

QEMG

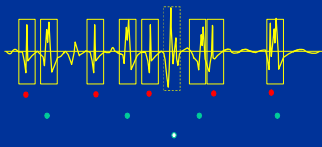
30 + 15 min demo

Computer aided analysis

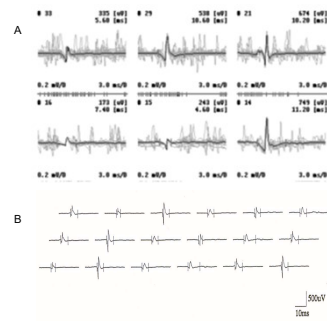
Decomposition;

techniques to decompose a mixed signal into its constituents

This example: Multi MUP analysis



Stilberg

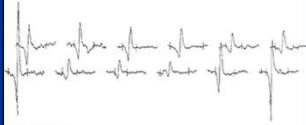


Multi-MUP analysis in different disorders

Normal



Neuropathy



Myopathy



500 μ V
10 ms Stålberg

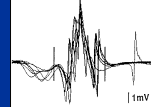
Jiggle in normal and abnormal MUPs

Normal



100 μ V
CAD = 0.009
CCC = 0.989

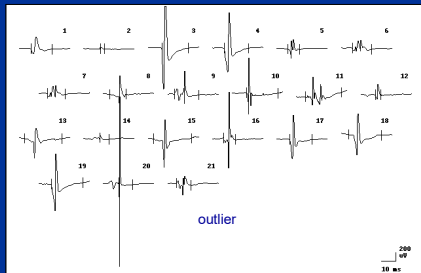
ALS



1 mV
CAD = 0.770
CCC = 0.877

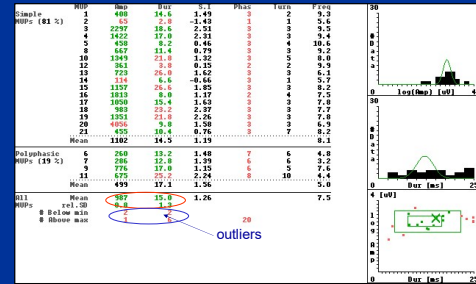
Stålberg

Combination of abnormally small and large MUPs (Hereditary distal myopathy)



Lat vastus m

Combination of abnormally small and large MUPs (Hereditary distal myopathy)



Lat vastus m



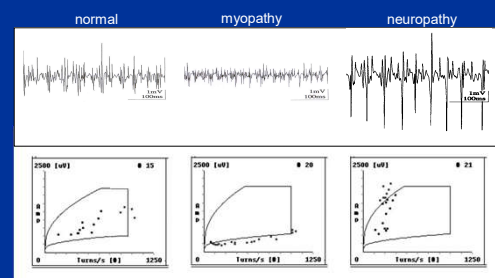
Interference pattern

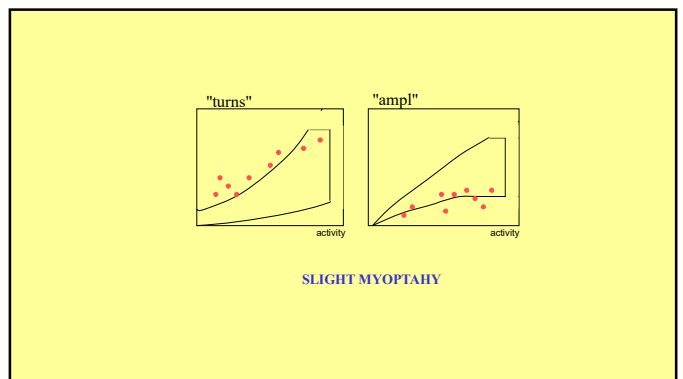
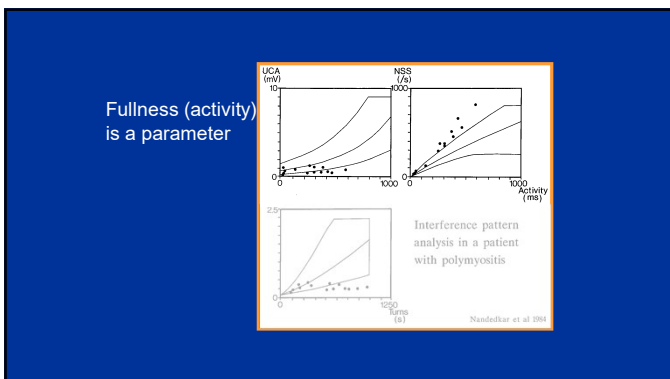
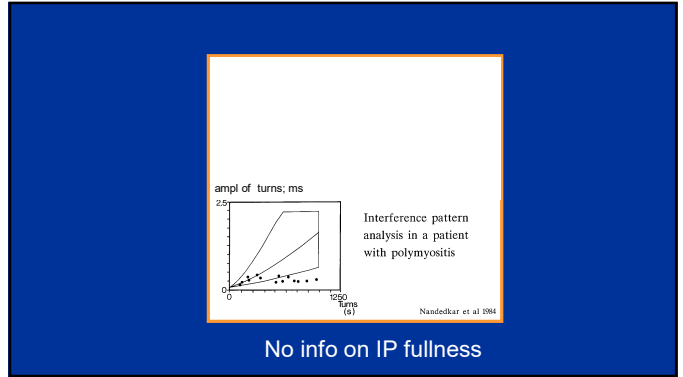
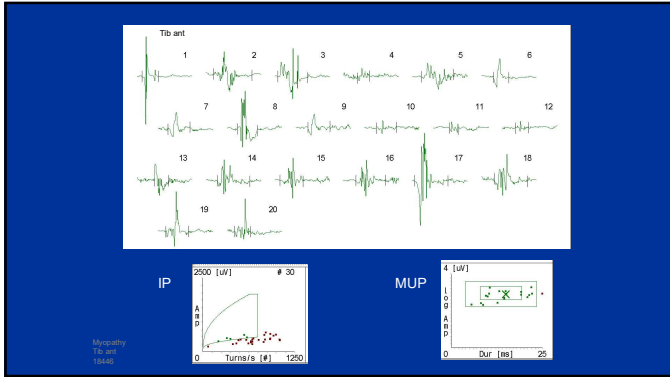
Methods

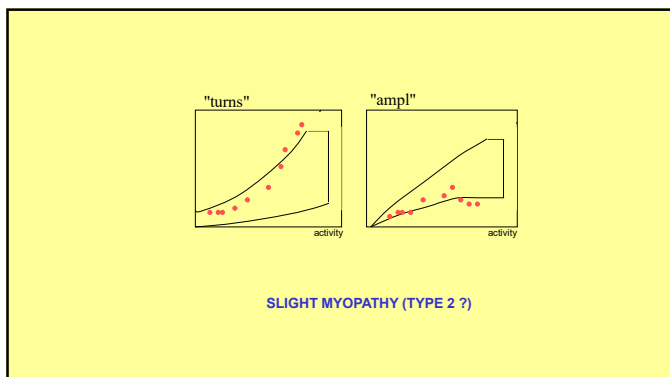
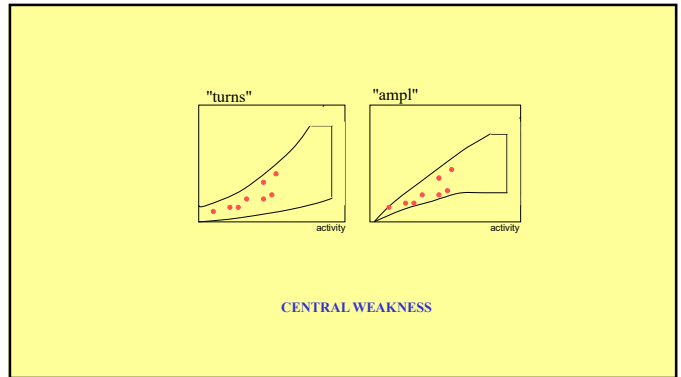
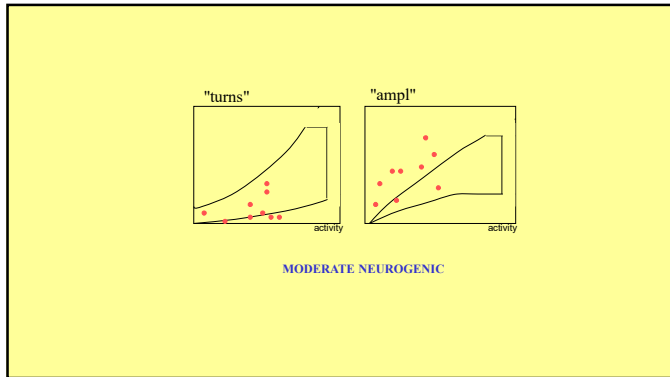
- recruitment analysis
- visual inspection (ampl, fullness)
- spectral analysis
- broad band filter analysis
- turns/amplitude analysis
- "ampl", "turns", activity

Computer analysis of EMG at full effort

Turns-Ampl (TA) analysis







How to quantitate Central drive

Parameters:

- pattern - firing rate, onset frequency
- fullness - RMS, integration, "activity"
- stim/voluntary difference
 - CMAP vs. RMS of voluntary EMG
 - superimposed twitch

Stilberg

Reasons for performing QEMG

- standardized way of measuring
- improved sensitivity
- results can be transferred
 - from one time to the other - follow up
 - from one physician to the other
 - from one lab to the other
- reliable results also from less experienced EMGers
- good during training