









**Table S2.** The pre-stimulation variables during the C-start test (Experiment 1) following acute cooling ( $3^{\circ}\text{C hr}^{-1}$  using  $14^{\circ}\text{C}$ -acclimated cunner) or temperature acclimation (5-6 weeks). The variables are distance to the arena wall in body lengths (BL), distance to the stimulus in BL, and angle of the fish relative to the stimulus ( $^{\circ}$ ).

Temperature ( $^{\circ}\text{C}$ )	Exposure	Sample size	Wall distance (BL)	Stimulus distance (BL)	Stimulus angle ( $^{\circ}$ )
2	Acute	14	$2.4 \pm 0.3$	$0.2 \pm 0.2$	$168.3 \pm 11.7$
	Acclimated	14	$1.0 \pm 0.3$	$0.5 \pm 0.2$	$107.7 \pm 23.2$
5	Acute	15	$0.8 \pm 0.1$	$1.0 \pm 0.4$	$114.9 \pm 18.5$
	Acclimated	14	$0.8 \pm 0.3$	$1.5 \pm 0.4$	$33.5 \pm 13.5$
8	Acute	16	$0.4 \pm 0.1$	$1.0 \pm 0.1$	$55.9 \pm 15.2$
	Acclimated	14	$0.8 \pm 0.1$	$1.4 \pm 0.1$	$39.1 \pm 9.0$
11	Acute	16	$0.7 \pm 0.2$	$1.2 \pm 0.2$	$50.6 \pm 13.6$
	Acclimated	14	$0.8 \pm 0.2$	$1.2 \pm 0.2$	$47.1 \pm 9.8$
14	Acute	16	$0.9 \pm 0.2$	$1.3 \pm 0.2$	$53.1 \pm 12.9$
	Acclimated	14	$0.6 \pm 0.1$	$1.2 \pm 0.1$	$23.9 \pm 7.1$
17	Acute	14	$0.8 \pm 0.3$	$1.8 \pm 0.3$	$45.5 \pm 14.1$
20	Acute	15	$0.5 \pm 0.1$	$1.2 \pm 0.1$	$40.9 \pm 11.8$
23	Acute	10	$1.4 \pm 0.4$	$1.6 \pm 0.4$	$62.0 \pm 20.9$
26	Acute	13	$0.8 \pm 0.4$	$1.3 \pm 0.3$	$38.6 \pm 13.2$

Data are presented as means  $\pm$  s.e.m.

**Table S3.** Annular chase duration in seconds (s) and total distance swam in body lengths (BL) by cunner during the annular chase swimming speed test (Experiment 1) following acute cooling ( $3^{\circ}\text{C hr}^{-1}$  using  $14^{\circ}\text{C}$ -acclimated animals) or temperature acclimation (5-6 weeks).

Temperature ( $^{\circ}\text{C}$ )	Exposure	Sample size	Annular chase duration (s)	Distance swam (BL)
2	Acute	14	$31.6 \pm 3.6$	$100.8 \pm 15.6$
	Acclimated	14	$49.0 \pm 5.7$	$243.0 \pm 43.0$
5	Acute	15	$76.9 \pm 10.6$	$401.3 \pm 70.6$
	Acclimated	14	$61.6 \pm 6.3$	$375.6 \pm 63.6$
8	Acute	16	$88.9 \pm 12.8$	$555.6 \pm 92.3$
	Acclimated	14	$72.5 \pm 7.1$	$565.4 \pm 82.0$
11	Acute	13	$142.2 \pm 13.8$	$956.1 \pm 109.3$
	Acclimated	14	$74.2 \pm 5.2$	$530.8 \pm 55.6$
14	Acute	15	$153.8 \pm 26.1$	$1105.9 \pm 234.4$
	Acclimated	14	$99.9 \pm 5.8$	$840.7 \pm 64.7$
17	Acute	14	$77.3 \pm 9.5$	$765.0 \pm 116.4$
20	Acute	15	$71.3 \pm 4.5$	$745.1 \pm 52.1$
23	Acute	10	$44.1 \pm 6.3$	$473.0 \pm 81.8$
26	Acute	13	$32.5 \pm 5.1$	$288.4 \pm 52.6$

Data are presented as means  $\pm$  s.e.m.

**Table S4.** The  $Q_{10}$  and percent change values for performance metrics (and standard metabolic rate, a cost of basic maintenance) in cunner following acute temperature change ( $3^{\circ}\text{C hr}^{-1}$  using  $14^{\circ}\text{C}$ -acclimated animals) or temperature acclimation (5-7 weeks) above and below the winter dormancy threshold temperature ( $7\text{-}8^{\circ}\text{C}$  for cunner (Reeve et al., 2022)). Specifically, the  $Q_{10}$  and percent change values were calculated over  $6^{\circ}\text{C}$  intervals above and below the winter dormancy threshold temperature as well as following acute warming of  $14^{\circ}\text{C}$ -acclimated animals to  $20^{\circ}\text{C}$  (i.e.,  $14\text{-}20^{\circ}\text{C}$ ,  $14\text{-}8^{\circ}\text{C}$ : normal activity;  $8\text{-}2^{\circ}\text{C}$ : dormant). Different groups of cunner were used for each acute or acclimated temperature exposure, so each  $Q_{10}$  and percent change value was calculated using the mean performance of each group (hence, the lack of error estimates).  $Q_{10}$  values are not provided for non-rate performance metrics (i.e., exhaustive chase duration, EPOC recovery time, and responsiveness to C-start stimuli).

Performance metric	Exposure	Temperature interval ( $^{\circ}\text{C}$ )	$Q_{10}$	Percent change (%)
$U_{\max}$	Acute	14-20	1.7	37.9
		14-8	1.6	-24.0
		8-2	2.5	-41.8
	Acclimated	14-8	1.4	-19.8
		8-2	1.5	-22.8
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$A_{\max}$	Acute	14-20	1.6	32.2
		14-8	1.3	-12.8
		8-2	1.5	-22.0
	Acclimated	14-8	1.6	-25.4
		8-2	1.4	-19.1
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Responsiveness to C-start stimulus	Acute	14-20	NA	9.9
		14-8	NA	0.0
		8-2	NA	-86.4
	Acclimated	14-8	NA	-16.1
		8-2	NA	-67.3
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$U_{\text{chase}}$	Acute	14-20	2.1	54.3
		14-8	1.1	-7.2
		8-2	3.0	-48.1
	Acclimated	14-8	1.3	-10.6
		8-2	2.3	-39.2
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Exhaustive chase duration	Acute	14-20	NA	-26.6
		14-8	NA	-30.1
		8-2	NA	-58.3
	Acclimated	14-8	NA	-25.5
		8-2	NA	-5.0
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SMR	Acute	14-20	2.4	69.9
		14-8	2.3	-40.1
		8-2	2.6	-44.7
	Acclimated	14-8	1.8	-30.5
		8-2	3.1	-49.1
MMR	Acute	14-20	1.5	29.0
		14-8	1.9	-32.7
		8-2	3.8	-55.4
	Acclimated	14-8	1.5	-20.6
		8-2	2.0	-33.9
Absolute aerobic scope	Acute	14-20	1.4	22.0
		14-8	1.9	-31.5
		8-2	4.0	-57.0
	Acclimated	14-8	1.4	-18.8
		8-2	1.9	-31.5
Total EPOC	Acute	14-20	0.9	-3.6
		14-8	1.5	-22.8
		8-2	4.9	-61.6
	Acclimated	14-8	2.9	-48.6
		8-2	3.0	-47.6
EPOC recovery time	Acute	14-20	NA	-1.5
		14-8	NA	54.2
		8-2	NA	-33.2
	Acclimated	14-8	NA	31.1
		8-2	NA	-47.4

$U_{\max}$ , maximum burst velocity;  $A_{\max}$ , maximum burst acceleration;  $U_{\text{chase}}$ , annular chase swim speed; SMR, standard metabolic rate; MMR, maximum metabolic rate; EPOC, excess post-exercise oxygen consumption. NA, not applicable.