

Table 2. Agreement between ECG- and WHOOP-derived RMSSD (ms)

Analysis	ECG	Agreement	Filter Strength					WHOOP filter
			None	Low	Medium	Strong	Very Strong	
Time matched; SWS detected by WHOOP	51.27±12.16	WHOOP	56.09±12.22*	55.35±12.03*	54.3±11.65	53.02±11.14	46.92±7.84	54.47±12.00
		Bias	4.82±4.24 ^{vs}	4.07±3.65 ^{vs}	3.03±3.43 ^{vs}	1.75±3.53 ^{vs}	-4.35±5.81 ^{n,l,m,s,w}	3.20±3.57 ^{vs}
		Residual	5.07±3.30 ^{vs}	4.36±2.85 ^{vs}	4.21±2.63 ^{vs}	4.63±2.57 ^{vs}	9.87±2.66 ^{n,l,m,s,w}	4.33±2.75 ^{vs}
		LOA	±16.42	±14.14	±13.28	±13.68	±22.52	±13.81
		%Bias	11.78±7.81 ^{vs}	10.32±6.71 ^{vs}	8.54±6.64 ^{vs}	6.59±7.04 ^{vs}	-2.70±9.04 ^{n,l,m,s,w}	8.54±6.65 ^{vs}
		%Residual	10.97±5.28	9.41±4.55 ^{vs}	8.89±4.73 ^{vs}	10.45±4.42 ^{vs}	15.42±4.07 ^{l,m,s,w}	9.29±4.53 ^{vs}
		%LOA	±30.23	±25.98	±25.71	±27.26	±35.03	±25.75
		ICC	0.97 (0.91-0.99)	0.98 (0.93-0.99)	0.98 (0.94-0.99)	0.98 (0.93-0.99)	0.91 (0.74-0.97)	0.98 (0.93-0.99)
Time matched; SWS detected by PSG	53.69±17.37	WHOOP	61.73±16.56*	61.59±16.44*	58.59±16.62*	55.02±14.48	44.85±8.55	58.59±17.00*
		Bias	8.05±4.83 ^{s,vs}	7.91±4.87 ^{s,vs}	4.91±3.35 ^{s,vs}	1.33±4.12 ^{n,l,m,vs,w}	-8.83±10.63 ^{n,l,m,s,w}	4.90±2.91 ^{s,vs}
		Residual	6.70±3.32 ^{vs}	6.76±3.34 ^{vs}	4.26±2.50 ^{vs}	6.14±2.58 ^{vs}	15.77±6.70 ^{n,l,m,s,w}	3.85±2.09 ^{vs}
		LOA	±18.70	±18.85	±12.99	±15.96	±41.19	±11.26
		%Bias	23.37±17.93 ^{vs}	23.25±17.97 ^{vs}	13.25±7.45 ^{s,vs}	8.39±6.70 ^{m,vs,w}	-4.37±11.44 ^{n,l,m,s,w}	12.74±6.53 ^{s,vs}
		%Residual	21.17±14.09	21.22±14.12	10.41±5.08	11.25±3.18 ^{vs}	18.22±6.3 ^s	9.75±4.07
		%LOA	±69.43	±69.58	±28.87	±25.94	±44.29	±25.31
		ICC	0.98 (0.94-0.99)	0.98 (0.94-0.99)	0.99 (0.97-1.00)	0.98 (0.95-0.99)	0.82 (0.47-0.94)	0.99 (0.98-1.00)

ECG, electrocardiogram; ICC, intraclass correlation coefficient; LOA, limits of agreement; PSG, polysomnography; RMSSD, root mean square of successive beat to beat interval differences; SWS, slow wave sleep; *, significant difference between ECG- and WHOOP-derived RMSSD (P<0.05); vs, significantly different from Very Strong filter (P<0.05); s, significantly different from Strong filter (P<0.05); m, significantly different from Medium filter (P<0.05); l, significantly different from Low filter (P<0.05); w, significantly different from WHOOP proprietary filter (P<0.05). Data are presented as mean ± 95% confidence interval. Bias is calculated as WHOOP value minus ECG value. %Bias is calculated as bias as a percentage of ECG value.