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Demonstration of Reflex Activity

Experiment 9 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To observe a tendon reflex and describe the reflex arc.

Principle

A stretch reflex involves a receptor, sensory afferent, central connection, motor efferent and responding muscle. For the patellar reflex, stretch of quadriceps activates a spinal response commonly associated with L2-L4 segments.

Requirements

- Instructor, consenting volunteer or demonstration video, reflex hammer and suitable seating.
- Recording sheet with right-left comparison.

Procedure

1. Position

Seat the volunteer safely with the limb relaxed and supported. Explain the demonstration and omit an injured or painful limb.

2. Locate

The instructor identifies the patellar tendon below the patella and checks the limb position.

3. Elicit

The instructor applies an appropriate brief tendon tap. Observe quadriceps contraction and lower-leg movement.

4. Compare

Repeat appropriately on the other side under similar relaxation conditions. If a reinforcement manoeuvre is used, record it.

5. Describe the arc

Identify muscle spindle input, sensory nerve, spinal integration and motor output to quadriceps.

6. Record

Write the actual response and limitations; use the instructor's grading system only when taught.

Observations and Record

Tendon / side	Position and manoeuvre	Observed response
Patellar, right	_____	_____
Patellar, left	_____	_____

Worked Example

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

- A response changing after better relaxation shows that testing conditions matter. A single reduced response is not a disease diagnosis.

Result

Record the observed outcome and calculated value, with units. State whether the stated laboratory specification was met; do not copy the worked example as your result.

Precautions

- Do not strike bone repeatedly or use force on an injured tendon.
- Keep the volunteer supported and leave clinical grading and interpretation to the instructor.

Viva Questions and Answers

1. What receptor starts the stretch reflex?

A muscle spindle.

2. Why relax the limb?

Voluntary contraction can alter or obscure the response.

3. Is every reflex arc monosynaptic?

No. Reflexes differ; the central excitatory component of the stretch reflex is a classic monosynaptic example.

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