Identification of Appendicular Bones

Experiment 10 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify the limb and girdle bones and distinguish the usual adult appendicular count from the axial count.

Principle

The appendicular skeleton includes the upper and lower limbs and their girdles. Its usual adult count is 126. Girdles connect the limbs to the central skeleton; limb arrangements reflect upper-limb mobility and lower-limb weight bearing.

Requirements

- Articulated skeleton, isolated bone models and upper- and lower-limb charts.
- Notebook and identification record.

Procedure

1. Identify girdles

Locate the clavicle and scapula on each side and the two hip bones. Identify the acetabulum and scapular glenoid cavity.

2. Identify upper limb

Locate humerus, radius and ulna. Use anatomical position: the radius is lateral on the thumb side, and the ulna is medial.

3. Identify the hand

Locate carpals, metacarpals and phalanges. The thumb has two phalanges; each other digit has three.

4. Identify lower limb

Locate femur, patella, tibia and fibula. Tibia is the main medial weight-bearing leg bone; fibula is lateral.

5. Identify foot and record

Identify the tarsal group, metatarsals and phalanges. Record name, side where determinable, landmark and joint relationship.

Hand and Foot Checklist

Group	Names to identify	Count per side
Carpals	Scaphoid, lunate, triquetrum, pisiform, trapezium, trapezoid, capitate, hamate	8
Tarsals	Talus, calcaneus, navicular, cuboid, medial/intermediate/lateral cuneiforms	7
Long bones of digits	Metacarpals / metatarsals; phalanges	5 + 14 in each hand or foot

Observations and Record

Bone	Side / identifying landmark	Joint relationship
Upper limb	_____	_____
Lower limb	_____	_____
Girdle bone	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Each upper limb plus its girdle: 2 girdle bones + humerus 1 + radius/ulna 2 + carpals 8 + metacarpals 5 + phalanges 14 = 32; both sides = 64.
- Each lower limb plus hip bone: 1 + femur 1 + patella 1 + tibia/fibula 2 + tarsals 7 + metatarsals 5 + phalanges 14 = 31; both sides = 62.
- Total appendicular bones = 64 + 62 = 126. Together with 80 axial bones, the usual adult total is 206.

Result

I identified ____ appendicular bones, correctly stated their location and recorded representative landmarks.

Precautions

- Use anatomical position when naming medial and lateral structures.
- Do not count the ilium, ischium and pubis as three separate adult hip bones after fusion.
- Confirm landmarks before assigning right or left to an isolated bone.

Viva Questions and Answers

1. Which forearm bone is on the thumb side?

Radius in anatomical position.

2. What forms the hip bone?

Ilium, ischium and pubis fuse to form one hip bone on each side.

3. How many carpals and tarsals are on one side?

Eight carpals in the wrist and seven tarsals in the foot.

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