

SUPPLEMENTARY DIGITAL MATERIAL 1

Supplementary Table I.—The did-not-finish (DNF) rate (per 1000 starters: 95% CI) during the race per risk factor from the pre-screening medical questionnaire and race day data (N.=1032).

Risk factor variables		Did-not-finish			Univariate unadjusted		Univariate adjusted for age and sex	
		Rate (Per 1000 starters)	95% CI		Incidence rate ratio (95% CI)	P value	Incidence rate ratio (95% CI)	P value
Demographic variables								
Sex	Males	39.5	36.5	42.8	0.7 (0.6-0.8)	<0.0001		
	Females	57.2	51.7	63.3	1.4 (1.3-1.6)			
Age (years)	≤30	37.2	30.4	45.6		<0.0001		
	31-≤40	37.6	33.6	42.0	1.0 (0.8-1.3)			
	41-≤50	41.8	37.5	46.5	1.1 (0.9-1.4)			
	>50	69.3	61.5	78.2	1.9 (1.5-2.4)			
Training and racing variables								
Years of recreational running (years)*	4	46.5	42.8	50.6	5-unit increase: 0.9 (0.9-1.0)	0.0804	5-unit increase: 0.9 (0.9-0.9)	<0.0001
	8.5	45.1	42.3	48.2				
	15	43.2	40.2	46.4				
Previous 56km Race Experience (medals)	0-1	52.2	48.3	56.5	1.4 (1.2-1.6)	<0.0001	1.9 (1.7-2.3)	<0.0001
	2-4	33.5	29.0	38.6	0.9 (0.7-1.1)		1.1 (0.9-1.4)	
	≥5	37.2	32.6	42.6				

Times Training or Racing per week*	3	48.1	44.2	52.4	1 unit increase: 0.9 (0.9-1.0)	0.0069	1 unit increase: 0.9 (0.9-1.0)	0.0002
	4	45.1	42.3	48.1				
	5	42.3	39.2	45.6				
Average weekly training/running distance in the last 12 months (km)*	20	50.5	45.3	56.4	5-unit increase: 1.0 (1.0-1.0)	0.0070	5-unit increase: 1.0 (1.0-1.0)	0.0016
	35	47.5	44.0	51.4				
	50	44.7	42.0	47.6				
Race Speed vs Training Speed (RS/TS)*	0.8	50.9	47.7	54.5	0.2-unit increase 0.6 (0.5-0.7)	<0.0001	0.2-unit increase: 0.6 (0.5-0.7)	<0.0001
	1.0	30.9	27.5	34.8				
	1.2	18.8	15.0	23.6				
Pre-race medical screening variables								
Chronic Disease Composite Score*	0	42.7	39.8	45.7	2-unit increase: 1.3 (1.1-1.5)	0.0078	2-unit increase: 1.1 (1.0-1.4)	0.1312
	2	54.7	47.3	63.4				
	4	70.2	52.0	94.9				
History of Cramping	Yes	49.6	43.9	56.1	1.1 (1.0-1.3)	0.0599	1.2 (1.0-1.4)	0.0360
	No	43.2	40.2	46.3				
Allergies	Yes	35.2	27.9	44.4	0.8 (0.6-1.0)	0.0224	0.8 (0.6-1.0)	0.0100
	No	45.4	42.6	48.5				
History of Collapse	Yes	36.4	21.2	62.2	0.8 (0.5-1.4)	0.4073	0.7 (0.4-1.3)	0.2685
	No	44.7	42.0	47.6				
Recent (last 12 months) running injury	Yes	39.6	33.4	47.1	0.9 (0.7-1.0)	0.1343	0.9 (0.7-1.0)	0.0790
	No	45.3	42.4	48.4				
Environmental variable								

aWBGT	12.1	44.1	38.6	50.4		<0.0001		<0.0001
	13.4	52.5	47.7	57.8	1.2 (1.0-1.4)		1.2 (1.0-1.4)	
	15.1	52.7	47.5	58.4	1.2 (1.0-1.4)		1.2 (1.0-1.4)	
	18.4	27.0	23.4	31.3	0.6 (0.5-0.7)		0.6 (0.5-0.7)	

P value is reported for the overall factor

Race Speed (km/h) vs. Training Speed (km/h) Ratio = race speed/training speed; a value >1 is a faster average race speed compared to average training speed; and a value <1 is a slower average race speed compared to average training speed. Chronic Disease Composite Score: the composite number of chronic diseases for an individual.

#Incidence Ratio is 0-1 vs. ≥ 5 , 2-4 vs. ≥ 5 ; *a continuous variable.

aWBGT: average Wet-Bulb Globe Temperature, 12.1 was the reference value/year (2012).