

Significance of somatosensory evoked potentials in diagnosis and follow-up control in cases of damage to the lingual and/or mental nerve.

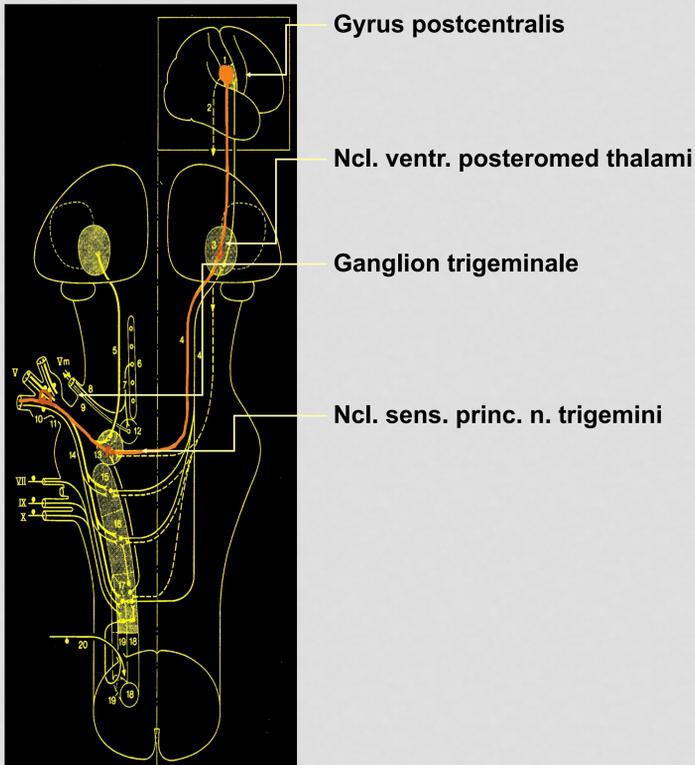
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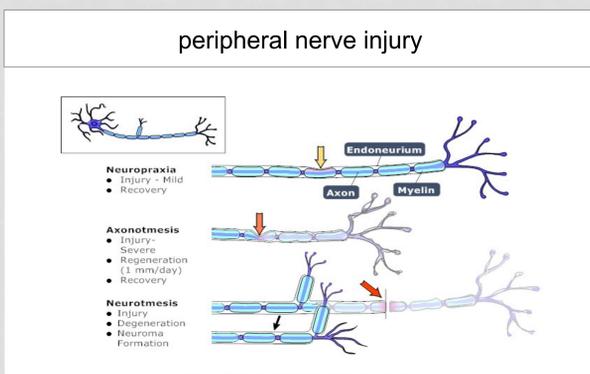
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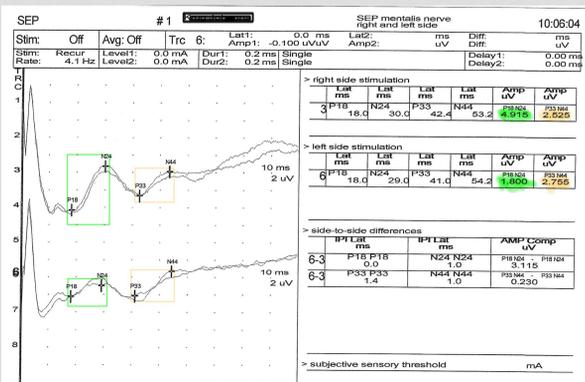
Neuropysiology of the sensory pathway:



Seddon Classification



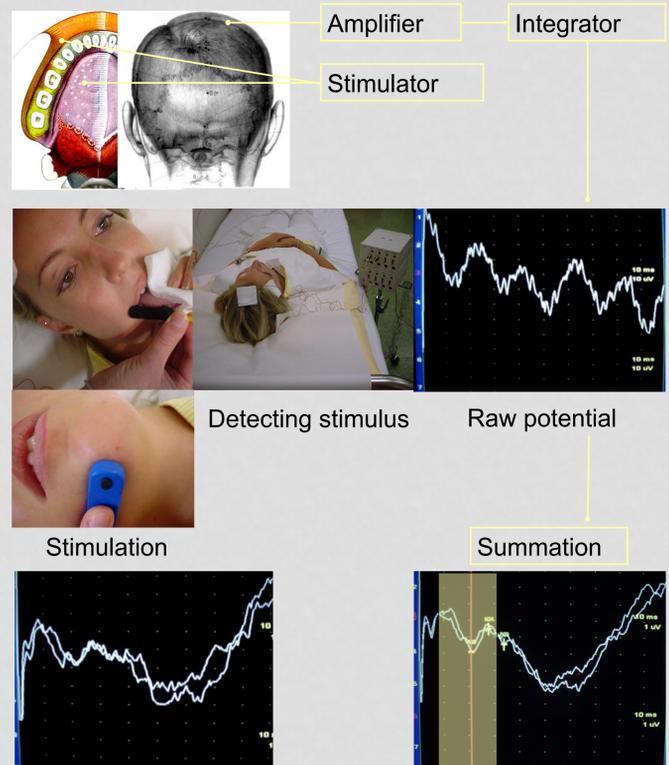
Example: f, 48a, 1 week after Extr. of 35, paresthesia in the area of innerv. N. ment.



Study results over 12 years: (2004-2016):

- 10 mentalis and lingualis SSEP's were evaluated in 10 healthy subjects to set normals
- 164 patients were investigated to document postoperative lesions of the lingual a/o mental nerve (7 of them on either side)
- Reduction in latency a/o amplitude was found in all subjects who showed clinical signs.
- Follow-up investigations were performed in 33 patients – 15 of them showed signs of re-afferentiation clinically and also electrophysiologically in the way of normalization of potentials.

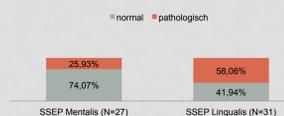
Electropysiological Diagnosis (SSEP) of the lingual/mental nerve:



Averaging of 400 single-stimuli leads to a significant response signal

P18
N24
P33

SSEP-Results after 3rd molar removal:



Pathological results were significantly more often seen in SSEP's of the lingual nerve compared to mental nerve after operative removal of 3rd molars.

SSEP Lingualis (N=51)



Distribution of normal versus pathological results in lingual nerve SSEP's in all investigated Subjects.

SSEP Mentalis (N=75)



Distribution of normal versus pathological results in mental nerve SSEP's in all investigated Subjects.

Conclusions:

- SEPs, triggered by electrical stimulation in the responsive area of the lingual or mental nerve are an objective parameter in the investigation of function and damage of trigeminal branches.
- The reproducibility of a normal potential as well as the good separation accuracy from normal to sensory deficit allows the use of this method in routine diagnostics.
- Possible applications range from the documentation of the afferent trigeminal nerve function to a reliable postoperative detection of a nerval lesion.
- Follow-up controls within the context of regeneration or reafferentiation can be objectively documented.
- However, the method presented should be considered a supplement to the clinical diagnosis. It cannot replace the conscientious clinical assessment.