Theorem 3 *Let* $(A_0, A_1, \ldots, A_m)$ *be a fitness partition of a finite state space* $\mathcal{X}$. *Let* $T := \min\{2t\lambda \mid |P_t \cap A_m| > 0\}$ *be the first point in time that the elements of* A_m *appear in* P_t *of the 2-tournament EA with noisy function* $f^n(x)$ *and mutation rate* χ/n. *If there exist* $h_0, h_1, \ldots, h_{m-1}$ *and* $\theta \in (0, 1/2]$, *and where* $\chi \in (0, \ln(1 + 2\theta\zeta))$ *for an arbitrary constant* $\zeta \in (0, 1)$, *such that, for an arbitrary constant* $\xi \in (0, 1/16)$,

(C1) *for all* $j \in [0..m-1]$, $\Pr(y \in A_{\geq j+1} \mid z \in A_j) \geq h_j$,
(C2) *for all* $j \in [0..m-2]$, *and all search points* $x_1 \in A_{\geq j+1}$ *and* $x_2 \in A_{\leq j}$, *it follows* $\Pr(f^n(x_1) > f^n(x_2)) + \frac{1}{2}\Pr(f^n(x_1) = f^n(x_2)) \geq \frac{1}{2} + \theta$,
(C3) *and the population size* $\lambda \in \mathbb{N}$ *satisfies*

$$\lambda > \frac{4\,(1+o(1))}{\theta^2\xi(1-\zeta)^4} \ln\left(\frac{128(m+1)}{\theta^2\xi(1-\zeta)^4 \min\{h_j\}}\right),$$

then $E[T] < \frac{16(1+o(1))}{\theta^2\xi(1-\zeta)^2} \sum_{j=0}^{m-1} \left(\lambda \ln\left(\frac{6}{\xi(1-\zeta)^2 h_j}\right) + \frac{1}{\xi(1-\zeta)^2 h_j}\right)$.