

id	$P_n$ [day <sup>-1</sup> ] (95% CI)	$p_{s1}$ [day <sup>-1</sup> ] 95% CI	$p_{s2}$ [day <sup>-1</sup> ] (95% CI)	$d_{s1}$ [day <sup>-1</sup> ] 95% CI	$d_{s2}$ [day <sup>-1</sup> ] 95% CI	Self-renewal [d] 95% CI
DW01	0.0005 (0.0003,0.0020)	0.005 (0,0.2)	0.021 (0.0015,0.0661)	0.087 (0.003,0.20)	0.0214 (0.0016,0.0666)	7300 (1800,12500)
DW04	0.0004 (0.0003,0.0008)	0 (0,0.2)	0.003 (0.0001,0.0078)	0.013 (0.008,0.35)	0.0033 (0.0005,0.0085)	2400 (1200,5300)
DW10	0.0006 (0.0005,0.0011)	0.025 (0,0.1055)	0.002 (0,0.0083)	0.028 (0.02,0.15)	0.0022 (0.0003,0.0094)	4800 (1400,8400)
DW11	0.0003 (0.0001,0.0006)	0.029 (0.0032,0.183)	0 (0,0.0081)	0.031 (0.02,0.31)	0.0002 (0.0001,0.0086)	4400 (1700,9500)
MEDIAN	<b>0.0005</b> <b>(0.0003,0.001)</b>	<b>0.015</b> <b>(0,0.19)</b>	<b>0.002</b> <b>(0.0001,0.008)</b>	<b>0.029</b> <b>(0.01,0.26)</b>	<b>0.0027</b> <b>(0.0004,0.009)</b>	<b>4600</b> <b>(1500,8900)</b>

**S2 Table. Parameter estimates for CD8<sup>+</sup> T<sub>SCM</sub> cells from the explicit heterogeneity model.**

Parameter estimates with 95% CI (in parentheses) obtained by fitting the explicit heterogeneity model to the labelling, telomere length and YFV datasets for CD8<sup>+</sup> T cells simultaneously. The table shows the fitted parameters  $p_n$  (the proliferation rate of the naïve population),  $p_{s1}$  and  $p_{s2}$  (the proliferation rates of the two T<sub>SCM</sub> subpopulations) as well as the derived parameters  $d_{s1}$  and  $d_{s2}$  (the disappearance rates of the two T<sub>SCM</sub> subpopulations) and the degree of self-renewal of the long-lived subpopulation T<sub>SCM2</sub>.  $d_{s1}$  and  $d_{s2}$  were calculated using the steady state constraints  $(1-f)2^k\Delta T_N + p_{s1}T_{SCM1} = d_{s1}T_{SCM1}$  and  $f2^k\Delta T_N + p_{s2}T_{SCM2} = d_{s2}T_{SCM2}$  and the degree of self-renewal of the T<sub>SCM2</sub> subpopulation was calculated as  $1/(d_{s2}-p_{s2})$ . This table is a continuation of the table of parameters in the main text (Table 1).