**Table 2, Title: Heart rate variability features**

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| **Feature [unit]** | **Description** | **Connotation** |
| BpE | Beats per Epoch | ECG R-R intervals detection due to noise is reflected. If ECG is noise distorted, BpE decrease . This moslty appears during AS and wake. Longer heart rate is reflected when long term windowed. |
| TotPow [ms2] | Total power or variance of NN intervals of a defined window size. | Reflects overal heart rate variability [30,49] |
| VLF [ms2] | The power of the very low frequency band between 0.003-0.04 Hz of a defined window size. | Oscillations in VLF are attributed to peripheral resistance fluctuations caused by thermoregulation [44]. |
| LF [ms2] | The power of the low frequency band between 0.04-0.15 Hz of a defined window size. | LF fluctuations are assumed to be related to baroreflex activity and under parasympathetic and sympathetic influence [40,44]. Fluctuations in the neonatal baroreceptor loop are at approximately 0.07 Hz [40,45,46]. |
| LFnorm [%] | LF power in normalized units LF/(Total Power-VLF) x 100 | Normalization, to correct for total power variability. |
| HF [ms2] | The power of the high frequency band between 0.15-0.4 Hz of a defined window size. | HF fluctuations are associated with activities of the parasympathetic system and respiratory activity [42,44,45]. Respiratory activity is closely linked to preterm sleep states [7,12] and seems more prominent during quiet sleep [42]. |
| HFnorm [%] | HF power in normalized units HF/(Total Power-VLF) x 100 | Normalization, to correct for total power variability. |
| pHF1 [ms2] | The power of the high frequency band between 0.4-0.7 Hz | pHF1 fluctuations are associated with activities of the parasympathetic system and respiratory activity especially in reterm infants [31]. |
| pHF2 [ms2] | The power of the high frequency band between 0.7-1.5 Hz | pHF2 fluctuations are associated with activities of the parasympathetic system and respiratory activity especially in reterm infants [31]. |
| LF/HF [n.u.] | Ratio LF/HF | This estimate claims to reflect the sympathovagal balance in adults, although the value has to be established in newborns [45]. Increased values may indicate greater sympathetic and/or lesser vagal modulation [40]. |
| SDNN [ms] | The standard deviation of normal to normal R-R intervals of a defined window length. | Reflects the overal heart rate variability influenced by both the para- and sympathectiv nervous system [30,49]. |
| RMSSD [ms] | Root mean square of successive differences between adjacent R-R intervals of a defined window length. | Influenced mainly by parasympathetic activity and respiratory activity. |
| NNx [count] | The number of pairs of successive R-R intervals that differ by more than 10, 20, 30 or 50 ms of a defined window length. | NNx reflects parasympathetic activity. While NN10 covers more overall changes, NN50 represents high frequency variations with influence from respiratiory activity [54]. |
| pNNx [%] | The proportion of NNx divided by total number of R-R intervals of a defined window length. | pNNx are directly linked to the NNx features. pNNx for values of x<50 ms may provide more robust estimates of cardiac vagal tone modulation even in the presence of outliers [54,67]. |