

Table S1. Wheel-running activity for day 1 in control and high runner (HR) lines of house mice (nested ANCOVAs)

	<i>N</i>	Control	HR normal	HR mini	HRnormal/C	HRmini/C	HRmini/ HR normal	Line type	Mini muscle	Age
Total revolutions/day (Day 1)	176	3.06	5.77	7.77	1.89	2.54	1.35	$F_{1,6}=10.61$ $P=0.0173$	$F_{1,166}=8.72$ $P=0.0036$	$F_{1,166}=0.87$ $P=0.3521$
1-min intervals/day (Day 1)	176	459	525	523	1.14	1.14	0.99	$F_{1,6}=3.21$ $P=0.1232$	$F_{1,166}=0.00$ $P=0.9591$	$F_{1,166}=0.71$ $P=0.3993$
Average r.p.m. (Day 1)	176	6.45	10.95	14.18	1.70	2.19	1.29	$F_{1,6}=18.94$ $P=0.0048$	$F_{1,166}=10.09$ $P=0.0018$	$F_{1,166}=5.80$ $P=0.0171$
Maximal r.p.m. (Day 1)	176	17.85	26.43	29.41	1.48	1.65	1.11	$F_{1,6}=13.80$ $P=0.0099$	$F_{1,166}=1.60$ $P=0.2081$	$F_{1,166}=2.26$ $P=0.1346$

Table S2. Wheel-running activity for day 2 in control (C) and high runner (HR) lines of house mice (nested ANCOVAs)

	<i>N</i>	Control	HR normal	HR mini	HRnormal/C	HRmini/C	HRmini/ HR normal	Line type	Mini muscle	Age
Total revolutions/day (Day 2)	194	3.07	8.12	8.60	2.64	2.80	1.06	$F_{1,6}=91.04$ $P<0.0001$	$F_{1,184}=0.93$ $P=0.3365$	$F_{1,184}=0.43$ $P=0.5119$
1-min intervals/day (Day 2)	194	366	471	458	1.29	1.25	0.97	$F_{1,6}=7.93$ $P=0.0305$	$F_{1,184}=0.20$ $P=0.6533$	$F_{1,184}=2.71$ $P=0.1014$
Average r.p.m. (Day 2)	194	7.71	16.65	18.55	2.16	2.41	1.11	$F_{1,6}=65.73$ $P=0.0002$	$F_{1,184}=2.79$ $P=0.0969$	$F_{1,184}=3.75$ $P=0.0545$
Maximal r.p.m. (Day 2)	194	17.55	29.82	32.70	1.70	1.86	1.10	$F_{1,6}=63.21$ $P=0.0002$	$F_{1,184}=3.29$ $P=0.0714$	$F_{1,184}=6.42$ $P=0.0121$

Table S3. Wheel-running activity for day 3 in control (C) and high runner (HR) lines of house mice (nested ANCOVAs)

	<i>N</i>	Control	HR normal	HR mini	HRnormal/C	HRmini/C	HRmini/ HR normal	Line type	Mini muscle	Age
Total revolutions/day (Day 3)	195	3.43	8.90	9.79	2.60	2.86	1.10	$F_{1,6}=72.09$ $P<0.0001$	$F_{1,185}=1.38$ $P=0.2418$	$F_{1,185}=0.99$ $P=0.3221$
1-min intervals/day (Day 3)	195	405	494	475	1.22	1.17	0.96	$F_{1,6}=6.30$ $P=0.0459$	$F_{1,185}=0.36$ $P=0.5471$	$F_{1,185}=1.01$ $P=0.3157$
Average r.p.m. (Day 3)	195	8.38	18.20	21.03	2.17	2.51	1.16	$F_{1,6}=71.44$ $P=0.0001$	$F_{1,185}=4.83$ $P=0.0293$	$F_{1,185}=4.83$ $P=0.0377$
Maximal r.p.m. (Day 3)	195	18.89	31.62	36.09	1.67	1.91	1.14	$F_{1,6}=55.53$ $P=0.0003$	$F_{1,185}=6.29$ $P=0.0130$	$F_{1,185}=5.75$ $P=0.0175$

Table S4. Wheel-running activity for day 4 in control (C) and high runner (HR) lines of house mice (nested ANCOVAs)

	<i>N</i>	Control	HR normal	HR mini	HRnormal/C	HRmini/C	HRmini/ HR normal	Line type	Mini muscle	Age
Total revolutions/day (Day 4)	194	3.62	10.33	11.86	2.85	3.27	1.15	$F_{1,6}=6.48$ $P<0.0001$	$F_{1,184}=3.29$ $P=0.0712$	$F_{1,184}=0.06$ $P=0.8131$
1-min intervals/day (Day 4)	193	410	505	488	1.23	1.19	0.97	$F_{1,6}=11.45$ $P=0.0148$	$F_{1,183}=0.39$ $P=0.5350$	$F_{1,183}=0.71$ $P=0.4022$
Average r.p.m. (Day 4)	194	8.94	20.14	24.37	2.25	2.73	1.21	$F_{1,6}=78.59$ $P=0.0001$	$F_{1,184}=9.70$ $P=0.0021$	$F_{1,184}=0.30$ $P=0.5817$
Maximal r.p.m. (Day 4)	194	19.40	33.65	38.37	1.73	1.98	1.14	$F_{1,6}=98.05$ $P<0.0001$	$F_{1,184}=7.84$ $P=0.0057$	$F_{1,184}=2.70$ $P=0.1019$

Data were transformed as necessary to improve normality of residuals. Values are back-transformed least-squares means from SAS Procedure Mixed (and ratios of them). Total revolutions/day=number of revolutions $\times 10^2$; 1 revolution=1.12 m; 1-min intervals/day is the number of 1-min intervals during which any wheel revolutions occurred.

Table S5. Wheel-running activity for days 5 to 6 in control (C) and high runner (HR) lines of house mice (nested ANCOVAs)

	Transform	N	Control	HR normal	HR mini	HR normal/C	HR mini/C	HR mini/HR normal	Line type	Mini muscle	Estrous cycle	Age	Time
Total revolutions/day (Day 5)	^0.6	195	3.64	11.40	14.56	3.13	3.99	1.28	$F_{1,6}=70.88$ $P=0.0002$	$F_{1,185}=8.39$ $P=0.0042$		$F_{1,185}=0.34$ $P=0.5619$	
Total revolutions/day (partial Day 6 – Group 2)	^1.5	66	3.05	11.20	15.04	3.67	4.93	1.34	$F_{1,6}=14.27$ $P=0.0092$	$F_{1,51}=9.94$ $P=0.0027$	$F_{4,51}=1.90$ $P=0.1242$	$F_{1,51}=4.08$ $P=0.0487$	$F_{1,51}=0.30$ $P=0.5855$
Total revolutions/day (partial Day 6 – Group 3)	none	63	3.52	12.49	14.24	3.55	4.04	1.14	$F_{1,6}=43.85$ $P=0.0006$	$F_{1,48}=1.24$ $P=0.2713$	$F_{4,48}=1.16$ $P=0.3389$	$F_{1,48}=8.87$ $P=0.0045$	$F_{1,48}=2.39$ $P=0.1288$
1-min intervals/day (Day 5)	none	195	386	529	565	1.37	1.46	1.07	$F_{1,6}=11.50$ $P=0.0147$	$F_{1,185}=1.22$ $P=0.2716$		$F_{1,185}=1.62$ $P=0.2050$	
1-min intervals/day (partial Day 6 – Group 2)	^1.5	66	273	441	397	1.62	1.45	0.90	$F_{1,6}=18.41$ $P=0.0051$	$F_{1,51}=1.70$ $P=0.1986$	$F_{4,51}=1.70$ $P=0.1650$	$F_{1,51}=4.12$ $P=0.0477$	$F_{1,51}=2.51$ $P=0.1195$
1-min intervals/day (partial Day 6 – Group 3)	^2.3	63	359	522	526	1.45	1.47	1.01	$F_{1,6}=20.40$ $P=0.0040$	$F_{1,48}=0.02$ $P=0.8908$	$F_{4,48}=0.26$ $P=0.9015$	$F_{1,48}=10.39$ $P=0.0023$	$F_{1,48}=0.07$ $P=0.7930$
Average r.p.m. (Day 5)	^0.8	195	9.39	21.28	26.20	2.27	2.79	1.23	$F_{1,6}=72.03$ $P=0.0001$	$F_{1,185}=11.65$ $P=0.0008$		$F_{1,185}=0.25$ $P=0.6195$	
Average r.p.m. (partial Day 6 – Group 2)	^10.0	66	10.53	25.05	35.74	2.38	3.39	1.43	$F_{1,6}=8.51$ $P=0.0267$	$F_{1,51}=33.50$ $P<0.0001$	$F_{4,51}=0.73$ $P=0.5787$	$F_{1,51}=2.23$ $P=0.1417$	$F_{1,51}=0.00$ $P=0.9457$
Average r.p.m. (partial Day 6 – Group 3)	^4.0	63	10.15	23.95	27.16	2.36	2.67	1.13	$F_{1,6}=66.31$ $P=0.0002$	$F_{1,48}=2.53$ $P=0.1184$	$F_{4,48}=1.79$ $P=0.1470$	$F_{1,48}=5.63$ $P=0.0217$	$F_{1,48}=6.03$ $P=0.0177$
Maximal r.p.m. (Day 5)	^0.8	195	20.01	35.44	40.39	1.77	2.02	1.14	$F_{1,6}=75.90$ $P=0.0001$	$F_{1,185}=7.84$ $P=0.0057$		$F_{1,185}=2.15$ $P=0.1439$	
Maximal r.p.m. (partial Day 6 – Group 2)	^3.5	66	24.69	40.31	49.1	1.63	2.00	1.23	$F_{1,6}=13.35$ $P=0.0107$	$F_{1,51}=22.87$ $P<0.0001$	$F_{4,51}=1.12$ $P=0.3559$	$F_{1,51}=1.16$ $P=0.2868$	$F_{1,51}=0.48$ $P=0.4924$
Maximal r.p.m. (partial Day 6 – Group 3)	^log ₁₀	63	20.93	38.01	40.66	1.82	1.94	1.07	$F_{1,6}=103.37$ $P<0.0001$	$F_{1,48}=0.95$ $P=0.3343$	$F_{4,48}=1.64$ $P=0.1787$	$F_{1,48}=6.94$ $P=0.0113$	$F_{1,48}=7.03$ $P=0.0108$

Values are back-transformed least-squares means from SAS Procedure Mixed (and ratios of them). Total revolutions/day=number of revolutions $\times 10^3$; 1 revolution=1.12 m; 1-min intervals/day is the number of 1-min intervals during which any wheel revolutions occurred.

Values from day 5 include mice from groups 1, 2 and 3. Values from day 6 were separately analyzed for mice that ran only until 2:00 h (Group 2) and mice that ran until 7:00 h (Group 3).

Analyses for day 6 had time of capture included in the model as a covariate and estrous cycle included as a cofactor. Data were transformed as indicated to improve normality of residuals.