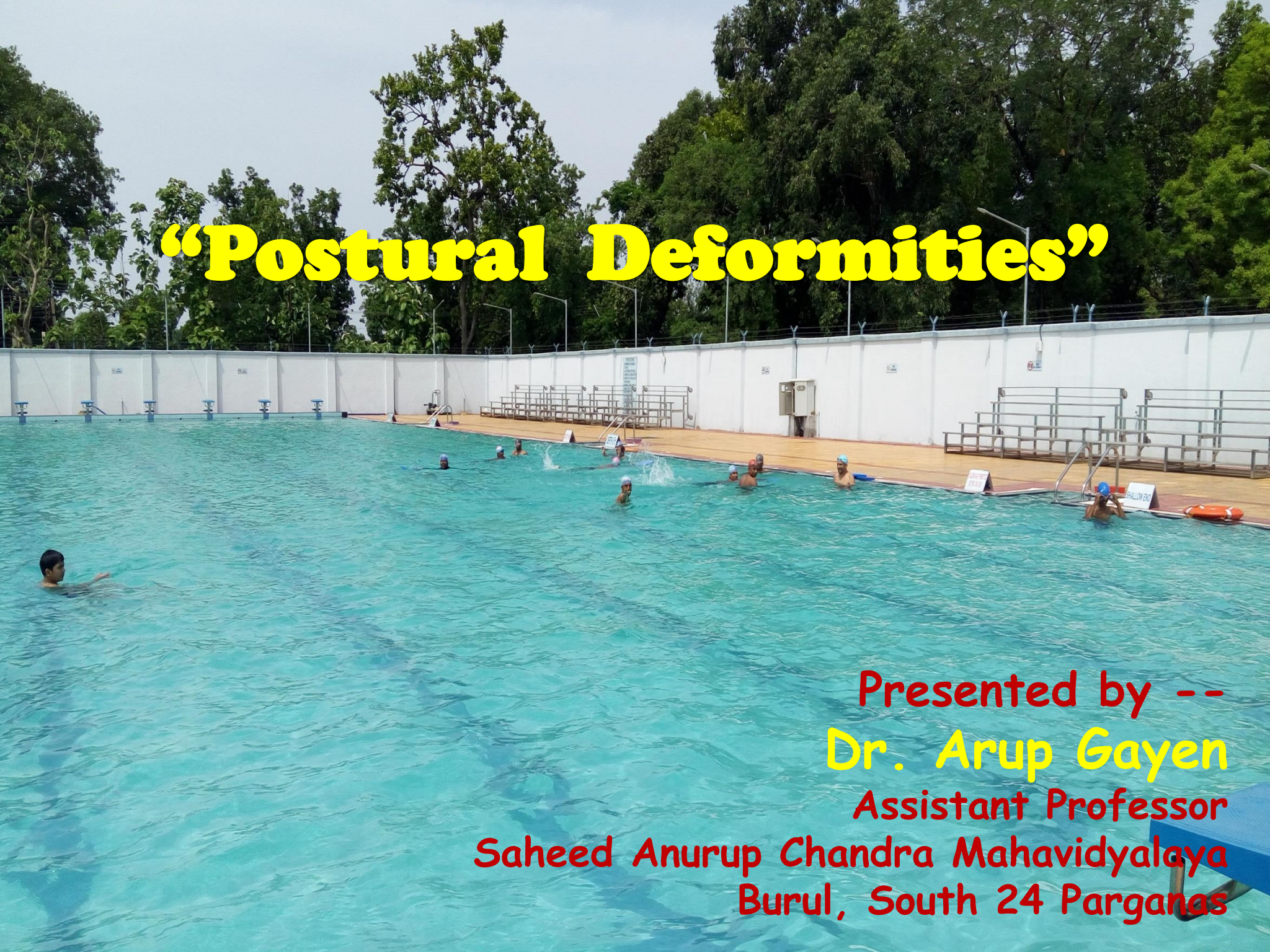


“Postural Deformities”



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Objectives:-

- At the end of this you will be able to:
 - Define Posture.
 - Define types of Posture.
 - Give the Mechanism of Posture.
 - Explain the Pattern of Posture.
 - Demonstrate the Principles of Re-education.
 - Express the Technique of Re-education.

Posture

- Posture is a “position or attitude of the body either with support during muscular inactivity, or by the means of the co-ordinated action of many muscles working to maintain stability or to form an essential basis which is being adapted constantly to the movement which is super-imposed upon it.

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○ **POSTURE** acronym for easy reference:

P:- Pelvis is neutral, with weight distributed.

O:- On the whole foot.

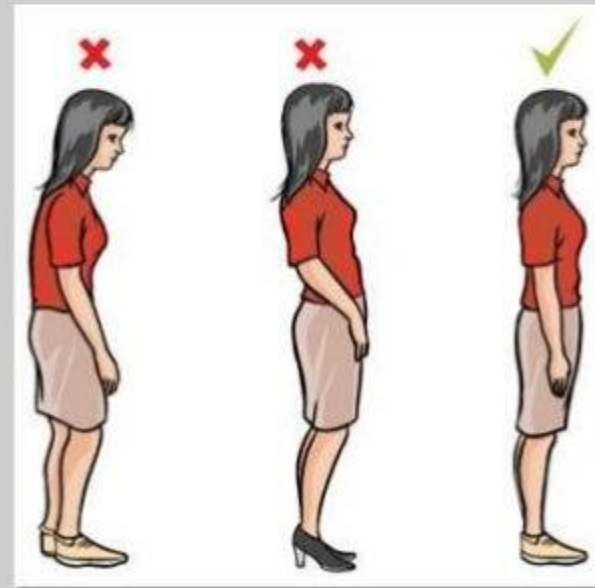
S:- Stable joints.

T:- Tight abdominals.

U:- Upright ribs.

R:- Retracted shoulders

E:- Ear over shoulder



Types of Postures

- There are two types of postures:
 1. Inactive postures
 2. Active postures
 - ⇒ Static postures
 - ⇒ Dynamic postures

Inactive Posture

- Attitude adopted for resting or sleeping.
- All essential muscular activity reduces to minimum.
- Used for training general relaxation.

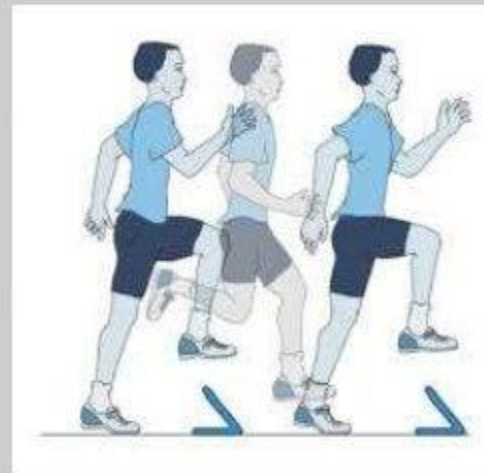


Active Postures

- Integrated activity or action of many muscles is required to maintain active posture
- It may be either Static or Dynamic.

Static posture

Dynamic posture



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Static posture

- The body and its segments are aligned and maintained in certain position.
- Constant pattern of posture.
- E.g.: Standing, lying and sitting.

Dynamic posture

- The body and its segments are constantly modified and adjusted to meet the changing circumstances which arise as the result of movement.
- E.g.: Walking, running, jumping, throwing and lifting.

The Postural Mechanism

- The postural mechanism involves:
 - The Muscles
 - Nervous Control

The Muscles

- The intensity and distribution of the muscle work which is required for both static and dynamic postures varies with the pattern of the posture and the physical characteristics of the individuals.
- The group of muscle are used to maintain the erect position of the body, by working to counteract the effects of gravity. They are known as anti-gravity muscles.

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- These anti-gravity muscles present certain structural characteristics to perform function with efficiency and the minimum of effort.
- Posture maintaining muscles contain more of red muscle fibers, which are slowly contracting and not easily fatigued.
- All muscle sin the body are mixed of red and pale (white) muscles.
- Muscles of hands, eyes etc., has white muscle fibers which are easily fatigued.

Nervous Control

- Postures are maintained or adapted as a result of neuromuscular co-ordination, the appropriate muscles being innervated by means of a very complex reflex mechanism.

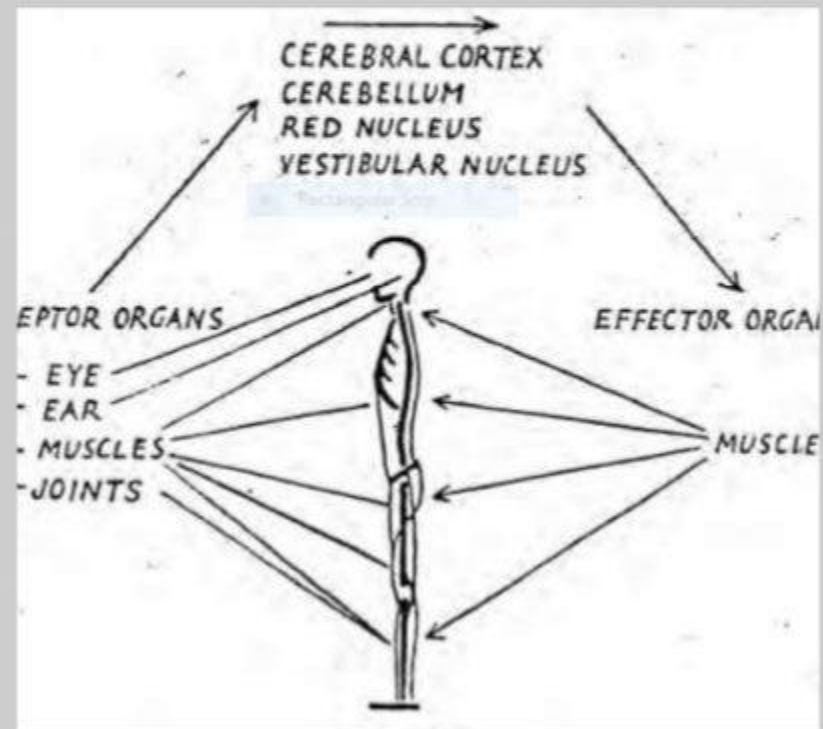
The Postural Reflex

- An efferent response to an afferent stimulus.
- The afferent response in this instance is a motor one, the anti-gravity muscles being the principal effector organs.

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○ Afferent stimuli arise from a variety of sources all over the body, the most important receptors being situated in the muscles themselves, the eyes and the ears.

1. The Muscles
2. The Eyes
3. The Ears
4. Joint Structures



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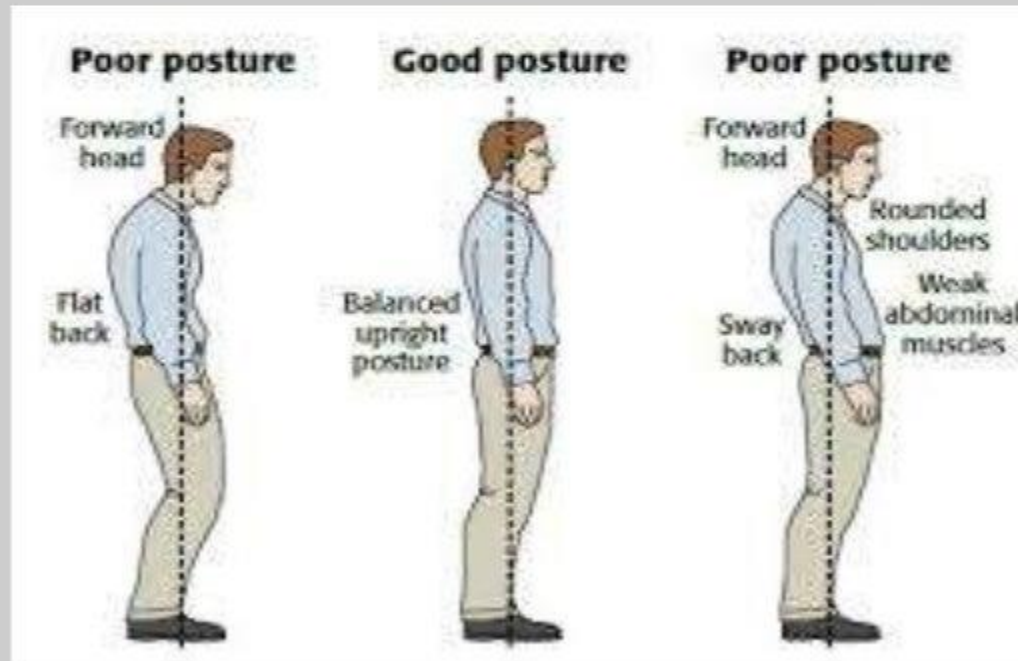
- **The Muscles:** Neuromuscular and neurotendinous spindles within the muscles record changing tension.
- **The Eyes:** Visual sensation records any alternation in the position of the body with regard to its surroundings.
- **The Ears:** Stimulation of the receptors of the vestibular nerve results from the movement of fluid contained in the semicircular canals of the internal ear.

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- **Joint Structures:** In the weight-bearing position approximation of bones stimulates receptors in joint structures and elicits reflex reactions to maintain the position.
- Skin sensation also plays a part, i.e. soles of the feet, when the body in standing position.
- Impulses from all these receptors are conveyed and coordinated in the central nervous system.

The Pattern of Posture

- There are two patterns of posture, as below:
 - 1) Good / Correct posture
 - 2) Poor / Faulty posture



Good Posture

- When the posture fulfills the purpose for which it is used with maximum efficiency and minimum effort.
- Varies from individual to individual.
- Perfect balance of one body segment over another.
- Minimum muscular effort.
- Pleasing to someone's eyes.

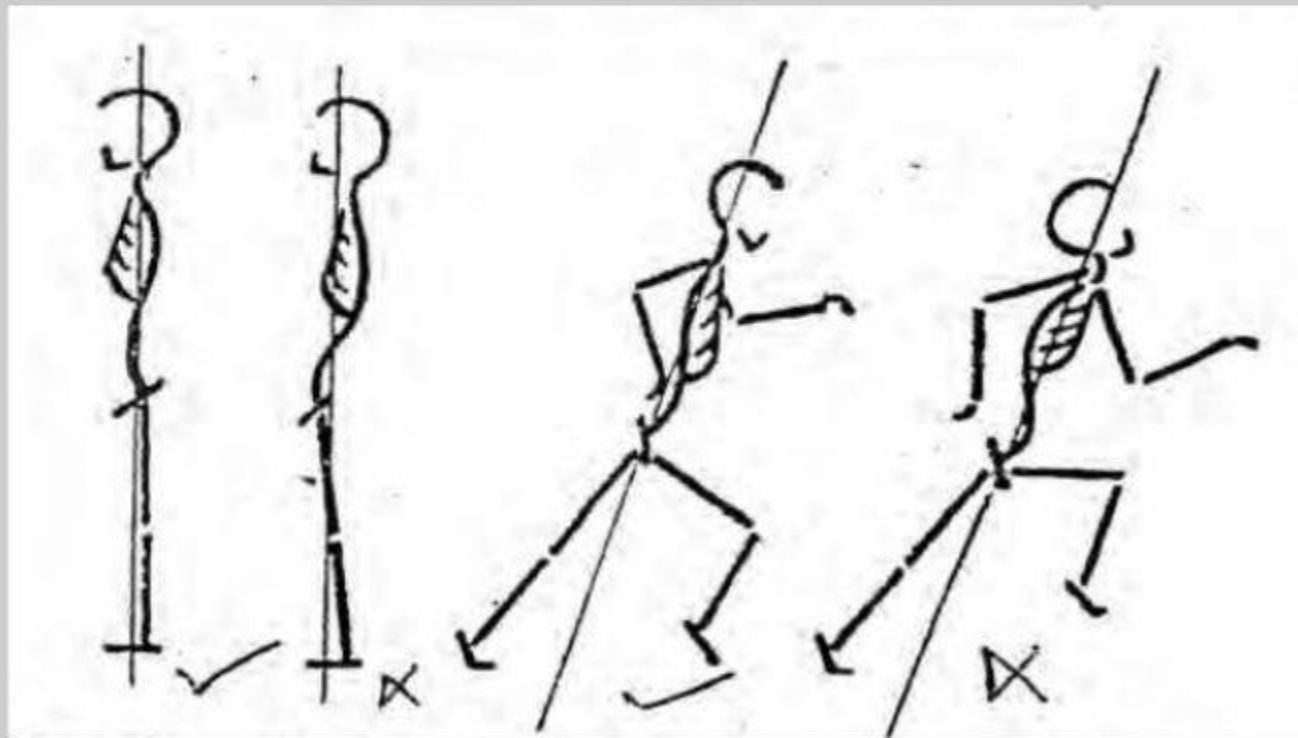
Development of good posture

- Develops quite naturally
- Provide essential mechanisms for its maintenance.
- Adjustment are intact and healthy.
- **Factors responsible for good posture**
 - Stable Psychological Background
 - Good Hygienic Conditions
 - Opportunity for Plenty of natural free movement.

Poor Posture

- A posture which is inefficient, fails to serve the purpose and in it unnecessary amount of muscle effort used.
- Faulty alignment of body parts leading to additional muscle work.
- Marked increase in curves of spine which are displeasing to eye.
- Reduces the efficiency of movement.

Good and Faulty alignment in standing and running



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➤ **Factors responsible for good posture**

- Mental attitude.
- Poor hygienic condition.
- General disability and illness.
- Prolong fatigue.

➤ **Local Factors**

- Pain.
- Muscular weakness.
- Occupational stress.
- Sometimes there may be faulty idea of good posture.

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POOR BIO-MECHANICS



PAIN

Re-education of Posture

○ **Principle:**

- The cause of poor posture must be found out.
- Co-operation of Patient.

○ **Techniques of Re-education:**

- General relaxation
- Treatment of pain
- Mobility
- Muscle power

Technique of Re-education

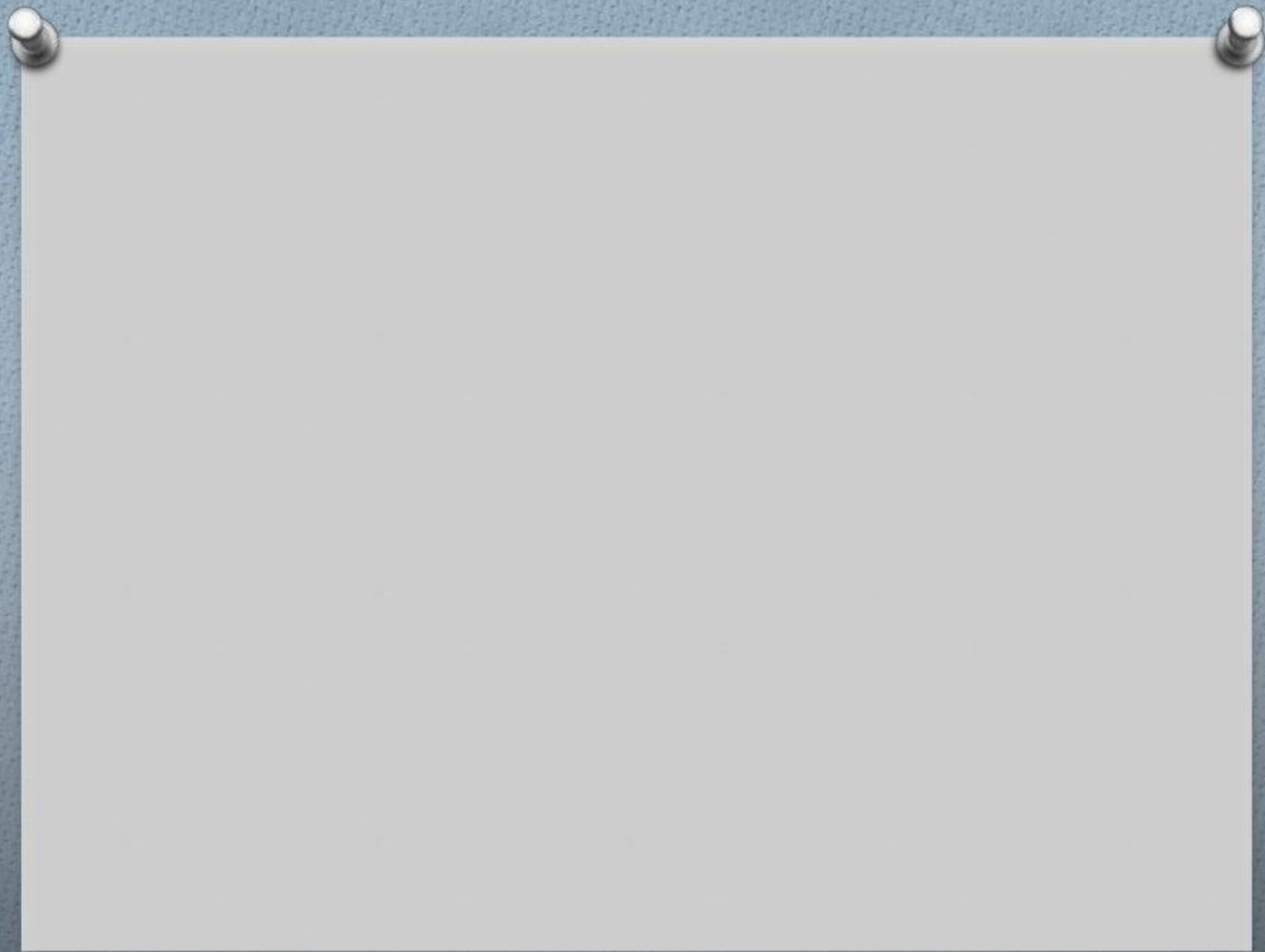
○ **Relaxation:** The ability to relax is an important factor in re-education, as some degree of useless and unnecessary tension is nearly always associated with poor posture.

○ **EXAMPLES:**

- Crook lying
- Prone lying
- Lying
- General relaxation
- Sitting etc.

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- **Mobility:** Mobility is maintained by general free exercises which are rhythmical in character and include full-range movement of all joints.
- **Muscle power:** Free movement and harmonious muscular development helps to maintain their tone and efficiency.
- **E.g.** Work for upper back extensors and scapula retractors.



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