

# Johns Hopkins University

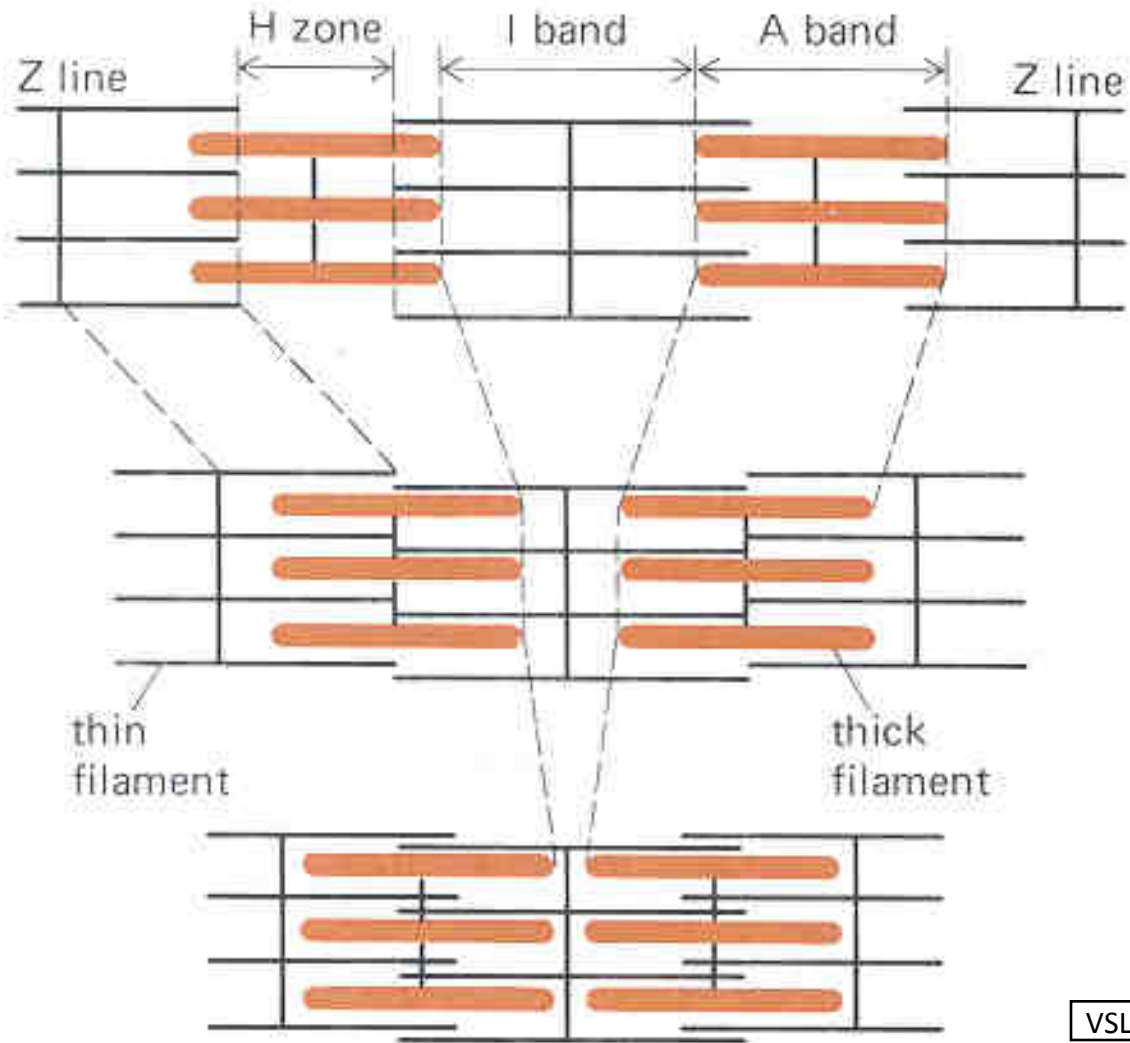
## Engineering for Professionals

### EN 585.405

Physiology for Applied Biomedical Engineering

- Module 3
  - Skeletal Muscle
- Video 3
  - Some Observations

**Figure 10-6. Changes in filament alignment and banding pattern in a myofibril during shortening.**



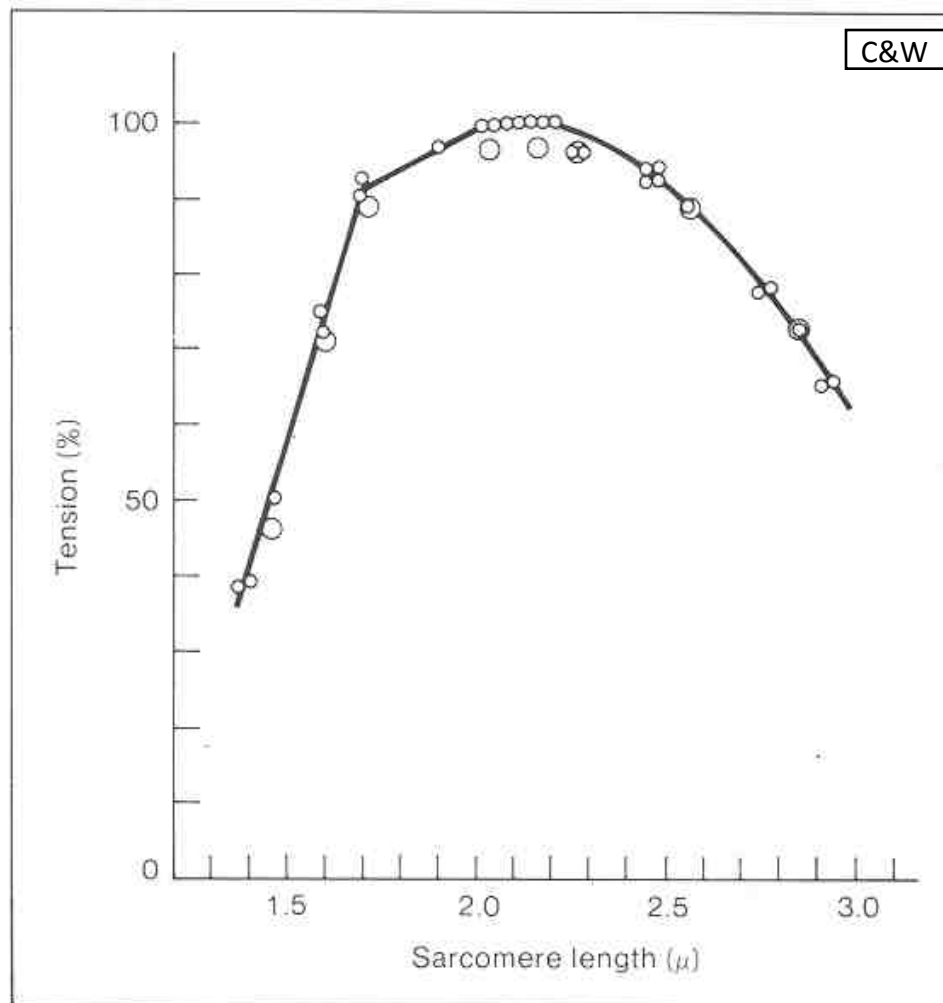


Fig. 2-8(b). Tension length curve recorded directly from an isolated single muscle fiber (semitendinosus of frog, 5-6°C). Note how similar this curve is to the curve recorded with the more sophisticated feedback apparatus of Fig. 2-6. This curve demonstrates an additional conclusion—the final tension reached at a given length does not depend on the initial length. The large symbols represent contractions where the fiber started at a long sarcomere length ( $2.45\mu$ ). [From K. Edman (1966), *J. Physiol.*, 183, 407-17.]

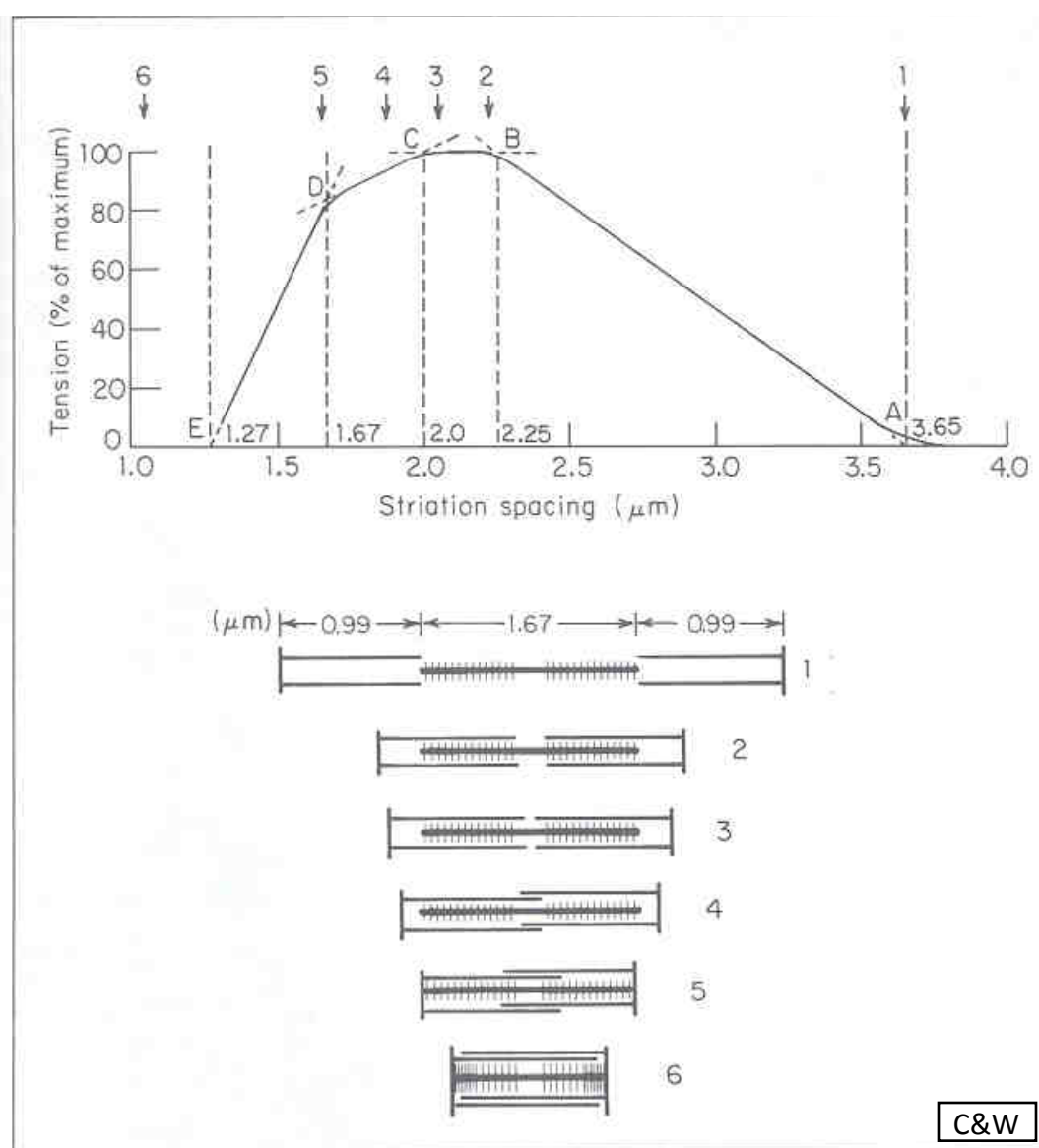
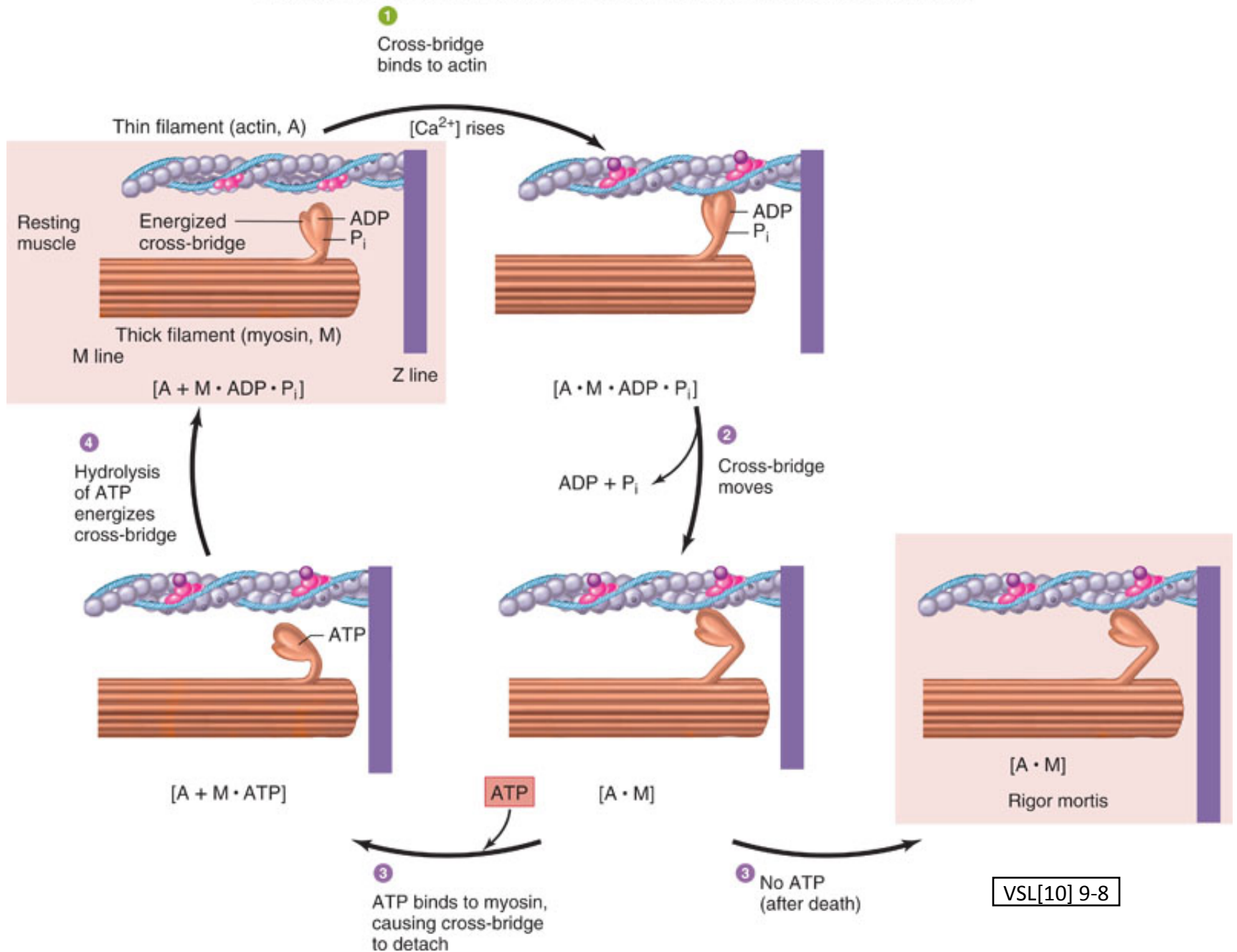


Fig. 3.7. Developed tension vs. length for a single fiber of frog semitendinosus muscle. The length of the segment was fixed for each measurement by the spot-follower servo. The sliding-filament diagrams in the lower part of the figure show the appearance of the sarcomere striation pattern at the lengths corresponding to the numbers in the force-length diagram. Modified from Gordon, Huxley, and Julian (1966b).



**END**

**Video 3, Module 3**