Correction

2014. M. A. Geeves and S. S. Lehrer. **Cross-Talk, Cross-Bridges, and Calcium Activation of Cardiac Contraction**. *Biophys. J.* 107:543–545.

The first paragraph of the third column on page 544 should read as follows:

The work of Fusi et al. (8) used skeletal muscle TnC with a bifunctional fluorescence probe attached rigidly to helices either in the N-terminal regulatory lobe of TnC (helix C) or near the C-terminal structural lobe (helix E; see Figure 1). Orientation of the probes, with respect to the filament axis, is then interpreted to report calcium binding to the N-lobe or reorientation of the TnTm complex (probe on C-lobe) as TnI dissociates from actin and Tm moves away from the blocked position. Fusi et al (8) used a rapid release of calcium and rapid length steps to explore the effects of cross-bridges, calcium, and force on the orientation of the two signals. Upon a rapid increase of calcium concentration, both lobes reorient with a half-time of <1 ms, consistent with the expected rate constant of calcium binding. In the absence of cross-bridges, the N-lobe completes 75%–80% of the total change observed with this fast rate constant, whereas the C-lobe completes 60%–67% of the change. Most of the rest of the reorientation occurs at 100–150 s^{-1}, consistent with TnI-inhibitory peptide detachment and Tm movement. When force-generating cross-bridges are also present, that same two phases occur for the probe on the N-lobe. However, in the case of the C-lobe, a third phase is additionally seen at 13 s^{-1}, similar to the observed rate constant of tension rise. Fusi et al. (8) point out that the two fast phases are complete before any force is developed or before the formation of any significant population of strong cross-bridges. This leaves no role for strong cross-bridges in the early phases of activation. However, the distribution of amplitudes is altered for the C-lobe, with 40%–50% in phase 1, 30%–38% in phase 2, and 10%–15% in phase 3 when force is developed. The question here: What affects the amplitudes of the fast phases? Is it the weak cross-bridges? It will be interesting to see whether this conclusion holds if submaximal calcium is released into the fiber.

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