

Supplementary Table 2

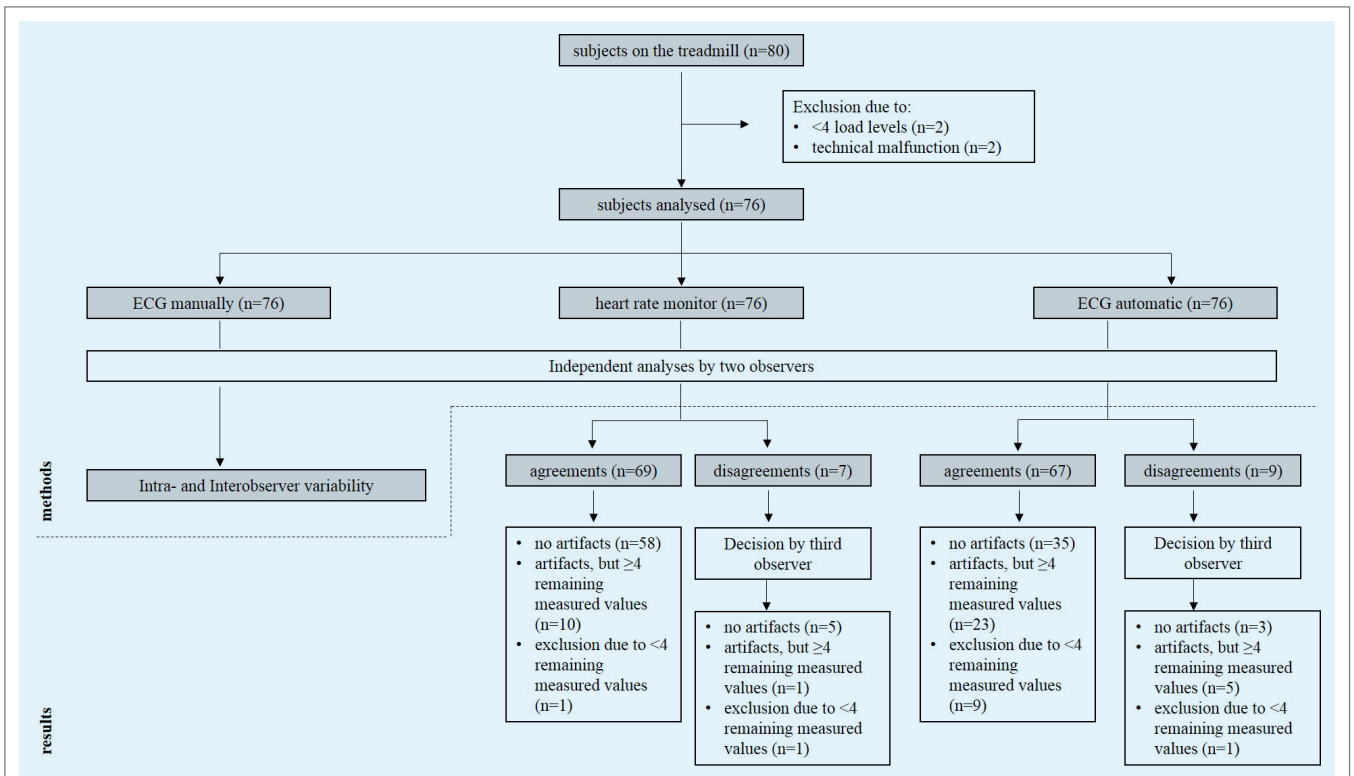
Comparison of manual heart rate detection by ECG with heart rate monitor. mECG=manual heart rate (HR) detection using electrocardiogram (ECG), HRM=HR detection using HR monitor. Various time points during ergometry: IAT=individual anaerobic threshold, 2 mmol/l=[lactate] 2 mmol/l, 3 mmol/l=[lactate] 3 mmol/l, 4 mmol/l=[lactate] 4 mmol/l, LT=lactate threshold, LSD/RER=regenerative and long jog, MER_{max}=medium endurance run, SER_{max}=speed endurance run, EIT_{max}=extensive interval training. SD=standard deviation, ICC=intraclass correlation coefficient, CI=95% confidence interval (lower limit; upper limit), CV=coefficient of variation, md=mean difference, LoA=limits of agreement (lower; upper). *1 paired t-test.

	mECG		HRM		P-VALUE*1	ICC	CI (5; 95)	CV (%)	BLAND-ALTMAN		
	N	MEAN (SD)	N	MEAN (SD)					CI (5; 95)	MD (SD)	LoA
IAT (bpm)	76	163.5 (15.2)	74	162.4 (15.3)	0.259	0.977	0.963; 0.985	2.1	1.8; 2.5	-0.6 (4.6)	-9.4; 8.4
2 mmol/l (bpm)	76	151.9 (23.2)	74	151.2 (23.9)	0.443	0.991	0.985; 0.994	2.4	2.0; 2.8	0.4 (4.5)	-8.5; 9.3
3 mmol/l (bpm)	76	167.1 (14.8)	74	165.8 (15.0)	0.111	0.974	0.959; 0.984	2.1	1.8; 2.5	0.9 (4.6)	-8.2; 9.9
4 mmol/l (bpm)	76	174.8 (13.7)	74	173.2 (13.9)	0.030	0.973	0.956; 0.983	1.9	1.6; 2.2	1.1 (4.4)	-7.4; 9.7
LT (bpm)	76	128.9 (15.6)	74	128.9 (16.1)	0.496	0.982	0.971; 0.989	2.5	2.1; 2.9	-0.3 (4.2)	-8.7; 8.0
LSD/RER (bpm)	76	138.4 (16.0)	74	138.4 (17.0)	0.730	0.926	0.883; 0.954	4.5	3.8; 5.3	-0.4 (8.7)	-17.5; 16.8
MER _{max} (bpm)	76	164.3 (15.4)	74	163.5 (15.8)	0.702	0.965	0.945; 0.978	2.6	2.1; 3.0	0.3 (5.7)	-11.0; 11.5
SER _{max} (bpm)	76	169.7 (15.0)	74	168.6 (15.4)	0.396	0.960	0.936; 0.974	2.6	2.2; 3.1	0.6 (6.0)	-11.1; 12.3
EIT _{max} (bpm)	76	174.3 (14.6)	74	173.2 (15.0)	0.398	0.950	0.921; 0.969	2.8	2.3; 3.2	0.6 (6.4)	-12.0; 13.2

Supplementary Table 3

Comparison of manual heart rate detection by ECG with automatic heart rate detection by ECG. mECG=manual heart rate (HR) detection using electrocardiogram (ECG), aECG=automatic HR detection using ECG. Various time points during ergometry: IAT=individual anaerobic threshold, 2 mmol/l=[lactate] 2 mmol/l, 3 mmol/l=[lactate] 3 mmol/l, 4 mmol/l=[lactate] 4 mmol/l, LT=lactate threshold, LSD/RER=regenerative and long jog, MER_{max}=medium endurance run, SER_{max}=speed endurance run, EIT_{max}=extensive interval training. SD=standard deviation, ICC=intraclass correlation coefficient, CI=95% confidence interval (lower limit; upper limit), CV=coefficient of variation, md=mean difference, LoA=limits of agreement (lower; upper). *1 paired t-test.

	mECG		aECG		P-VALUE*1	ICC	CI (5; 95)	CV (%)	BLAND-ALTMAN		
	N	MEAN (SD)	N	MEAN (SD)					CI (5; 95)	MD (SD)	LoA
IAT (bpm)	76	163.5 (15.2)	63	163.2 (15.8)	0.645	0.927	0.880; 0.956	3.5	2.9; 4.1	-0.5 (8.2)	-16.5; 15.5
2 mmol/l (bpm)	76	151.9 (23.2)	63	153.5 (15.1)	0.716	0.940	0.900; 0.964	3.3	2.7; 3.9	-0.3 (7.3)	-14.6; 13.9
3 mmol/l (bpm)	76	167.1 (14.8)	63	166.3 (15.0)	0.896	0.908	0.848; 0.944	3.7	3.0; 4.3	-0.1 (8.7)	-17.1; 16.9
4 mmol/l (bpm)	76	174.8 (13.7)	63	172.8 (15.0)	0.428	0.861	0.771; 0.916	4.3	3.5; 5.0	1.0 (6.6)	-18.8; 20.8
LT (bpm)	76	128.9 (15.6)	63	128.4 (16.3)	0.910	0.955	0.926; 0.973	3.5	2.9; 4.2	0.1 (6.6)	-13.1; 12.9
LSD/RER (bpm)	76	138.4 (16.0)	63	135.8 (16.7)	0.112	0.868	0.781; 0.920	6.2	5.1; 7.4	2.2 (10.8)	-18.9; 23.3
MER _{max} (bpm)	76	164.3 (15.4)	63	162.1 (16.3)	0.327	0.874	0.792; 0.924	5.3	4.3; 6.2	1.3 (10.6)	-19.4; 22.1
SER _{max} (bpm)	76	169.7 (15.0)	63	167.5 (16.2)	0.297	0.868	0.783; 0.920	4.9	4.0; 5.8	1.4 (10.7)	-19.5; 22.3
EIT _{max} (bpm)	76	174.3 (14.6)	63	171.5 (16.4)	0.126	0.863	0.773; 0.917	4.8	3.9; 5.8	2.1 (10.7)	-18.9; 23.1



Supplementary Figure 1

Overview of subject analysis.