# Heart-rate variability in low-risk prematurely born infants reaching normal term: A comparison with full-term newborns

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To investigate the influence of prematurity and postnatal age on the maturation of the autonomic nervous system function, we analysed heart-rate and heart-rate variability in twelve prematurely born infants (<37 weeks gestational age) reaching the conceptional age of 37-41 weeks. These neonates were compared with sixteen 37-41 week conceptional age newborns (<10 days postnatal age). Heart-rate variability was analysed by spectral analysis of interbeat intervals using Short-Time Fourier Transform. We found that during both active and quiet sleep, the durations of RR-intervals were shorter and the amplitude of heart-rate variability in different frequency bands was lower in prematures reaching term than in newborns of the same conceptional age ($P < 0.001$). Between-state comparison showed differences in both groups. In both groups, low-frequency heart-rate variability was higher in active sleep than in quiet sleep. Between-state differences of RR-intervals and high-frequency heart-rate va