroughly. (cleaning the patients skin of dirt and oils will ensure proper adhension of the electoe pads).
6. Place electrode pads according to the manufacturer's instructions
7. Avoid prolonged point contact when using ultrasound.
8. Follow the manufacturer's instructions for use of all equipment. Improper use may cause burns or fire.
9. Turn the treatment channel(s) off before carefully removing the adhesive electrodes from the patients skin.
10. Leave the treatment area clean when you are done
11. To prevent infection and ensure safe use, follow the manufacturer's instructions for cleaning and maintaining the unit.
12. Never use an electrical modality on an open wound.
13. Do not use electrical modalities on a patient with a pacemaker without approval from a physician, as this may interfere with the pace of the heart set by the pace maker.
14. Avoid high fluid area of the body when using electrical modalities. The electrical current may be intertied by high concentration of fluid, causing burns.
15. Avoid using electrical modalities over the carotid arteries as this could change the patient's blood pressure and cause him or her to faint.

16. Electrical modalities must never be used on the trunk of a pregnant patient. Their use on the extremities is permitted upon approval by the physician.
17. Stop the treatment if the procedure increases the patient's pain.

The following are some electrical modalities used in the therapeutic modalities

i. Ultrasound therapy
ii. Electrical muscle stimulation (EMS)
iii. Galvanic stimulation
iv. Interferential stimulation
v. Lontophoresiss
vi. Transcutaneous electrical nerve stimulation (TENS)
vii. Diathermy

3.3 Machanical Modalities

This include; intermittent compression, Fraction and massage theropy, assist in healing by exerting pressure to the soft tissues, increasing circulation and/or distraction (pulling) bony structures. This pressure can be applied manually or with device. Joint mobilization and my of asocial release, performed by seaports, chiropractors, physical therapist and certified athletic trainers are also mechanical modalities, but are beyond the scope of this text due to the amount of training that is required to use them. General instructions for the mechanical modalities follow, but should not be interpreted as sufficient instruction for therapeutic use in a professional environment.

3.4 Guidelines for Mechanical Modalities

Guidelines for electrical modalities, administration of mechanical modalities requires special training beyond the scope of this module write up. However, some general guideline are as follow;

1. Follow the manufacturer's instructions, for use of all equipment.
2. Frequent circulation cheeks of extremities are important when applying traction
3. Stop the treatment if the procedure increases the patient pain.

3.5 Massage Therapy

Is the systematic manipulation methodical pressure, friction and kneading of the soft body tissues. It is used to stimulate muscles, decrease muscle spasms, increase circulation, decrease edema and promote relaxation. There are five types of massage therapy:

i. Effleurage
ii. Petrissage
iii. Deep Friction
iv. Tapotement
v. Vibration

Lubricants, such as oil, lanolin, powder, analgesic balms, or special lotions, may be used with any of these forms of message to decrease the skin friction.

Effleurage: Consists of strokes that glide over the skin without attempting to move the deep muscle group. This form of massage is done with either the palms or the fingers. Usually effleurage is used to either begin or end a massage treatment; it may also be used to direct muscles tightness.

Petrissage: Is done by kneading the soft tissues between the thumb and fore finger or with the palm of the hand. The rolling and twisting motion of the tissue stimulates fluid drainage. Fluid drainage is beneficial to the patient because it remove cellular waste from the body tissues.

Deep Friction: This massage is performed primarily on joints and areas with little soft tissue. The thumbs and fingers are rotated on the skin in a circular pattern, applying enough pressure to contract the underlying tissue. An alternative to the circular pattern of deep friction message is transverse friction. In transverse friction massage, the strokes are applied in a transverse pattern over a tendon. The effects of friction massage are to increase circulation and decrease scar tissue.

Tapotement: Or percussion, involves “beating” the hands or fingers upon the skin. This form of massage can be done using clenched hands, the palms of the hand, the ulnar borders of the palms, or the fingertips. Care is taken to avoid inducing pain by contacting the person too harshly.

Vibration: Is a form of massage that makes use of a vibrating machine or quick motions of the fingers to produce therapecetic benefits. The benefits of vibration are increased circulation and lymphatic drainage.

Vibration massage also provides a mild stretch of the superficial tissues, which is beneficial because it increases the elasticity of those tissues.
Massage has value to self and to others levels, and this might requires more professional training and service.

3.5.1 Hints on Massage Therapy

1. Expose the area to be massaged and drape the patient to provide warmth and maintain professional standards of modesty, making sure you have good access to the area. (never massage an infected area or over a recent injury).
2. Position the patients as comfortable as possible
3. Apply a light lubricant to the body area
4. Begin with light massage strokes (effleurage). Deeper, heavier massage may follow, depending upon the clients comfort level and therapeutic needs. By watering the patients face and/or body movements you can monitor the clients tolerance to different levels of massage pressure. Avoid harsh massage strokes that cause undue discomfort to the patient.
5. Be sure to keep one hand on the patient's body at all times. This will make the patient to know where you are in relation to his or her body and helps avoid startling the patient with an unexpected touch.
6. When reduction of edema is the goal, strokes from below the injury site toward the heart.
7. Maintain a steady rhythm during the massage and end the session with light massage strokes. The last step in giving the treatment is to remove the massage lubricant. This is done with a clean, dry towel.
8. Leave the treatment area clean when you are done. Discard used towels in the place designated by the facility.

Other mechanical modalities include:

- Intermittent compression and
- Traction

The last modalities in rehabilitating an injured athlete is the use of 'pharmacologic agents'. This should be prescribed by a qualified medical professional. They constitute an important aspect of therapy that must not be overlook. A variety of drugs are used in the treatment of pain, edema, inflammation and muscle spasms resulting from injuries. Drugs commonly used to control these symptoms includes; anesthetics, analgesics, nonsteroidal anti-inflammatory drugs (NSAIDs), cox-2 inhibitors, corticosteroids, and muscles relaxants. These drugs are best used in conjunction with the other therapeutic modalities earlier discussed or mentioned.

Muscle relaxants: such as cyclobenza prime metaxalone, carisoprodol and dantrolene relieve muscles spasms resulting from injury or inflammation.

SELF-ASSESSMENT EXERCISE

Complete the following exercise:

i. The goal rehabilitation to restore _____ to an individual.
ii. Cryotherapy causes the tissues to Vaso constrict, whencauses_____ blood flow to the area.

4.0 CONCLUSION

Having successfully completed the Self-Assessment test, it is assumed that you have learnt the contents in this unit.

5.0 SUMMARY

Therapeutic Modalities are methods of applying physical agents to create an optimal environment for healing and reduce an individual's pain and discomfort following of injury or recognition of certain disease processes.

6.0 TUTOR-MARKED ASSIGNMENT

1. When a person has an injury, such as a Sprain or Strain, and will result in the affected tissues.
2. Circle T for True or F for False.
3. Is best not to apply heat treatment for Spasm and Joint Stiffness.
4. Heat applied immediately to injury will keep the swelling down.

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UNIT 3 GENERAL PREVENTION OF ATHLETIC INJURIES

CONTENTS

1.0 INTRODUCTION

Discussion have already been given on some injuries statin their causes, symptoms, treatment and prevention techniques and measures in the main content of module 3 especially. Some principles and safety measures have also been mentioned in some other areas of the work, as ways of trying to minimize or prevent athletic injuries.

Here are yet some general preventions of athletic injuries that could be used in sports. In this unit.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and explain the key terms
- List the possible preventive ways in athletic injuries.
- Explain the listed ways or techniques of athletic injuries.
- Apply them to their practice or participation in sports.

3.0 MAIN CONTENT

3.1 Different Techniques for The Prevention of Athletic Injuries

Some injuries may present same symptoms, same causes only perhaps the source or the affected part might be different. So also, there are same preventive approaches that could be applied to different kind of injuries. The following are some general factors that might be considered, in the process of preventing accidents falling, trauma to the body tissues or any other situation that exposes causes of injury to the athlete;

1. Warm-up/Cool down
2. Improper or Lack of Physical Fitness
3. Improper Timing
4. Inadequate nutrition and fundamental process
5. Muscular Imbalance
6. Poor Neuromuscular Coordination
7. Availability and Utilization of Protective wears or equipment.
8. Psychological readiness
9. lack of incomplete adherence to proper instructions.

3.2 Explanations

3.2.1 Warm-Up/Cool Down

This is the act or process of toning up or preparing the body for a task or training ahead, usually nor more than 15 min and not less than 10 min, depending on the mains task, some may last for only 5 min.

There are two types of Warm-Up:
1. General – which starts the process and
2. Specific – which localize the warm to the organs or parts of the body to be involve in the task ahead.

The efficacy of warm acts as a stimulant to the body, i.e calling the body to be alert or ready for the main task in the training programme.

The function of Warm-up is to prepare the body physiologically, mechanically, emotionally and mentally.

Warm-up should start with 5 min jogging exercise, 3 min of sprints exercise, 2 min of lifting or jumps activities, 5 mins for stretching and flexibility exercises, especially, involving the muscles that will mostly used for the task ahead.

After the stretching, some specific drills of sports skills to be used should included done very brief both at low and high intensity.

Warm-Up help drastically in minimizing injuries especially at the first 30 mins or play in the main task.

Cool down or rub-down, as otherwise known is done at the end of the main task.

It is characterized with exercises that purposely aimed at slowing down the body organs into rest after such a vigorous task.

The importance of this is not do allow a drastic slow down of the body, especially the physiological and musculature of the athlete's body. This will prevent muscles Spasm and Cramps injuries, which could be very devastating to the athlete's corner.

3.2.1 Conditioning or Physical Fitness

The differences between this and warm-up/cool down is, while warm-up prepare by a way of stimulating the body to the incoming task,

Conditioning is building and getting the body to be adapted to task proper.

Also, the task in warm-up/cool down could be both the training and competition, but conditioning, will always proceed from a warm-up.

As already mentioned, Conditioning is building of the athlete's body to be tough, strong and fit with much desired strength, endurance, coordination, flexibility and agile, also the skills of performance in the athlete's sport.

This requires much more time and commitment both in resources and sacrifices.

A body that is not conditioned or property condition to a given task, will be prone to lots injuries, both physical, psychological and mental injuries, and a waste resources.

There is serious needs to always condition the body, for it pays in the preparation to avoid the embarrassment of injuries and loss resources.

Improper Timing
The consideration here is in terms of; Visibility, weather or climatic consideration hostile environment etc.

It could also, be a time of imbalance emotions, or immediately after a meal consumption. All of which could result to physical, emotional or mental injuries etc.

3.2.2 Nutritional Status

The body that is not well fed, is already an impoverish in fitness and performance.

Hence, the body must be well fed normally with a balance diet, generally with energy giving food, carbohydrates body building (Proteins) lubricants (Oil or Fats).

Also fruits and vegetable for minerals and vitamin for normally health.
Some sports require some sort of foods depending on the calorie consumptions.

This is important for helping the body to always function at full capacity and ability.

Besides, nutrition supplies the need fuel and normal body temperature, without which the body might be injured when stretched or engaged in a task that it is not prepared for.

3.2.3 Muscular Imbalance

This is a condition resulting from conditioning of the body. When the body is un-technically or improperly or improperly conditioned, where by some muscles are trained and some not or improperly trained, or it might even be overtraining or under training of some or the whole-body muscles to be involve in a task is such adequately prepared, etc.

3.2.4 Neuromuscular Coordination

Communication between the body nervous system and the muscular system may hamper the ability of the body to perform as expected. This could either be as a result of diseases or condition's or genetically or even accidentally acquired proper condition under/ can help to improve the inability of the neuromuscular function properly to avoid injuries in athletics.

3.2.5 Wears and Protective Equipment:

Wears an Pads, and other Equipment or gargets are specially made for the prevention and protection of some body organs during play in sports. This on most occasion have proved very helpful and commitment to use. When used according to directives, it will be encouraging and advisable.

3.2.5 Adherence to Instruction:

This is another way of preventing or minimizing athletic injuries. Following laid down rules and regulations or instruction in the performance of some sports will help to minimize prevent injuries and lack.

Some Specific injuries have been discussed and prevention techniques and principles have been stated in the body of this work. However, there are some general principles to be considered in the approach to injury prevention. Some injuries present same kinds of symptoms with other injuries and their prevention approach is also same or almost same. However, the following principles will help generally in the prevention or reducing the impact of sports injuries:

- Lack or inadequate of warn up cool down.
- Lack of physical fitness
- Improper timing

- Inadequate nutrition and fundamental process
- Muscular imbalance
- Poor neuromuscular coordination
- Psychological readiness
- Lack of following instructions

Physical Rehabilitation

Literally, the word Rehabilitate may mean to 'restore back to use or 'bring back to use'. Here in first aid and sports injuries, it is the application of physical therapy following an illnessor injuries to restore optimal health and functions to an individual (Clover, 2001). Following injuries or illness, the athlete may be laid off to allow healing through a therapeutic process, after which the athlete is expected to go through the period of 'Rehabilitation'.

The professionals involve in physical rehabilitation include; the physician, physical therapist, athletic trainer, fitness instructor, physical therapist assistant, physical therapist aide, the patient's family, the teammates and the patient.

Physical rehabilitation is the period of recovery preceded from the period of therapeutic rehabilitation which have been discussed.

The physical rehabilitation, also known as "rehab" is handle by a team of professionals as listed above. This is to enhance normal restoration of the athlete to another time of top fitness performance, after the injuries laid off.

Phases of Physical Rehabilitation

Successful rehabilitation is a complex process that may be short or long, depending on the severity of the injury and the degree of function that must be regained. Other variables, such as the type of health insurance, access to care, speed and quality of care, degree of motivation and pre-existing conditions may also influence the length and success of the rehabilitation programme. Therefore, each rehabilitation programme is unique; however, the healing process is universal. There are three phases of healingthat must take place in order for the patient to resume his or her pre-injuries activates, the plan and damage resulting from the injury must be repaired; and finally, the now healthy tissue must be built up again. Nearly all physical rehabilitation programme can be thought or in terms of these phases.

Phase I: begins immediately after the injury has occurred. The main purpose of this phase is to prevent additional injury to the tissue by controlling inflammation.

Phase II: begins the process of repairing the damaged tissues. Strength and ROM are increased under controlled conditions to prevent re-injury, ideally.

Phrase III: involves returning the patient to the activity (sport, work and activities of daily living) that he or she was involved with prior to the injury. The patient learns how to reuse the area to its maximum potentials without fear of injury. It is important to note, however, that full return to the former activity is not always possible. Sometimes the severity of the injury makes it necessary to teach the patient how to compensate for losses in strength or motion by modifying the way in which his or her activities of daily living are performed, with the understanding that full recovery is not likely.

3.3.1 Guidelines for all phases of rehabilitation

Certain precautions must always be observed as the patient progresses through each phase of rehabilitation. These precautions include:

1. Monitor any type of increase in edema or pain
2. Advise each patient of the need to regain strength, but emphasize the importance of building up slowly, be sure that patients work to a level that is just below their capacity to avoid additional pain and injury.
3. Remove the limitations of daily activities with each patient
4. Make sure each patient understands how to perform his or her home exercise properly.

The simple way the patient can understand the three phase is that phase are the patient utilizes ‘passive’ exercises (control inflammation) mostly as the injury is likely to still be painful with is limited strengthening ability.

Phase II (repair) utilizes active exercises to increase strength building capacity and phase III (remodel) is a combination of passive as active exercises with lots of variation and variables that will help the patient to gain move strength, flexibility and speed.

SELF-ASSESSMENT EXERCISE

i. List five ways of preventing athletic injuries
ii. Circle T for true or F for False
iii. T/ F Warm-up is a complete way of stopping athletic injuries.

6.0 TUTOR-MARKED ASSIGNMENT

1. T/ F: Nutrition is the fuel (Energy) for performing sports.
2. T/ F: Protective Equipment's stops injuries
3. Define 'Muscular Imbalance'.

7.0 REFERENCES/FURTHER READING

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