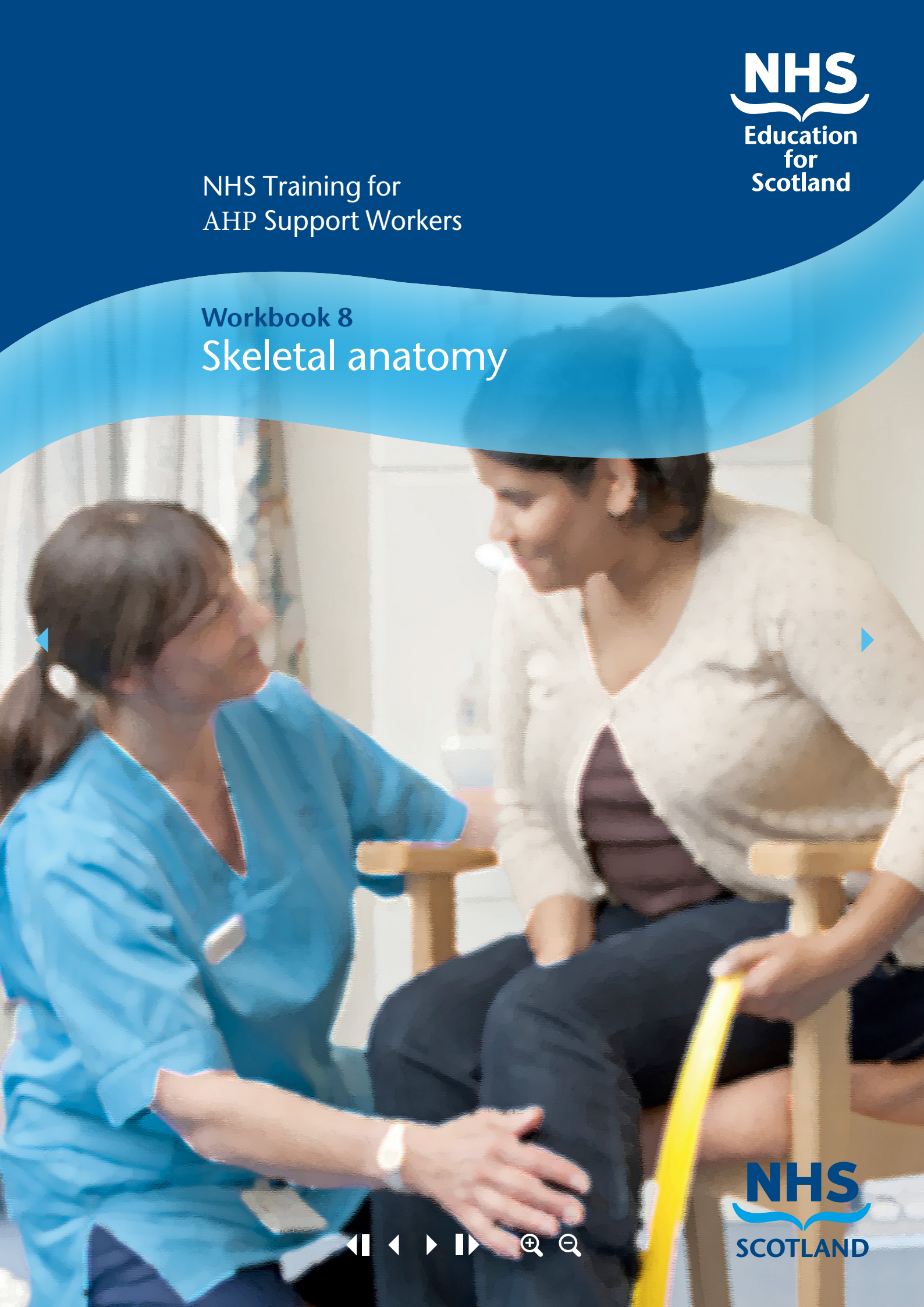
NHS Education for Scotland

NHS Training for
AHP Support Workers

Workbook 8

Skeletal anatomy



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Contents

Workbook 8

Skeletal anatomy

8.1 Aim

The aim of this workbook is to introduce the Healthcare Support Worker (HCSW) to anatomical terminology, the main bones in the body and commonly used bony landmarks.

8.2 Learning outcomes

By the end of this workbook you will be able to:

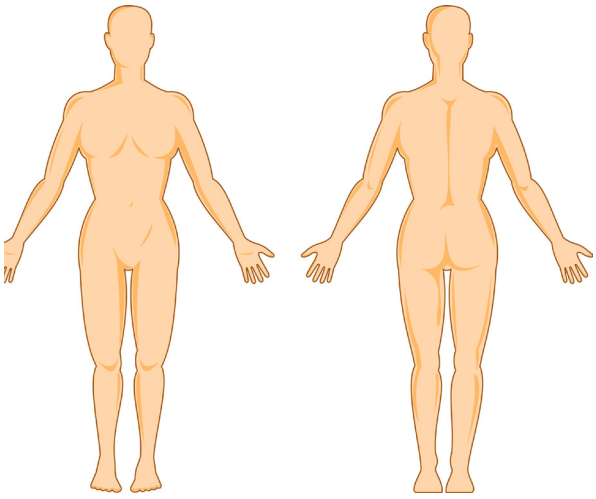
- Explain the terminology used to describe the position of body parts.
- Name the main bones of the body and identify bony landmark.

8.3 Terminology

There is a conventional terminology of anatomy which has been adopted throughout the world in order to avoid confusion.

This terminology helps to describe the body parts relative to one another.

Physiotherapists and doctors often use these terms to describe conditions that you will come across in the medical records, therefore it is of importance that you know what these terms mean.



The Anatomical Position

The anatomical position

For the purpose of description in medicine, the body is considered as being in what is called the **anatomical position**.

In this **anatomical position**, the body is assumed to be standing, the feet together, the arms to the side, and the head and eyes and palms of the hands facing forward. *(left)*

This last point is an important one, since in a normal relaxed position of the body, the thumb points inwards towards the body.

In anatomy speak, the thumb points outwards, or laterally not inwards, or medially.

To understand descriptions in medical or physiotherapy records it is important to keep the anatomical position in mind.

8.4 Position and movement

The body parts are described in relation to each other. Some of the terms used to describe the relative position of body parts are listed below.

We will provide examples of relative positions so that you can begin to see what is meant by them.

- **Anterior** This means toward or at the front, so for example the breast bone, or sternum is anterior to the spine
- **Posterior** This means behind, or to the back, so for example the tail – bone, or sacrum, is posterior to the pubic bone.

- **Medial** This means towards the middle of the body – imagine a line that cuts the body in half from the head to the toes. This will be described as the midline. Any body part or movement that is towards this imaginary line can be described as medial. The spine is medial to the shoulder blade (scapula).
- **Lateral** This is opposite to medial, and means away from the midline of the body. For example, in the anatomical position described above, the thumb is lateral or outwards compared to the little finger, which is more medial.
- **Superior** This means higher above, so the shoulder joint is superior to the elbow joint.
- **Inferior** This is of course opposite to superior, and means below. The hand is inferior to the elbow
- **Superficial** This means nearer to the surface, for example, the skin is superficial to the underlying muscles.
- **Deep** The opposite to superficial. The bones lie deep to the muscles.
- **Caudid** Toward the end of the body, away from the head.
- **Cephaled** Toward the head.

Activity

Anatomical terminology
Answer the following questions using the skeleton and the information provided.

Which lies more **medially**, the sacrum (tail-bone) or the hip joint?
Which structure is more **lateral**, the index or the ring finger, in the anatomical position?
Which is more **superior** – the clavicle (collar-bone) or the shoulder joint?
Which is **deeper**, the patella (knee-cap), or the femur (thigh-bone)?

Movements are named too, in relation to the anatomical position

- **Flexion** Means bending.
- **Plantarflexion** Applies at the ankle joint and means movement of the foot towards the floor in the sitting or standing position.
- **Dorsiflexion** Again applies at the ankle and means pulling your foot up to bend the ankle.
- **Extension** Means straightening.
- **Abduction** Means moving a limb away from the midline of the body, such as raising your arm sideways.
- **Adduction** Means moving towards the midline of the body, such as moving your arm across your body.
- **Medial Rotation** Means turning your arm inwards, such as with a bent elbow, you then move your hand across the body. This rotates your shoulder joint medially.
- **Lateral Rotation** Means the opposite, turning your limb away from your body. Using the above example with your elbow bent, you would swing your hand outwards causing lateral rotation at the shoulder.

Evidence

Now you need to go to your supervising therapist and demonstrate that you know these movements.

Demonstrate to your supervising therapist the following movements

- Medial rotation at the hip joint.
- Flexion at the shoulder joint.
- Abduction at the hip joint.
- Extension of the knee joint.
- Lateral rotation at the hip joint.
- Adduction at the hip joint.
- Lateral rotation of the shoulder joint.

8.5 Function of bone

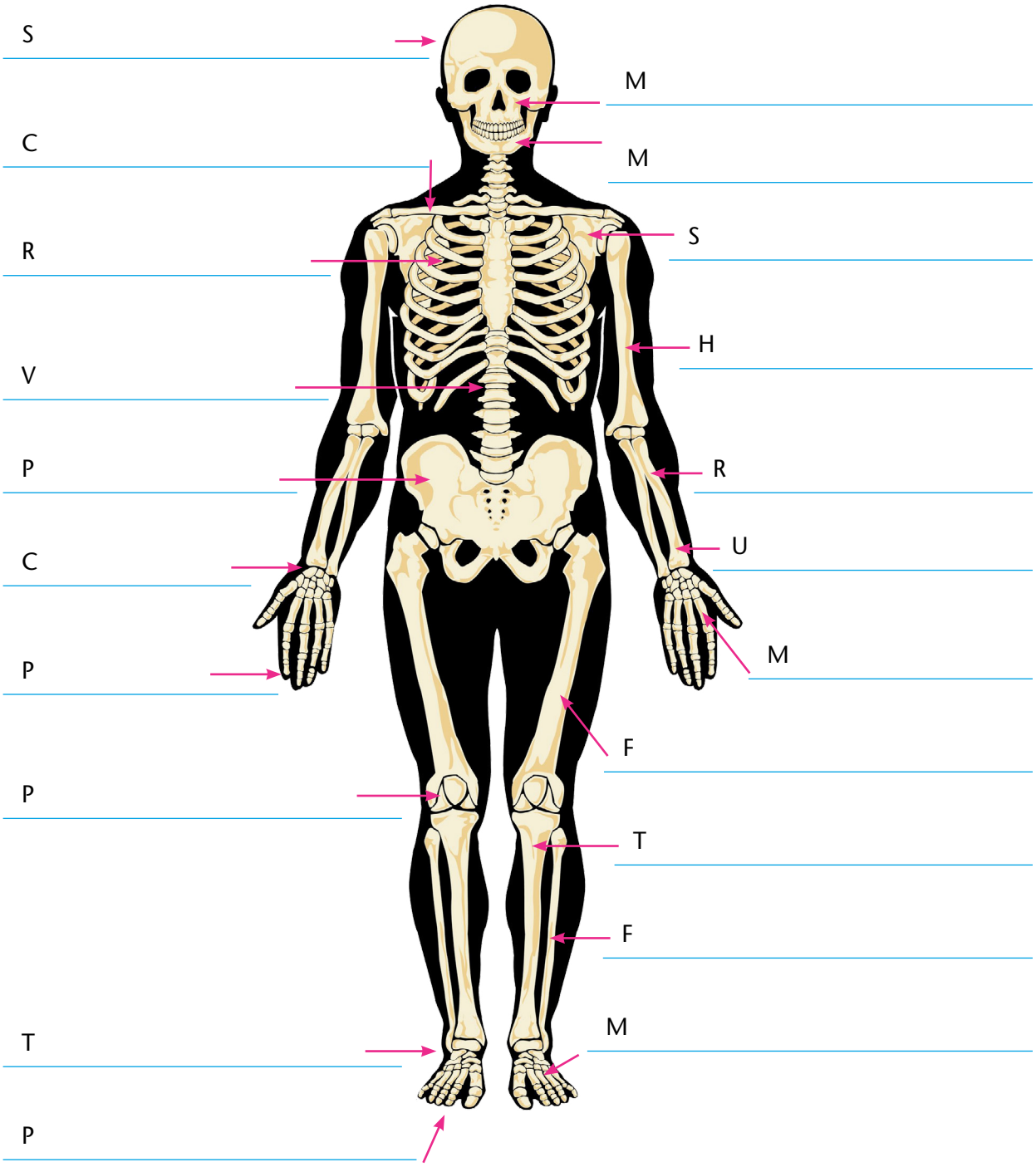
Bones give protection by forming rigid walls of cavities housing important organs:

- they give rigidity to the body
- they provide attachments for muscles, serving as levers in pulley systems
- they manufacture blood cells
- they store minerals and chlorides

Evidence

What are the main functions of bone?
Why do bones vary in shape?
Name two long bones, two flat bones and an irregular bone
Where would you find cancellous and trabecular bone?

Label the diagram with the names of the major bones



8.6 Practical anatomy session

In this session you will learn:

- Where some of the important bony landmarks are on the body and understand why you need to know them.
- Be able to identify them on a skeleton and on a model.

Activity

Demonstrate these landmarks on your model & write where you would find the...
Clavicle
Scapula
Spine of the scapula
Spine of a vertebra
Acromion
Head of humerus
Olecranon
Iliac crest
Ischial tuberosity
Patella
Medial malleolus
Lateral malleolus
Calcaneum

Acknowledgements
NHS Tayside

8.7 Skeletal anatomy workbook completion

Your supervising physiotherapist will sign your portfolio to indicate that you have completed this workbook successfully.

Objective	Therapist's signature	Date
Demonstrate the anatomical position		
Explain the terminology used to describe the position of body parts		
Name the main bones in the upper limb		
Demonstrate the movements that occur at the main joints of the body		
Name the main bones in the lower limb		
Identify the bony landmarks of the upper limb		
Identify the bony landmarks of the lower limb		

Support worker (name)
Support worker's signature
Therapist (name)
Therapist's signature
Date

8.8 Skeletal anatomy reflection

Suggested KSF Dimensions: C2, HWB2
This form should be placed in the appropriate section of your portfolio.

What did you learn from this module?
How has this influenced your work?
Date module completed

NHS Education for Scotland

in association with CHARTERED SOCIETY OF PHYSIOTHERAPY

NHS Greater Glasgow and Clyde

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