Common Drive

The phenomenon known as **"Common Drive"** is at least one example of why it might be impossible to test "A" muscle or "A" division of fibers of a muscle. Even when applying a mechanically based approach to positional/muscle testing that creates a resistance challenge where the mechanical variables (plane relationship, moment arm length, length/tension relationship) are controlled in a way to emphasize the demand response from a muscle or division of muscle, positional testing is likely a more accurate descriptor. As such, any departure away from precisely controlling the mechanical variables to create a positional emphasis (for instance, creating a position of displacement of the joint where the length of the sarcomeres are so short that their ability to generate force is compromised significantly), likely distributes the demand response to resistance fighting muscles or divisions of muscle that may have a lesser relationship to the plane of resistance or a shorter moment arm but are better able to generate force.

For example, there is a place/window along the L/T curve where the Rectus Femoris is capable of generating optimal tension. A length change either to the greater or shorter decreases tension producing capabilities. In creating the extreme of shortening of the Rectus Femoris through a position of terminal knee extension and full hip flexion (and certainly anything beyond active range of motion) the ability of the Rectus Femoris to generate tension (force) is diminished (this can also been seen as compensated for on EMG by increased activity either due to increased firing rate or an increase in recruitment). Combine this with the likely influence of reciprocal inhibition due to antagonistic excitation from spindle afferent volleying, and it is more likely that the Rectus Femoris is now de-emphasized. Thankfully due to mechanisms like common drive a minimum amount of positional torque (force) might still be possible.

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July 2015