

Chvostek's sign

Described by Czech-Austrian Professor *František Chvostek*, the Chvostek's sign refers to the twitching of ipsilateral facial muscles upon mechanical stimulation of the **facial nerve**. This clinical sign is associated with **hypocalcemia**. This could be evaluated by carefully tapping on the patient's cheek approximately 2 cm in front of the ear.

Clinical findings

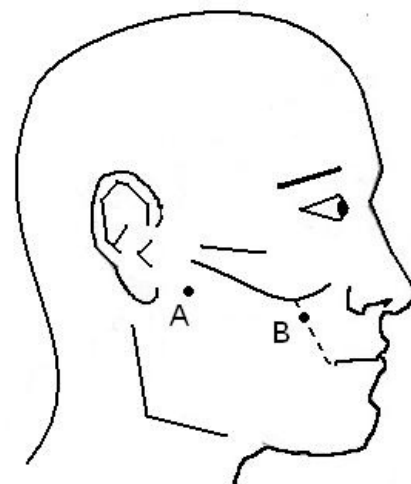
A positive Chvostek's sign could be due to the following related conditions as shown below:

- **Low parathyroid hormone (PTH) levels:** PTH regulates the body Ca^{2+} levels in the body and is released by the parathyroid glands when the Ca^{2+} levels are low. Hypoparathyroidism could occur for instance, as a result of resection of the parathyroid glands, or less frequently, as a consequence of autoimmune disorders (like autoimmune polyendocrine syndrome type 1).
- **Kidney failure**
- **Acute pancreatitis**
- **Electrolyte imbalances:** Ca^{2+} is one important electrolyte in the body, hence, its imbalance along with other disturbances such as Mg^{2+} and vitamin D could increase the excitability of the facial nerves, producing muscle contraction.
- **Respiratory alkalosis:** Often due to hyperventilation.
- **Certain medications:** Examples are bisphosphonates and proton pump inhibitors.

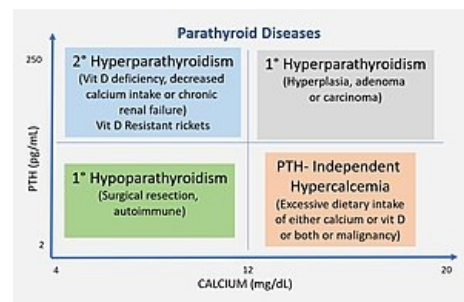
A negative Chvostek's sign is obtained when there is no facial muscle contraction following stimulation. However, this *does not necessarily exclude the presence of hypocalcemia*.

References

- ws: Chvostkův příznak
- Nikol Natalia Armata. *Chvostek Sign*. 15 May 2022 from Osmosis.org: <https://www.osmosis.org/answers/chvostek-sign#:~:text=The%20Chvostek%20sign%20is%20a,in%20front%20of%20the%20ear.>
- Silvan Omerovic, and Joe M Das. (2021). *Chvostek Sign*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK542326/>



Schematic representation of Chvostek points



Relationship of parathyroid diseases with calcium and PTH