Reflex

A reflex action, differently known as a reflex, is an involuntary and nearly instantaneous movement in response to a stimulus.

Scientific use of the term “reflex” refers to a behavior that is mediated via the reflex arc; this does not apply to casual uses of the term “reflex”.

Human reflexes are simple motor responses that are automatically elicited by various sensory inputs. These reflexes can provide valuable insights into the functioning of the nervous system, particularly the brainstem and spinal cord. Reflexes involving the brainstem, such as the blink reflex, laryngeal adductor reflex, trigeminal hypoglossal reflex, and masseter H reflex, offer immediate information about the cranial-nerve functionality and the overall state of the brainstem. Similarly, spinal reflexes such as the H reflex of the soleus muscle, posterior root muscle reflexes, and sacral reflexes provide crucial information about the functionality of the spinal cord and peripheral nerves. One of the critical benefits of reflex monitoring is that it can provide continuous feedback without disrupting the surgical process due to no movement being induced in the surgical field.

These reflexes can be monitored in real time during surgical procedures to assess the integrity of the nervous system and detect potential neurological damage. It is particularly noteworthy that the reflexes provide motor and sensory information on the functional integrity of nerve fibers and nuclei. Utilizing these methodologies has the potential to advance or even revolutionize the field of intraoperative continuous monitoring, ultimately leading to improved surgical outcomes and enhanced patient care [1)]

Abdominal cutaneous reflex

Brainstem reflexes

Cough reflex

Trigemino-cardiac reflex…

1)
Choi J, Díaz-Baamonde A, Sánchez Roldán MLÁ, Mirallave Pescador A, Kim JS, Téllez MJ, Park KS, Deletis V. Advancing Intraoperative Neurophysiological Monitoring With Human Reflexes. J Clin Neurol. 2024 Mar;20(2):119-130. doi: 10.3988/jcn.2023.0416. PMID: 38433484.