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**SUBMITTED TO: DR. JAFFAR.**

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**Q NO.1. DEFINE THE FOLLOWING**

**(a) FLEXIBITY:-**

**(b) MOBILITY:-**

**(c) INDICATION OF STRETCHING:-**

**(d) ISOMETRIC CONTRACTION:-**

**(e) ISOTONIC CONTRACTION:-**

**ANS:-**

**(a) FLEXIBITY:-**

Ability to move a single joint or series of joints smoothly and easily through an unrestricted, pain-free Range of motion (ROM) is known is flexibility.

* Flexibility exercises help stretch muscles, protect against injury and allow the maximum range of motion for joints.

**(b) MOBILITY:-**

The ability of structures or segments of the body to move and allow the presence of range of motion for functional activities (functional ROM)

OR

The ability of an individual to initiate, control or sustain active movements of the body to perform simple to complex motor skills.

**(c) INDICATION OF STRETCHING:-**

* Limited ROM
* Structural deformities
* Muscle shortening
* Part of a total fitness program designed to prevent musculoskeletal injuries.
* Prior to and after vigorous exercise potentially to minimize post-exercise muscle soreness.

**CONTRAINDICATION OF STRETCHING:-**

1. Bony block
2. Recent
3. Evidence of acute inflammatory or infectious process.
4. Sharp pain (acute stage of bum).
5. Evidence of tissue trauma.
6. When contracture is needed to develop stability.
7. Exposed joints.
8. Exposed tendons.
9. Thrombophlebitis.
10. D.V.T
11. Compartment syndrome.
12. Fresh skin graft

**(d) ISOMETRIC CONTRACTION:-**

An increase in intramuscular tension without any change in length of the muscle is known is isometric contraction.

**(e) ISOTONIC CONTRACTION:-**

Same but a change in the length of the muscles.

Isotonic contraction generate force by changing the length of the muscle and can be concentric contractions or eccentric contraction.

**QNO.2. DIFINE CONTRACTURE? DISCUSS TYPES OF CONTRACTURE?**

**ANS:-**

**CONTRACTURE:-**

Adaptive shortening of the muscle, tendon and other soft tissue that cross or surround a joint resulting in significant resistance to stretch and limitation of ROM.

Can be reversible or irreversible.

**TYPES OF CONTRACTURE:-**

There are four types of contracture:

1. Myostatic contracture
2. Pseudomyostatic contracture
3. Arthrogenic contractures
4. Fibrotic contracture

**1. MYOSTATIC CONTRACTURE:-**

* NO specific muscle pathology.
* A reduction in the number of sarcomere units in series, there is no decrease in individual sarcomere length.
* Resolved in a relatively short time with stretching.

**2. PSEUDOMYOSTATIC CONTRACTURE:-**

* Muscle in a constant state of contracture,
* Hyper tonicity (i.e., spasticity or rigidity) associated with a CNS lesion as a spinal cord injury.
* Muscle spasm and pain
* Can be resolved with stretching.



**3. ARTHOGENIC CONTRACTURE:**

An arthrogenic contracture is intra articular pathology.

**These changes may include;**

**Adhesion,** (bank of scar like tissue, adhesion cause tissue and organ to stick together)

**Synovial proliferation**, is the enlargement of the fibro cartilaginous pad)

**JOINT EFFUSION,**

Irregularities in aeticular cartilage, osteophyte formation.

Restricted arthrokinametics.

**4. FIBROTIC CONTRACTURE:-**

* It may occur when normal muscle tissue and connective tissue are replace with a large amount of no extensible, fibrotic adhesions and scar tissue or even heterotopic bone.
* Permanent loss of extensibility of soft tissues occur that cannot be reversed by nonsurgical intervention.
* Healed by stretching and surgical intervention.



**QNO.3. WHAT IS STRETCHING? WHAT ARE TYPES OF STRETCHING?**

**ANS:-**

**STRETCHING:-**

Stretching: general term used to describe any therapeutic maneuver designed to increase the extensibility of soft tissues, thereby improving flexibility by elongating structures that have adaptively shortened and have become hypo mobile over time.

**TYPES OF STRETCHING:-**

1. ACTIVE STRETCHING: Self-stretching.

2. PASSIVE STRETCHING: Partner provides force of stretch.

3. STATIC STRETCHING: Slow, sustained stretch held for 10-30 seconds.

Preferred in Physical Education settings.

4. PNF: Combo active/passive techniques. Not for children 6-10 years.

5. BALLISTIC STRETCHING: Quick movements, bouncing, using momentum. Reserve for those 15 + years.

**OTHER TYPES OF STRETCHING:-**

The types of stretching are following.

1. Static stretching
2. Cyclic/intermittent stretching
3. Ballistic stretching
4. Proprioceptive neuromuscular facilitation stretching procedures (PNF stretching)
5. Manual stretching
6. Mechanical stretching
7. Self-stretching
8. Passive stretching
9. Active stretching

**QNO.4. WHAT IS NAGI MODEL? DISCUSS DISABLEMENT AND IMPAIRMENT?**

**ANS:-**

**NAGI MODEL:-**

* A conceptual explanation of the process and underlying mechanism by which disease, injury or birth defect impact a person’s ability to function (perform their expected role in society).
* NAGI experimental hypothesis
* Disease causes-🡪 impairment

Impairment causes-🡪functional limitation

Functional limitation causes-🡪disability

**NAGI MODEL**

PRIMARY PATHOLOGY

PRIMARY IMPAIRMENT

FUNCTIONAL LIMITATION

DISABILITY

**PRIMARY PATHOLOGY:-**

* Pathophysiology due to disease, injury or congenital abnormality

**PRIMARY IMPAIRMENT:-**

* Result of primary pathology-physiological or psychological consequences (e.g. in stroke: hemiplegia, loss of selective movement control, sensory loss, aphsia)

**FUNCTIONAL LIMITATION:-**

* **Due to impairment (inability to perform ADLs)**
* Basic ADLs (BADLs): self-care: dressing, grooming, hygiene, toileting, bed mobility, transfers, locomotion, speech, reading, writing.
* Instrumental ADLs (IADLS): higher order skills requiring more psychological processing in addition to motoric functioning (e.g. shopping, paying bills, meal preparation, going to the movies).

**DISABILITY:-**

* Social and psychological consequences (values) of functional limitations (inability to fulfill expected social roles, e.g. hold a job)- may be heavily influenced by external factors like: support system or funding.

**DISABLEMENT AND IMPAIRMENT:**

**DISABLEMENT:-**

* Disablement is a term that refers to the impact(s) and functional consequences of acute or chronic conditions, such as disease, injury, and congental or developmental abnormalities, on specific body systems that compromise basic human performance and an individual’s ability to meet necessary, expected, and desired societal functions and roles.

**OR**

* Disablement
* mean any loss of capacity to work
* Or move
* May result in loss or reduction of his earning capacity
* Disablement may be .total (sec 2.1 g
* Partial sec 2.1. temporary
* permanent

**PATHOPYSIOLOGY OF DISABLEMENT:**

* The alteration of the body’s homeostasis as the result of acute or chronic disease, disorders, or conditions characterized by a set of abnormal finding that are indicative of alteration or interruptions of structure or function of the body primarily identified at the cellular level.

**IMPAIRMENT:-**

* Impairments are the consequences of pathological condition; that is, they are the signs and symptoms that reflect abnormalities at the body system, organ, or tissue level.

**OR**

* Impairment
* is any loss or abnormal of
* Psychological, physiological or abnormal
* Structure or function.

**TYPES OF IMPAIRMENT:-**

1. Musculoskeletal
2. Neuromuscular
3. Cardiovascular/pulmonary
4. Integumentary

**QNO.5. WHAT IS AEROBIC EXERCISE? WRITE DOWN PRINCIPLES OF AEROBIC EXERCISE?**

**ANS:-**

**AEROBIC EXERCISE:-**

**Aerobic exercise** is any physical activity that makes you sweat, causes you to breathe harder, and gets your heart beating faster than at rest. It strengthens your heart and lungs and trains your cardiovascular system to manage and deliver oxygen more quickly and efficiently throughout your body. Aerobic exercise uses your large muscle groups, is rhythmic in nature, and can be maintained continuously for at least 10 minutes.

**PRINCIPLES OF AEROBIC EXERCISE:-**

In addition to strengthening your heart and cardiovascular system, participation in regular aerobic exercise has many health benefits. Aerobic exercise:

* Improves your circulation and helps your body use oxygen better
* Increases energy
* Increases endurance, which means you can work out longer without getting tired
* Helps reduce the risk of developing heart disease
* Helps reduce the risk of developing diabetes
* Helps reduce body fat
* Helps you reach and maintain a healthy weight
* Helps reduce stress, tension, anxiety, and depression
* Improves sleep.

**THE END.**