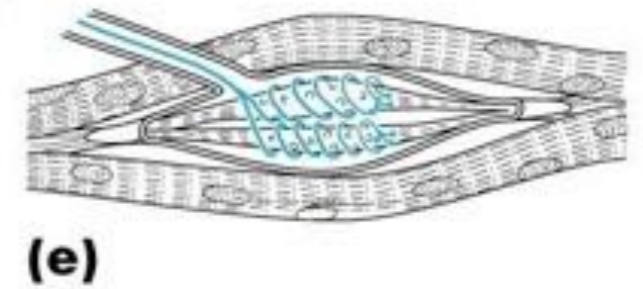
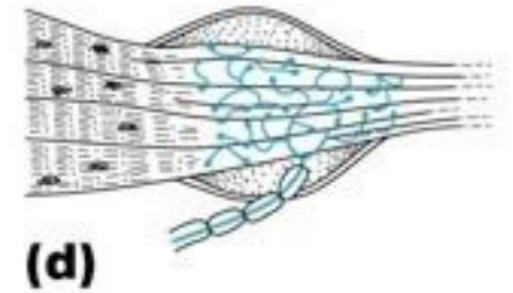
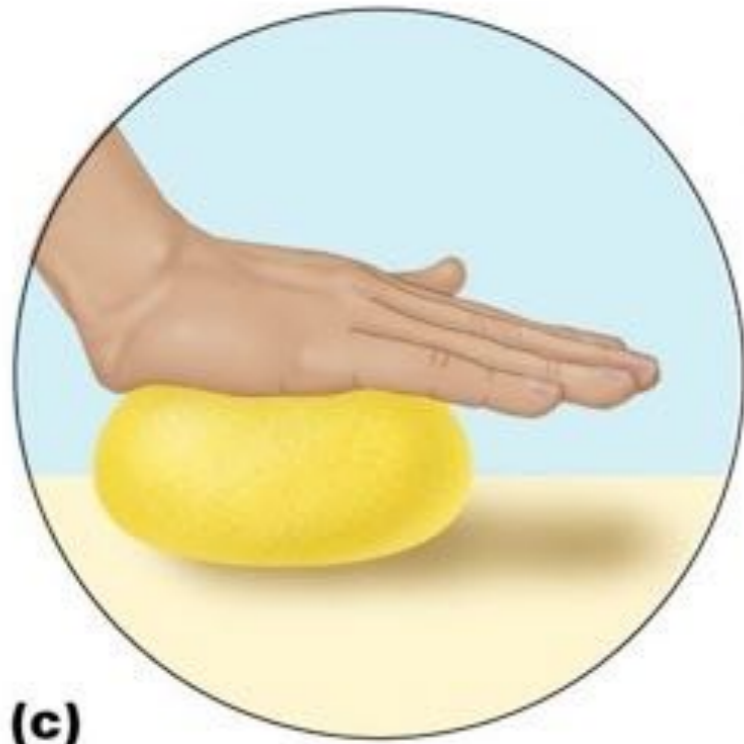
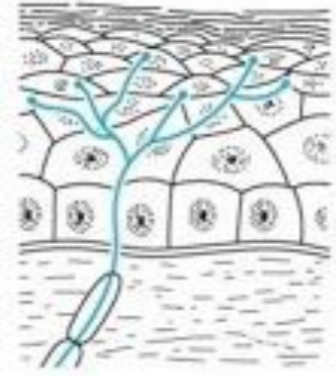
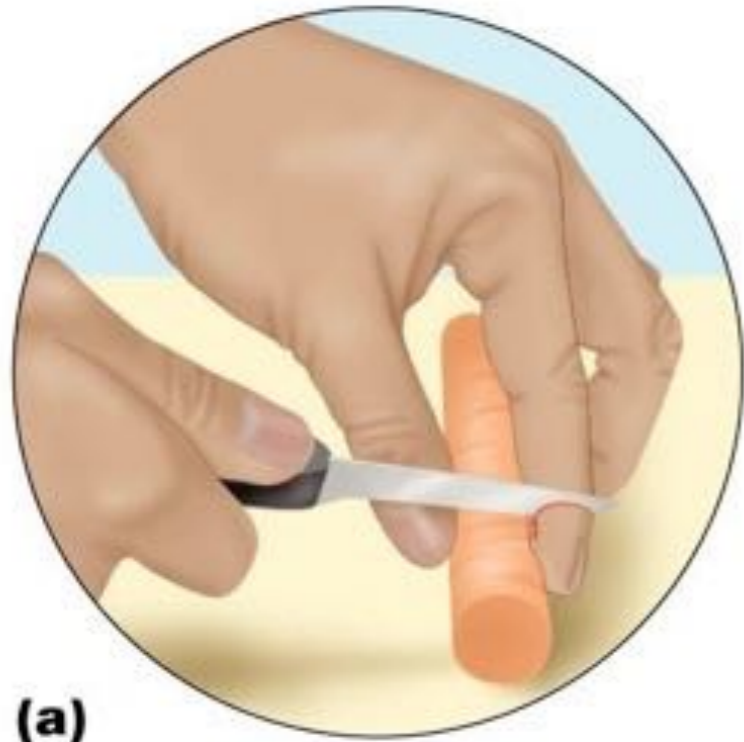


Differences Between Right and Left Patellar Reflexes



Miss School, Miss Out!

Background:
somatic senses:



1. Receptor region

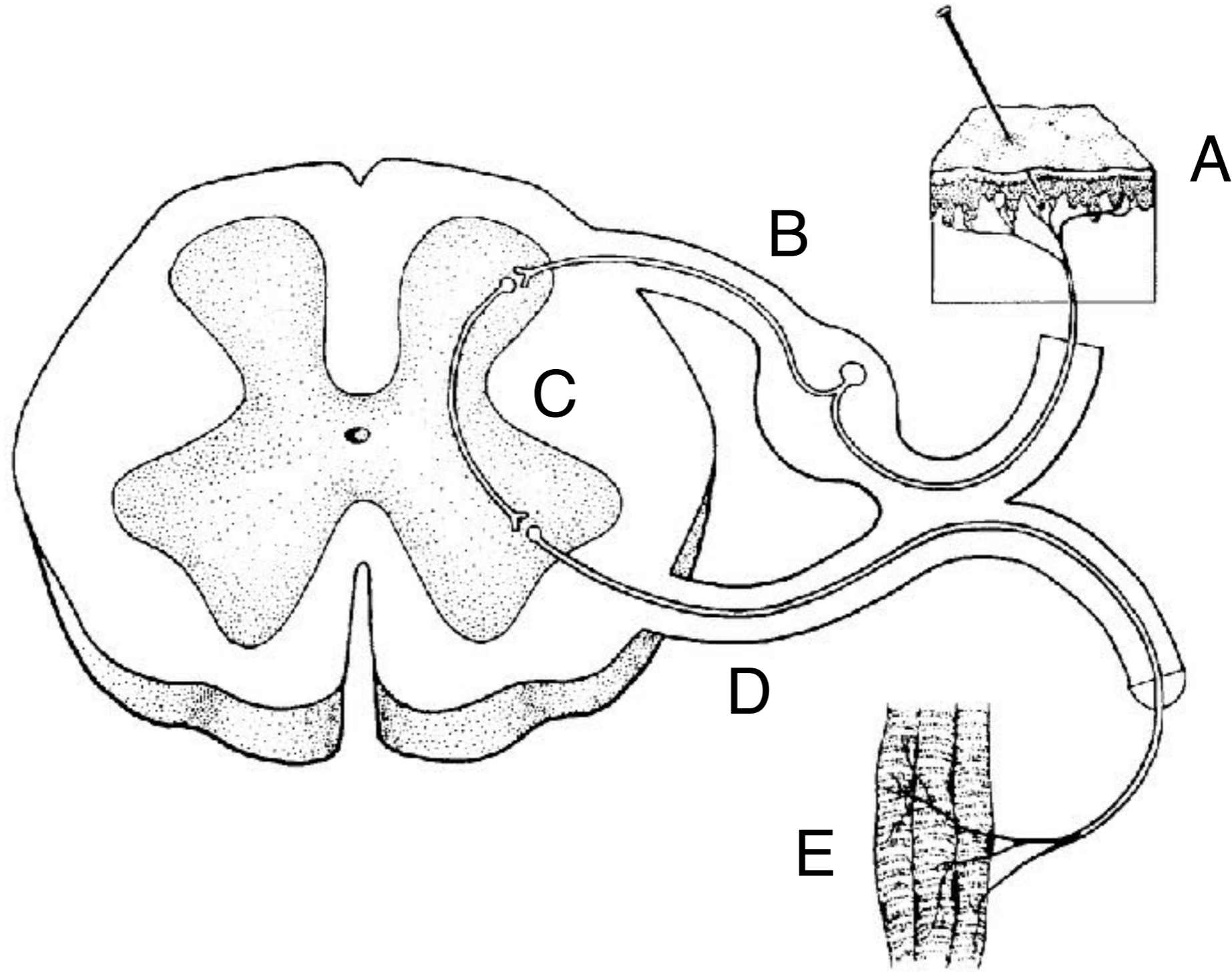
2. Afferent neuron

3. Interneuron

4. Efferent neuron

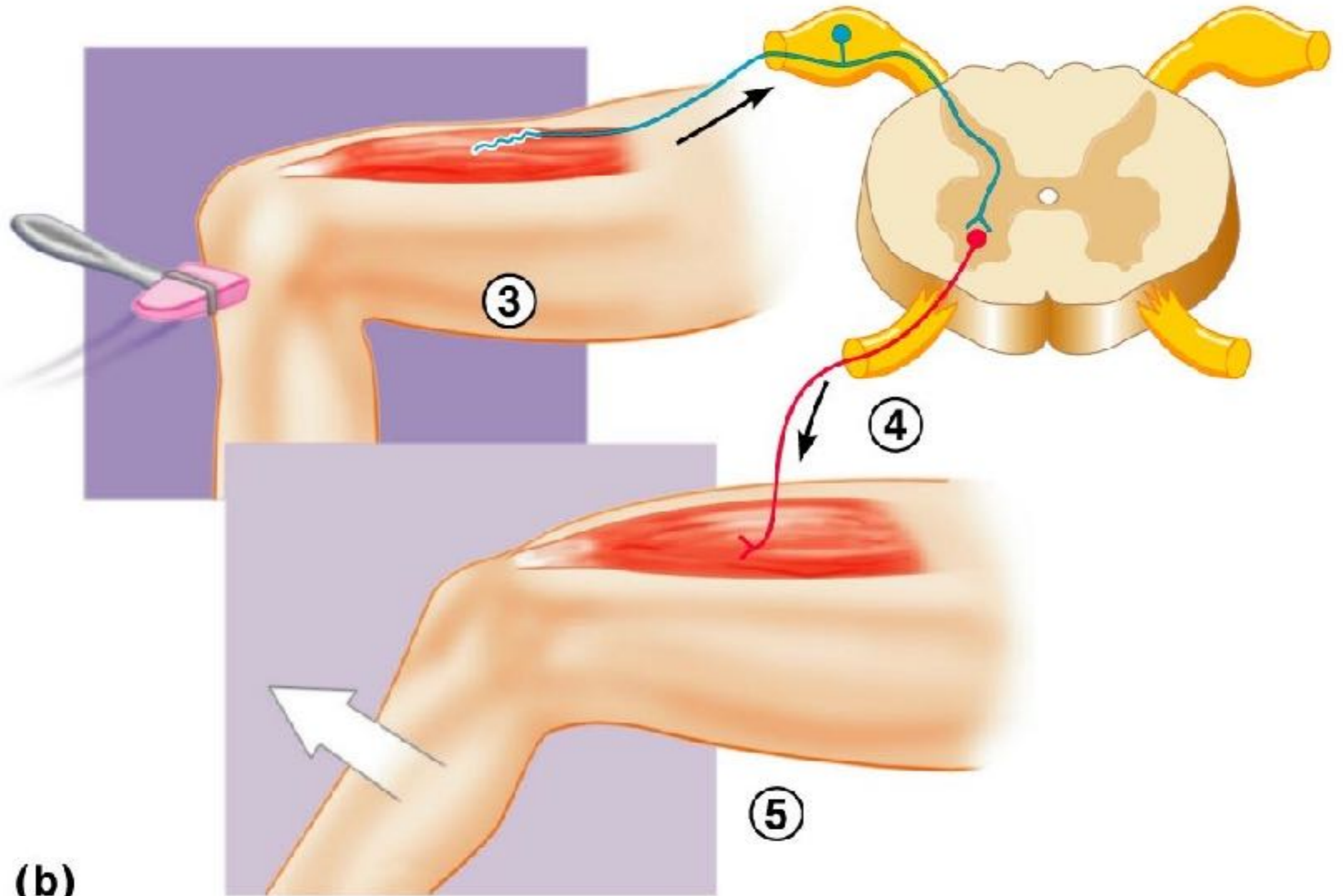
5. Effector

Background:
Reflex Arc



①

②



(b)

Differences Between Right and Left Patellar Reflexes

Question: Is there a difference between the right and left patellar reflex?

Hypothesis:

Observations & Data:

Analysis:

Conclusion:

Differences Between Right and Left Patellar Reflexes

By convention the deep tendon reflexes are graded as follows:

0 = no response; always abnormal

1+ = a slight but definitely present response; may or may not be normal

2+ = a brisk response; normal

3+ = a very brisk response; may or may not be normal

4+ = a tap elicits a repeating reflex (clonus); always abnormal

Differences Between Right and Left Patellar Reflexes

By convention the deep tendon reflexes are graded as follows:

0 = no response; always abnormal

1 = a slight but definitely present response; may or may not be normal

2 = a brisk response; normal

3 = a very brisk response; may or may not be normal

4 = a tap elicits a repeating reflex (clonus); always abnormal

Test Subject	Right Patellar Reflex	Left Patellar Reflex
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		

Differences Between Right and Left Patellar Reflexes

By convention the deep tendon reflexes are graded as follows:

0 = no response; always abnormal

1 = a slight but definitely present response; may or may not be normal

2 = a brisk response; normal

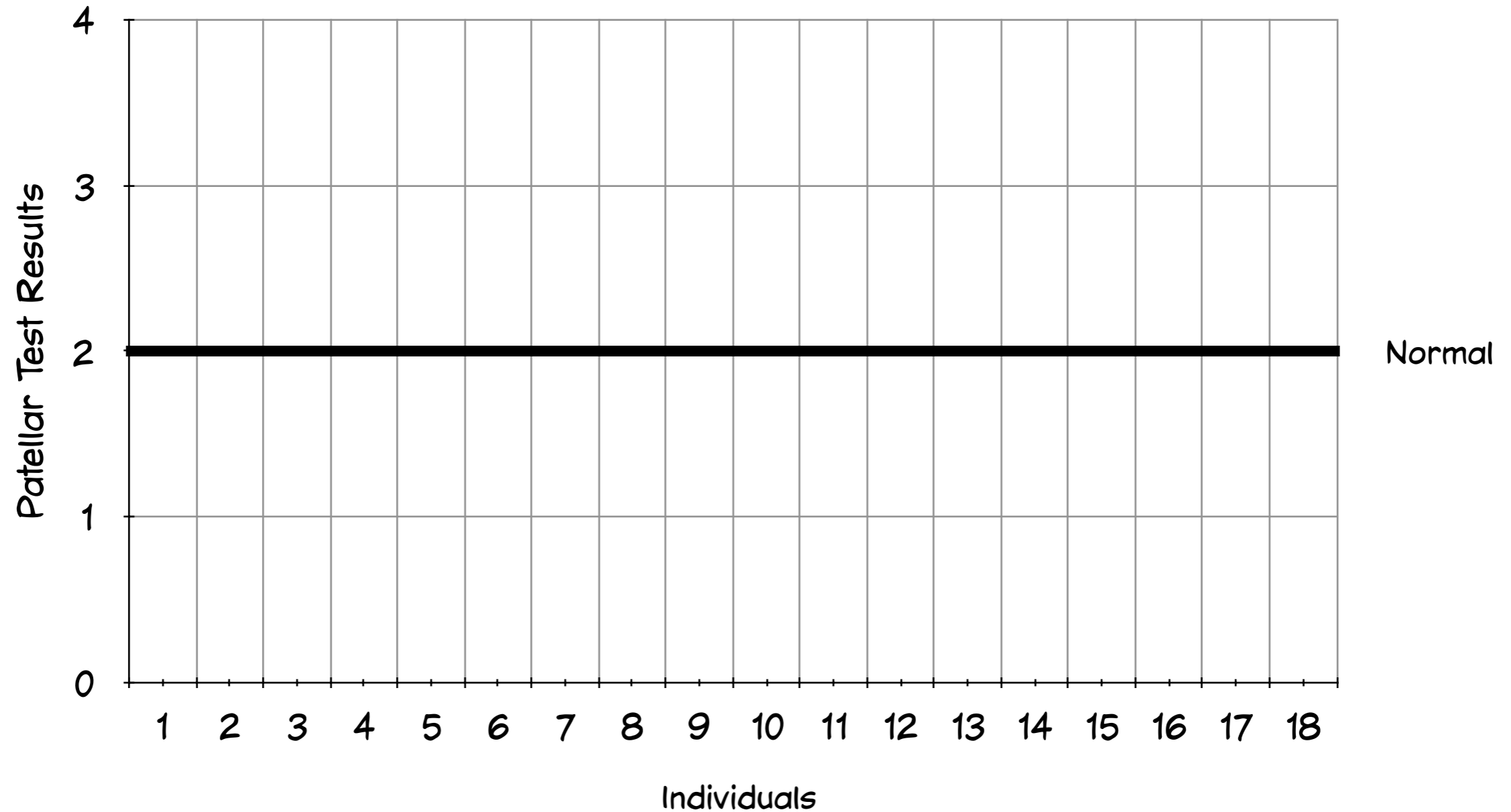
3 = a very brisk response; may or may not be normal

4 = a tap elicits a repeating reflex (clonus); always abnormal

Test Subject	Right Patellar Reflex	Left Patellar Reflex
1	2	2
2	1	2
3	2	3
4	3	2
5	2	2
6	1	1
7	2	2
8	2	4
9	3	2
10	2	2
11	2	2
12	2	2
13	3	2
14	2	2
15	2	2
16	3	3
17	2	2
18	2	2

Differences Between Right and Left Patellar Reflexes

Patellar Reflex Left vs. Right



■ Right ■ Left

0 = no response; always abnormal

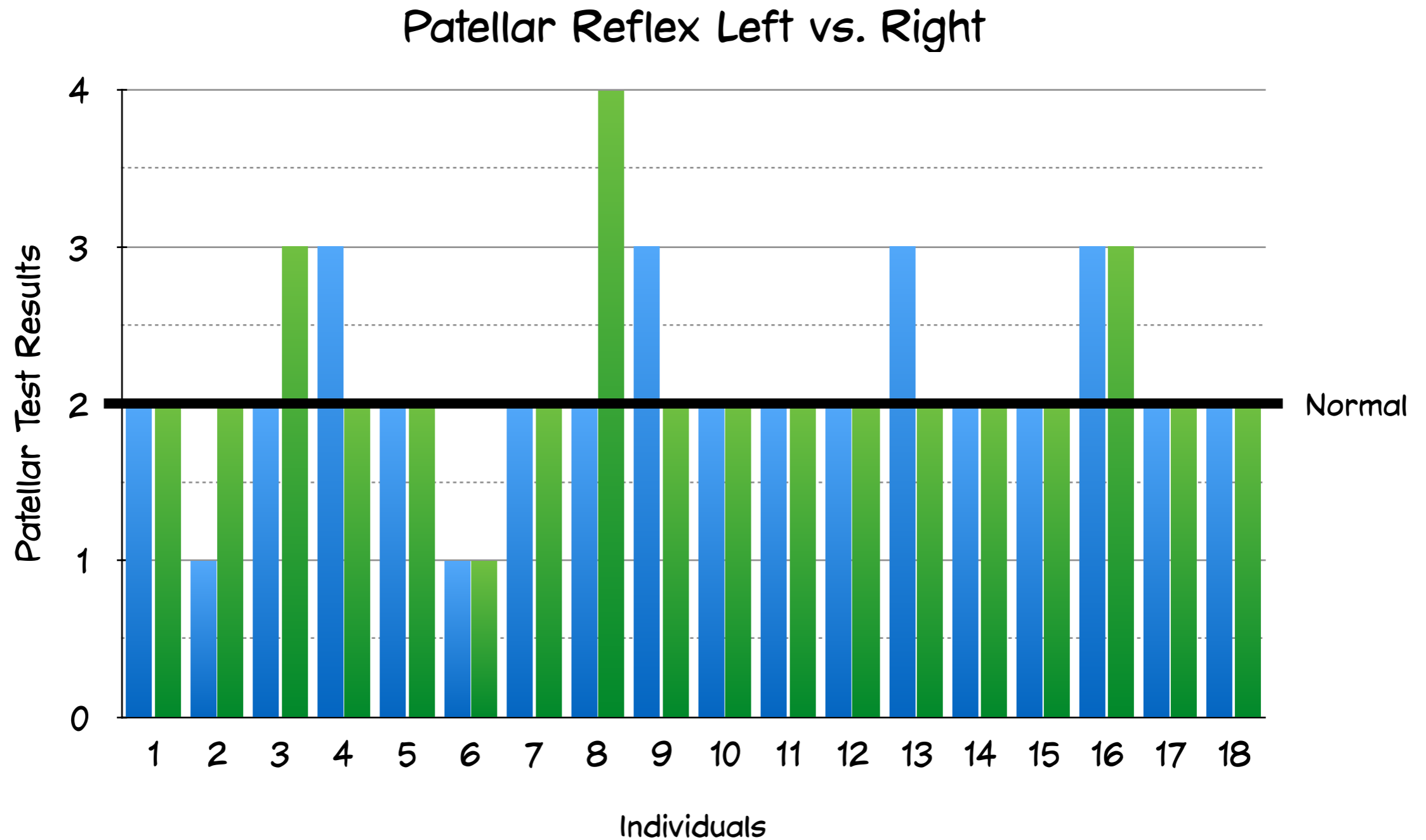
1+ = a slight but definitely present response; may or may not be normal

2+ = a brisk response; normal

3+ = a very brisk response; may or may not be normal

4+ = a tap elicits a repeating reflex; always abnormal

Differences Between Right and Left Patellar Reflexes



■ Right ■ Left

0 = no response; always abnormal

1+ = a slight but definitely present response; may or may not be normal

2+ = a brisk response; normal

3+ = a very brisk response; may or may not be normal

4+ = a tap elicits a repeating reflex; always abnormal

Differences Between Right and Left Patellar Reflexes



Miss School, Miss Out!

Definition

In a normal person, when a muscle tendon is tapped briskly, the muscle immediately contracts due to a two-neuron reflex arc involving the spinal or brainstem segment that innervates the muscle. The afferent neuron whose cell body lies in a dorsal root ganglion innervates the muscle or Golgi tendon organ associated with the muscles; the efferent neuron is an alpha motoneuron in the anterior horn of the cord. The cerebral cortex and a number of brainstem nuclei exert influence over the sensory input of the muscle spindles by means of the gamma motoneurons that are located in the anterior horn; these neurons supply a set of muscle fibers that control the length of the muscle spindle itself.

Hyporeflexia is an absent or diminished response to tapping. It usually indicates a disease that involves one or more of the components of the two-neuron reflex arc itself.

Hyperreflexia refers to hyperactive or repeating (clonic) reflexes. These usually indicate an interruption of corticospinal and other descending pathways that influence the reflex arc due to a suprasegmental lesion, that is, a lesion above the level of the spinal reflex pathways.

By convention the deep tendon reflexes are graded as follows:

- 0 = no response; always abnormal
- 1+ = a slight but definitely present response; may or may not be normal
- 2+ = a brisk response; normal
- 3+ = a very brisk response; may or may not be normal
- 4+ = a tap elicits a repeating reflex (clonus); always abnormal

Whether the 1 + and 3 + responses are normal depends on what they were previously, that is, the patient's reflex history; what the other reflexes are; and analysis of associated findings such as muscle tone, muscle strength, or other evidence of disease. Asymmetry of reflexes suggests abnormality.

Technique

All of the commonly used deep tendon reflexes are presented here in a group. In a screening examination you will usually find it more convenient to integrate the reflex examination into the rest of the examination of that part of the body; that is, do the upper extremity reflexes when examining the rest of the upper extremity. When an abnormality of the reflexes is suspected or discovered, however, the reflexes should be examined as a group with careful attention paid to the technique of the examination.

Valid test results are best obtained when the patient is relaxed and not thinking about what you are doing. After a general explanation, mingle the specific instructions with questions or comments designed to get the patient to speak at some length about some other topic. If you cannot get any response with a specific reflex—ankle jerks are usually the most difficult—then try the following:

- Several different positions of the limb.
- Get the patient to put slight tension on the muscle being tested. One method of achieving this is to have the patient strongly contract a muscle not being tested.
- In the upper extremity, have the patient make a fist with one hand while the opposite extremity is being tested.
- If the reflex being tested is the knee jerk or ankle jerk, have the patient perform the "Jendrassik maneuver," a reinforcement of the reflex (see [Gassel, 1964](#)). The patient's fingers of each hand are hooked together so each arm can forcefully pull against the other. The split second before you are ready to tap the tendon, say "pull."
- In general, any way to distract the patient from what you are doing will enhance the chances of obtaining the reflex. Having the patient count or give the names of children are examples.

The best position is for the patient to be sitting on the side of the bed or examining table. The Babinski reflex hammer ([Figure 72.1](#)) is very good. Use a brisk but not painful tap. Use your wrist, not your arm, for the action. In an extremity a useful maneuver is to elicit the reflex from several different positions, rapidly shifting the limb and performing the test. Use varying force and note any variance in response.