Neuromon bv

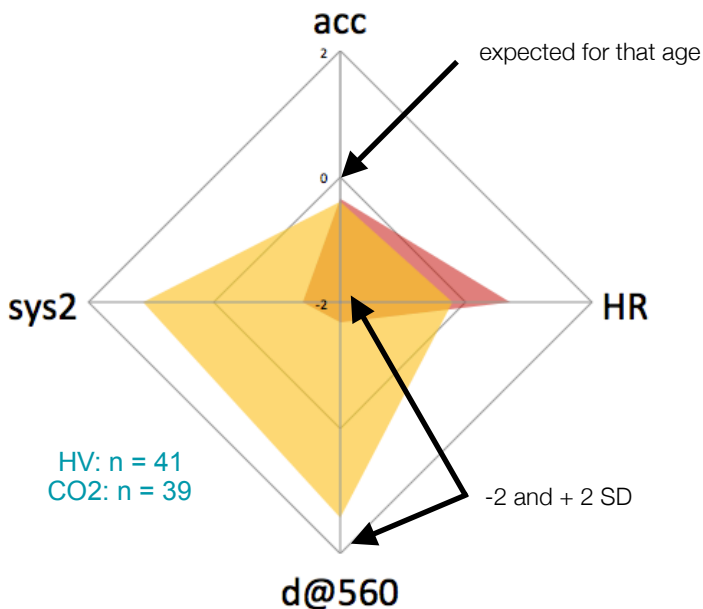|	
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Improved TCD parameters

In 2012 we proposed new parameters for measurements of middle cerebral artery flow velocity (MCAFV) recorded by Transcranial Doppler (TCD). Subsequently, we analysed the way these parameters change with age. The acceleration (Acc), first (Sys1) and second systolic peak (Sys2) and diastolic flow velocity at 560 ms after stroke onset (Dias@560) all decrease linearly with age. This makes it possible to calculate so-called Z-scores, expressing the difference in standard deviations between an actual measurement and the value expected for a given subject by linear extrapolation from his or her age.
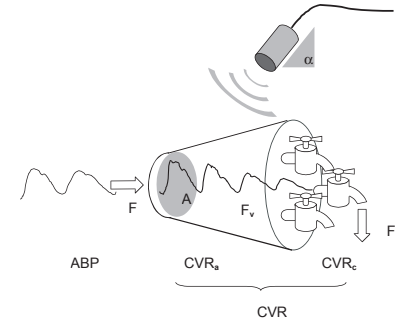

Radar plot of Z-scores

Subsequently, the Z-scores of the most important waveform characteristics of the MCAFV signal together with the heart rate can be combined into a so called Radar plot. Projecting these different characteristics within a single plot allows a better assessment of it's hemodynamic characteristics by pattern recognition.

Some characteristics:

- is based upon the analysis of the MCAFV waveform
- indicates how much the waveform characteristics deviate from expected for that age
- displays four characteristics of the signal in a single Radar plot

Hyperventilation versus CO2 retention

HV: n = 41
CO2: n = 39
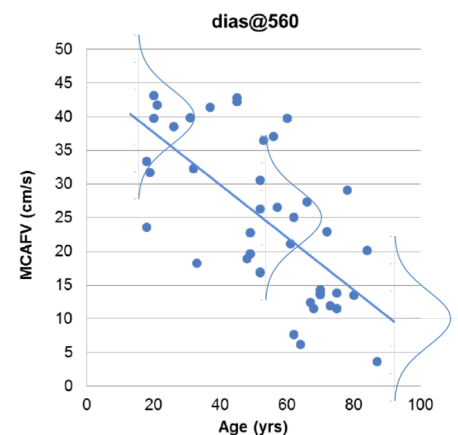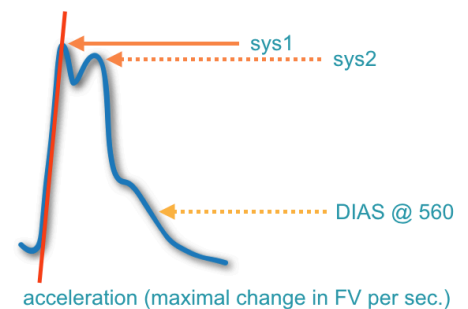
A novel approach to TCD interpretation.