HYPERTROPHY and CONCENTRIC-ECCENTRIC CONTRACTIONS

CONCENTRIC-ONLY	ECCENTRIC-ONLY
Active only: 1) Acto-myosin cross bridging 2) More ATP used 3) More energy dependent	Both active & passive: 1) Acto-myosin cross bridging 2) Titin stretched 3) Less ATP used 4) Less energy dependent 5) 25 to 30% stronger than concentric
Both methods increase fiber volume, but different effect on fiber length & diameter,	
* INCREASED DIAMETER * INCREASED SIZE IN PROXIMAL REGION * MORE METABOLIC ACCUMULATION	* INCREASED LENGTH * INCREASED SIZE IN DISTAL REGION * LESS METABOLIC ACCUMULATION * PREFERENTIAL INCREASE IN TYPE II FIBERS DUE TO PASSIVE TITIN, & TYPE II HAVE HIGHER TITIN-BASED STIFFNESS
Decreased shortening velocity as fatigue increases = mechanical load increases due to increased fiber recruitment	
	Eccentric deformation: 1) Endomysium of fiber 2) Internal cytoskeleton of fiber 3) Titin
Grow in volume due to sarcomere DIAMETER = better for body builders? (sarcomere inward bulging)	
	Grow in volume due to sarcomere LENGTH Contribute to visual size?