



Physiology Lessons
for use with the
Biopac Student Lab

Windows® XP or Vista

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Lección 20

REFLEJO DE LA MÉDULA ESPINAL

- *Latencias y tiempos de reacción*
- *Fuerza de contracción vs. Fuerza estimulación*
- *Influencia de maniobra de Jendrassik*
- *Activación del músculo esquelético voluntaria vs. Involuntaria*

El programa está traducido.

La documentación de la lección no está traducida.

DATA REPORT

Student's Name: _____

Lab Section: _____

Date: _____

Subject Profile

Subject's Name: _____

Gender: Male / Female Age: _____ Height: _____ Weight: _____

I. DATA TABLES—SPINAL CORD REFLEX MEASUREMENTS

A. Complete Table 20.3 with reaction time (latent period) data for each segment and complete the required calculations. Reaction time is measured from onset of hammer strike to onset of EMG activity.

	Knee Jerk	Jendrassik maneuver	Mental Math Distraction	Flexor Withdrawal	Voluntary Knee Jerk	Ankle Jerk
Trial #	CH 1 Delta T	CH 1 Delta T	CH 1 Delta T	CH 1 Delta T	CH 1 Delta T	CH 1 Delta T
1	msec	msec	msec	msec	msec	msec
2	msec	msec	msec	msec	msec	msec
3	msec	msec	msec	msec	msec	msec
4	msec	msec	msec	msec	msec	msec
5	msec	msec	msec	msec	msec	msec
Average	msec	msec	msec	msec	msec	msec

Table 20.3

B. Complete Table 20.4 with Strike Force and Response Amplitude data for each segment and complete the required calculations. Use the result to calculate the relationship between strike force and EMG amplitude.

Trial #	Measure	Knee Jerk	Jendrassik maneuver	Mental Math Distraction	Flexor Withdrawal	Voluntary Knee Jerk	Ankle Jerk
1	CH 1 Max	Volts	Volts	Volts	Volts	Volts	Volts
	CH 2 Max	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
2	CH 1 Max	Volts	Volts	Volts	Volts	Volts	Volts
	CH 2 Max	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
3	CH 1 Max	Volts	Volts	Volts	Volts	Volts	Volts
	CH 2 Max	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
4	CH 1 Max	Volts	Volts	Volts	Volts	Volts	Volts
	CH 2 Max	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
5	CH 1 Max	Volts	Volts	Volts	Volts	Volts	Volts
	CH 2 Max	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
Average							

Table 20.4

II. QUESTIONS

1. What is the physiological meaning of the term “reflex”?

2. List the anatomical components of a reflex pathway in correct sequence from beginning to end.

3. What is the difference between an ipsilateral reflex and a contralateral reflex?

4. Define “reciprocal inhibition” and explain its importance.

5. The stronger the percussion hammer tap on the patellar tendon, the greater the reflex contraction of the quadriceps femoris. Explain.

6. The Jendrassik maneuver may exaggerate spinal reflexes such as the patellar reflex. Explain.

7. When a physician elicits the patellar reflex, what physiological activities are being examined? List four. (Hint: think of the function of each component of the reflex pathway.)

8. Briefly explain the function of the supraspinal descending inhibitory motor pathways.

9. There are two pathways by which the Jendrassik maneuver facilitates alpha motor neuron output. Describe one.

End of Lesson 20 Data Report