

Table S1. Average run-time for one timestep $t_{\text{run},\Delta t}$ of agent-based simulations for different breathing conditions and migration modes. Mean run-times and their corresponding standard deviation are averaged over 10^5 runs in the static case and averaged over 10^3 runs under resting and heavy exercise breathing conditions.

$t_{\text{run},\Delta t}$	breathing condition		
	static case	resting condition	heavy exercise
Δt	0.1 min	0.001 min	0.001 min
persistent random walk	(0.217 ± 0.075) ms	(0.210 ± 0.074) ms	(0.209 ± 0.069) ms
biased persistent random walk	(0.238 ± 0.109) ms	(0.224 ± 0.099) ms	(0.222 ± 0.098) ms