

Summation Curve

Experiment 14 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To compare a single response with a summated response

Principle

A second input delivered before complete relaxation can increase the combined mechanical response. Summation is not a new muscle fibre type.

Requirements

- Instructor-provided labelled diagrams, traces or data for this activity.
- Calculator, graph paper or spreadsheet, and the activity record.

Procedure

1. Review the record

Use the instructor-provided gastrocnemius-sciatic teaching trace or a simulated recording. Record the axes, gain and input markers.

2. Measure

Compare response heights at the same recording gain and identify the interval between inputs.

3. Conclude

Explain the curve using the stated conditions and identify one limitation of the comparison.

Human Anatomy and Physiology

Observations and Record

Record item	Entry
Activity / material identifier	_____
Measurement or visible feature	_____
Comparison / calculated outcome	_____
Interpretation and limitation	_____

Worked Example

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

- Relative increase = (summed height – single height) ÷ single height × 100. Example: 18 mm versus 12 mm gives 50%.

Result

The recorded finding is ____; the supporting observation or calculation is _____. The main limitation is _____.

Precautions

- Use the supplied teaching material; distinguish a measured observation from an assumed value.
- Keep units, axes, labels and measurement conditions consistent.
- Record limitations and seek instructor review before applying a conclusion to a live case.

Viva Questions and Answers

1. What is the main endpoint?

Compare a single response with a summed response

2. Does one observed result prove a general conclusion?

No. Controls, repeatability and the limitations of the method must be considered.

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