激痛點介紹

Trigger Point Introduction

俞學彣

2026/03/15

關於我

- 高雄翰醫堂博愛中醫診所

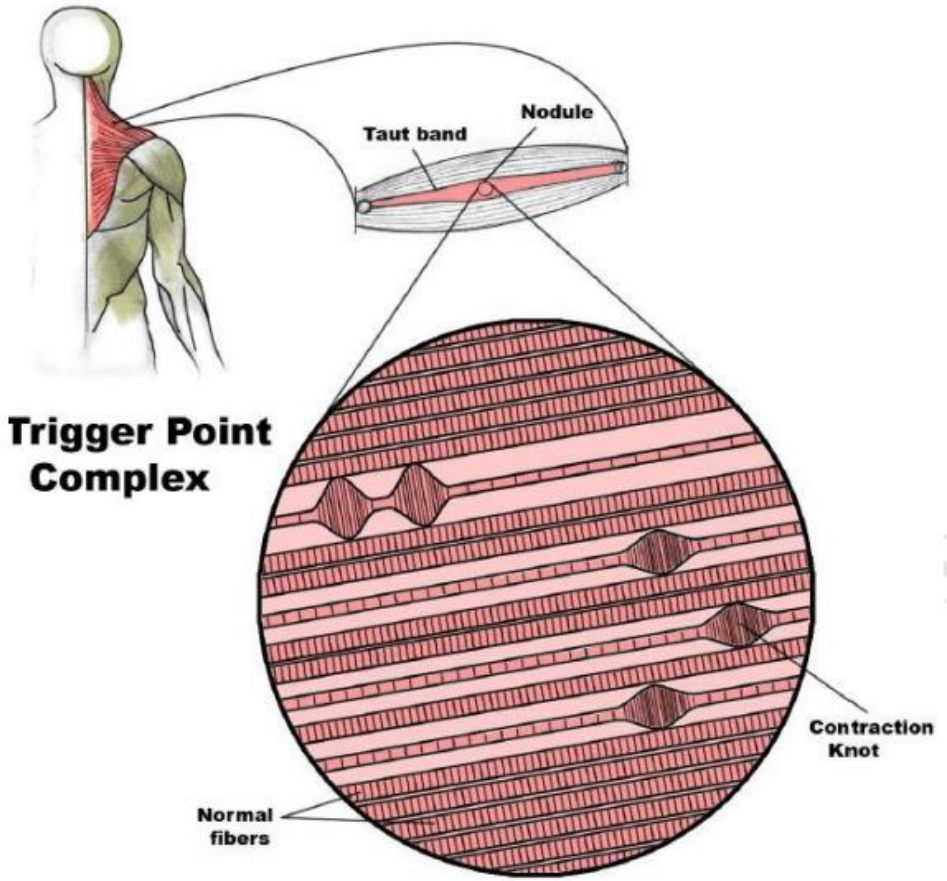
- 長庚大學中醫系雙主修 畢業
- 台北林口長庚 中醫骨傷科 主治醫師
- 台灣顏面針灸醫學會 副秘書長
- 台灣長照醫學專科醫師

- 急性/慢性疼痛、骨折初期及術後、運動傷害
- 超音波結合小針刀/乾針/浮針
- 美顏針

目錄

什麼是Myofascial Trigger Point (MTrP)?

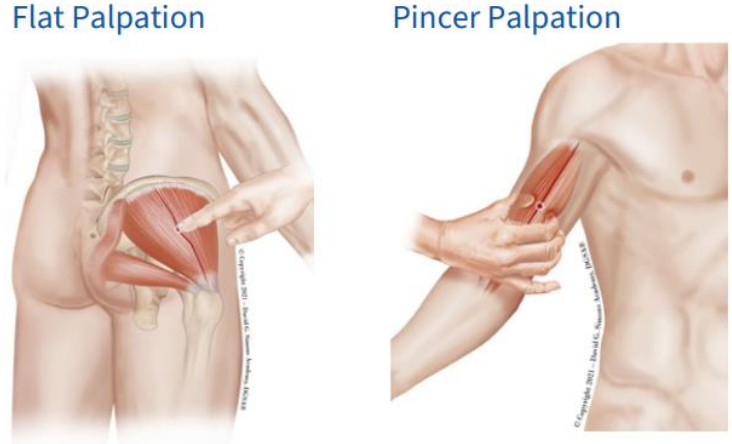
- Microscopic small area in skeletal muscle within the taut band.
- This area is hypersensitive to mechanical stimulation (pressure or stretch).
- Symptoms from MTrP can be local and/or referred pain, paresthesia as well as autonomic symptoms.
- MTrPs are localized hypoxic areas within the skeletal muscle.

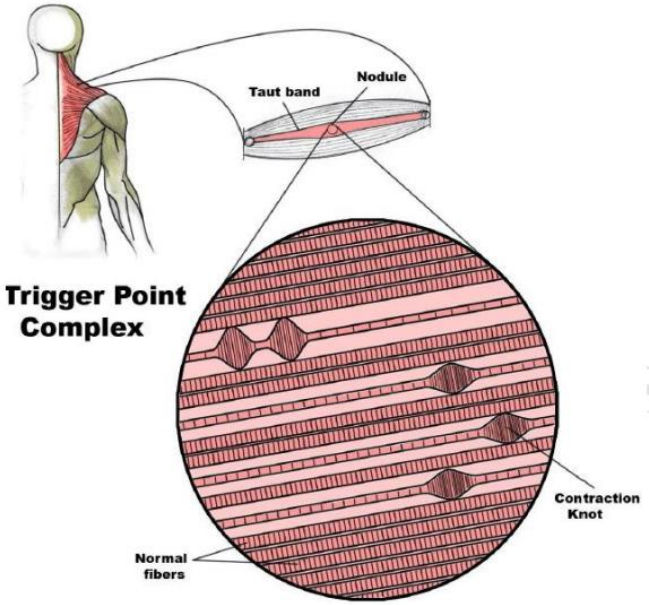


什麼是Myofascial Trigger Point (MTrP)?

常見激痛點特徵:

- ✓ 有可經垂直肌纖維的平壓觸診或鉗捏觸診摸到的肌肉緊繃帶(Taut band)
- ✓ 肌肉緊繃帶內有過度敏感點
- ✓ 適當刺激下會產生局部抽搐反應(local twitch response,LTR)
- ✓ 可能引起動作或自主神經反應現象
- ✓ 可能會防止肌肉被完全拉長(造成活動範圍受限)
- ✓ 可能會造成抑制性肌肉無力





MTrP的分類

活性激痛點
Active MTrP

- ✓ 休息時也會有local or referred pain
- ✓ 症狀的再現性
- ✓ 在刺激檢查時，患者會感受到如平常的疼痛或不適

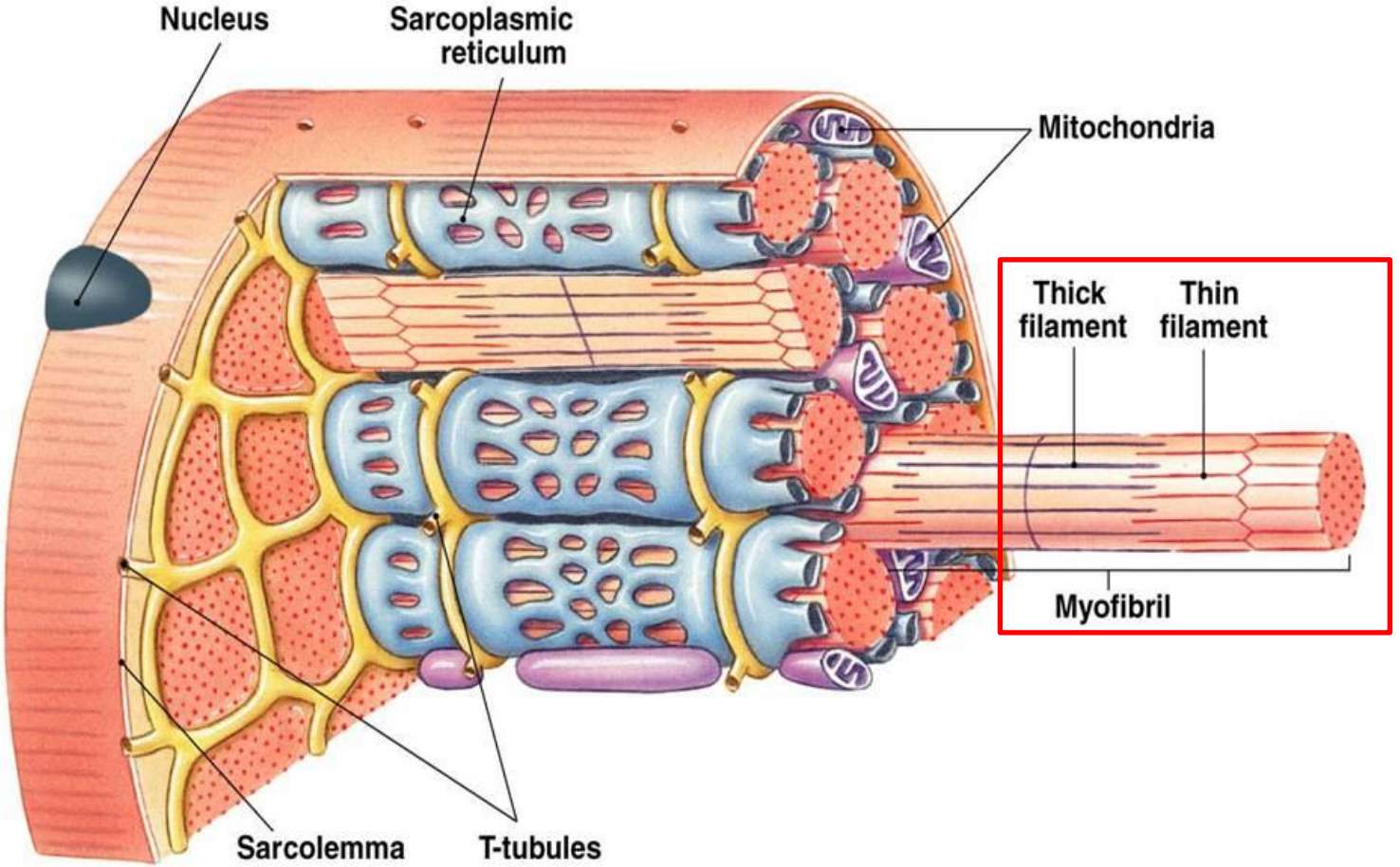
隱性激痛點
Latent MTrP

- ✓ 基本上沒有症狀
- ✓ 經強力刺激(壓力/針刺)會產生平常沒有的症狀，可能與活性激痛點相似，不一定能分辨

MTrP的分類

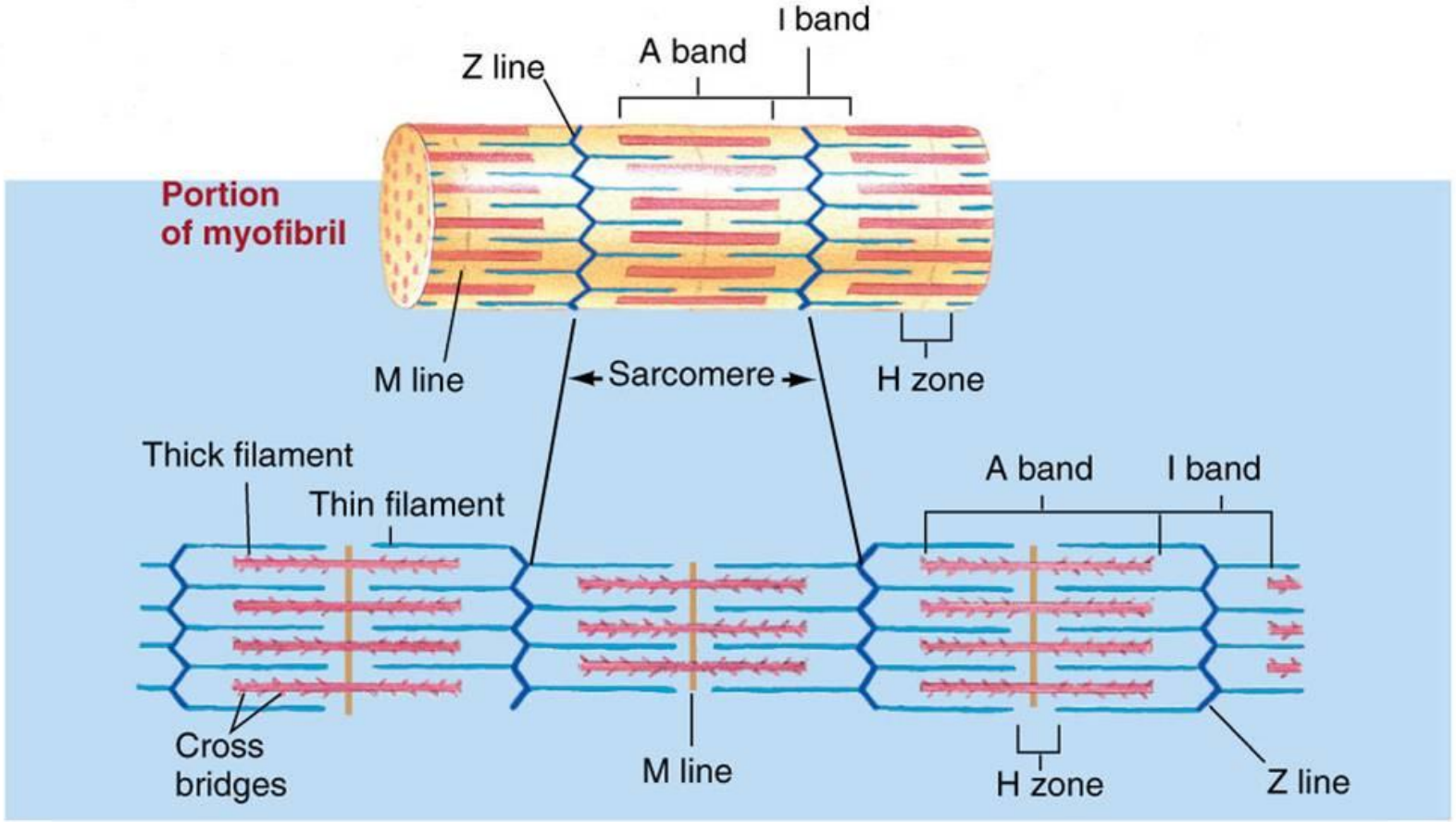
- Primary Trigger Point
  因急性或慢性過度使用肌肉而產生的MTrP
- Secondary Trigger Point
  在產生 Primary MTrP後，因代償或拮抗作用而產生的MTrP
- Satellite Trigger Point
  在產生MTrP後，被影響的referred pain區域新產生的MTrP
- Associated Trigger Point
  Secondary and satellite MTrP.

組織學



https://www.austincc.edu/apreview/PhysText/Muscle.html

組織學



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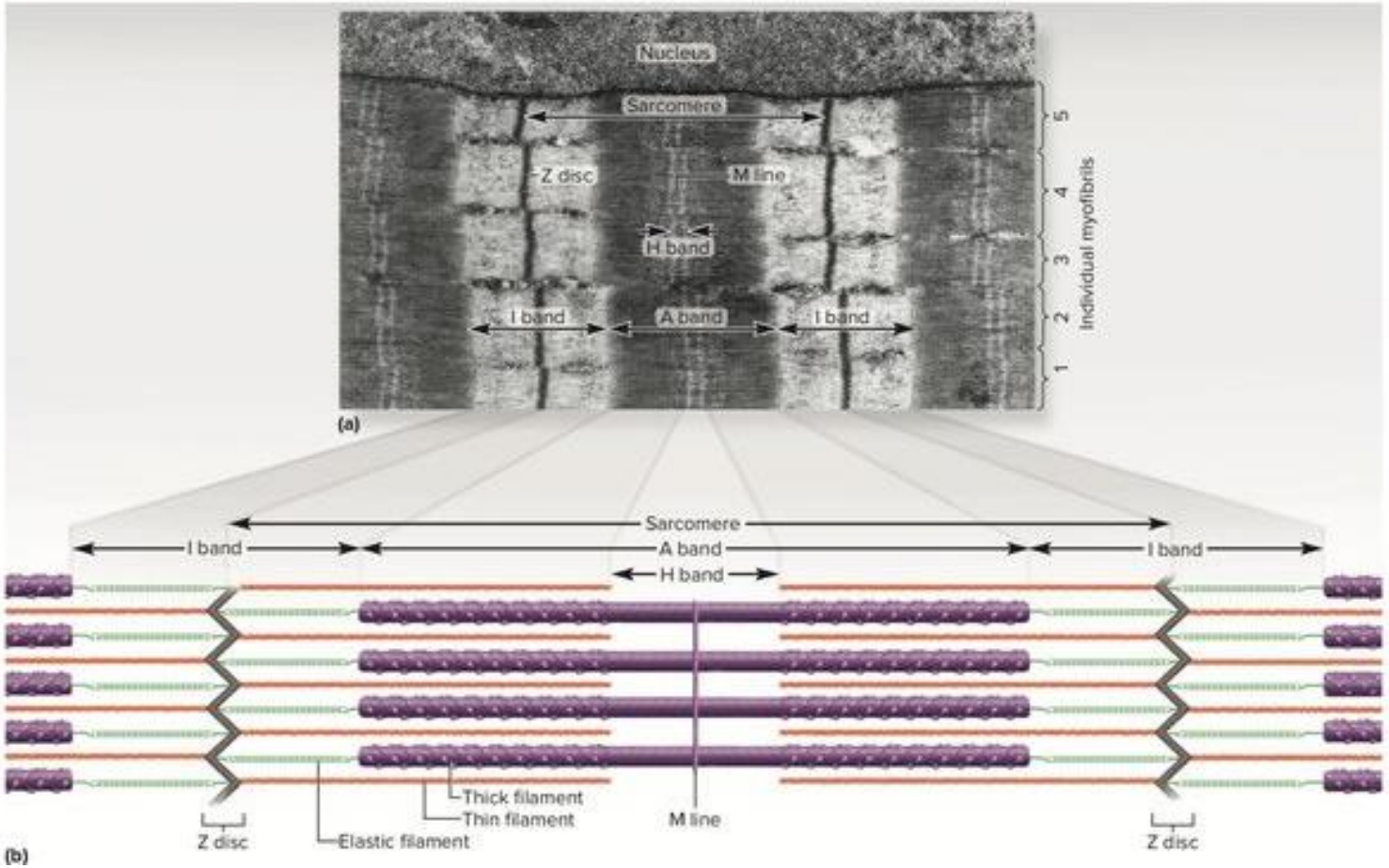

figure from K.S. Saladin, Anatomy & Physiology—The Unity of Form and Function, 8th ed., McGraw-Hill, 2018.

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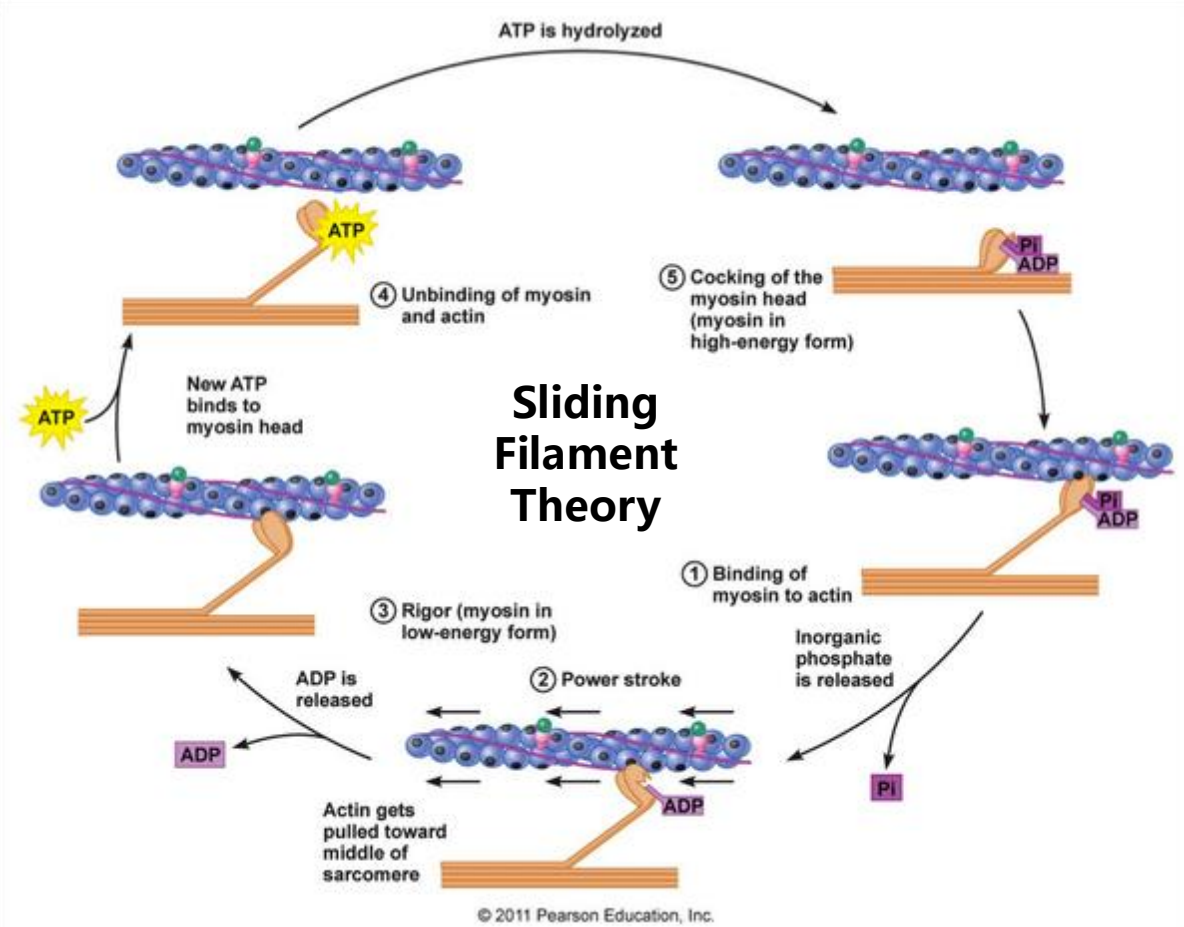

https://www.quora.com/How-do-actin-and-myosin-work-during-muscle-movement

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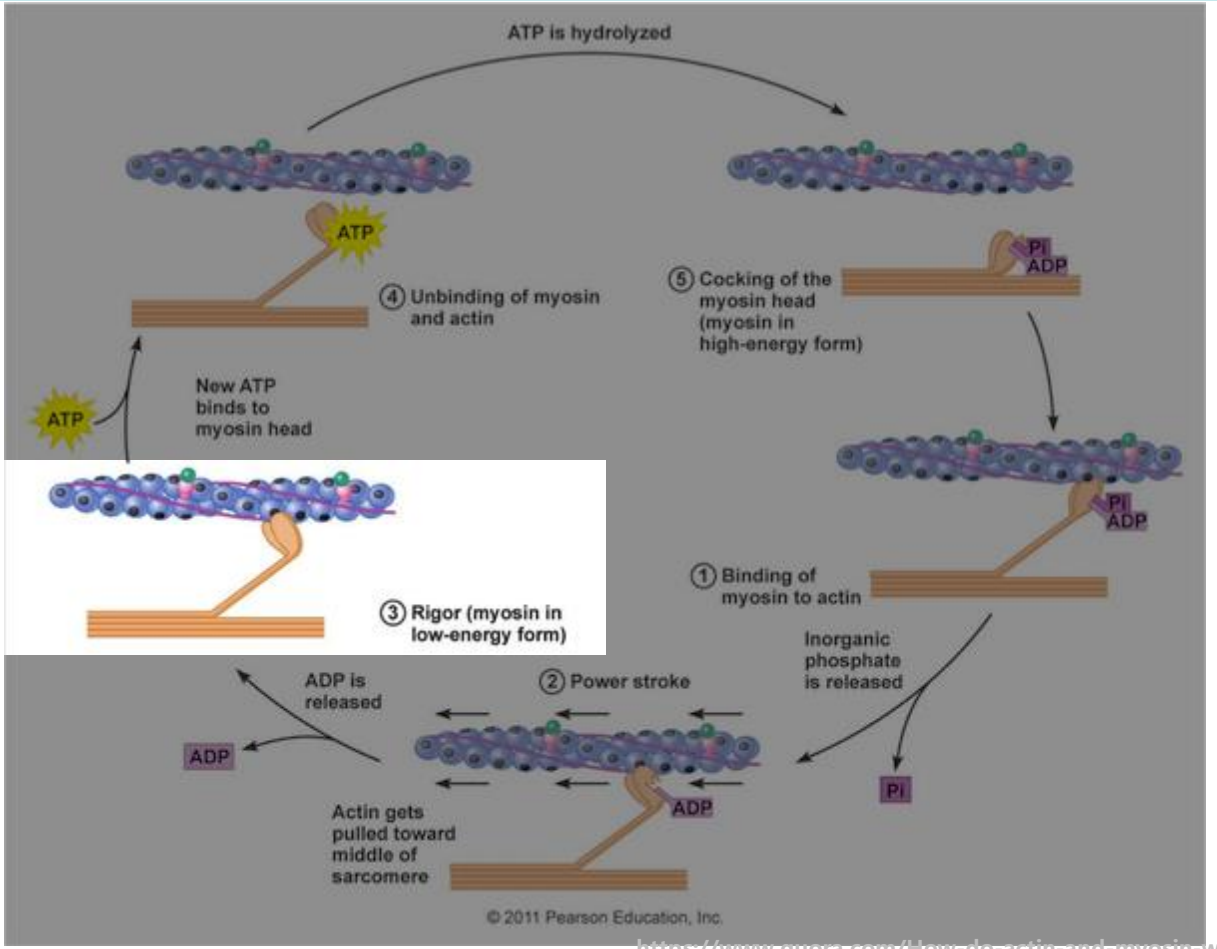

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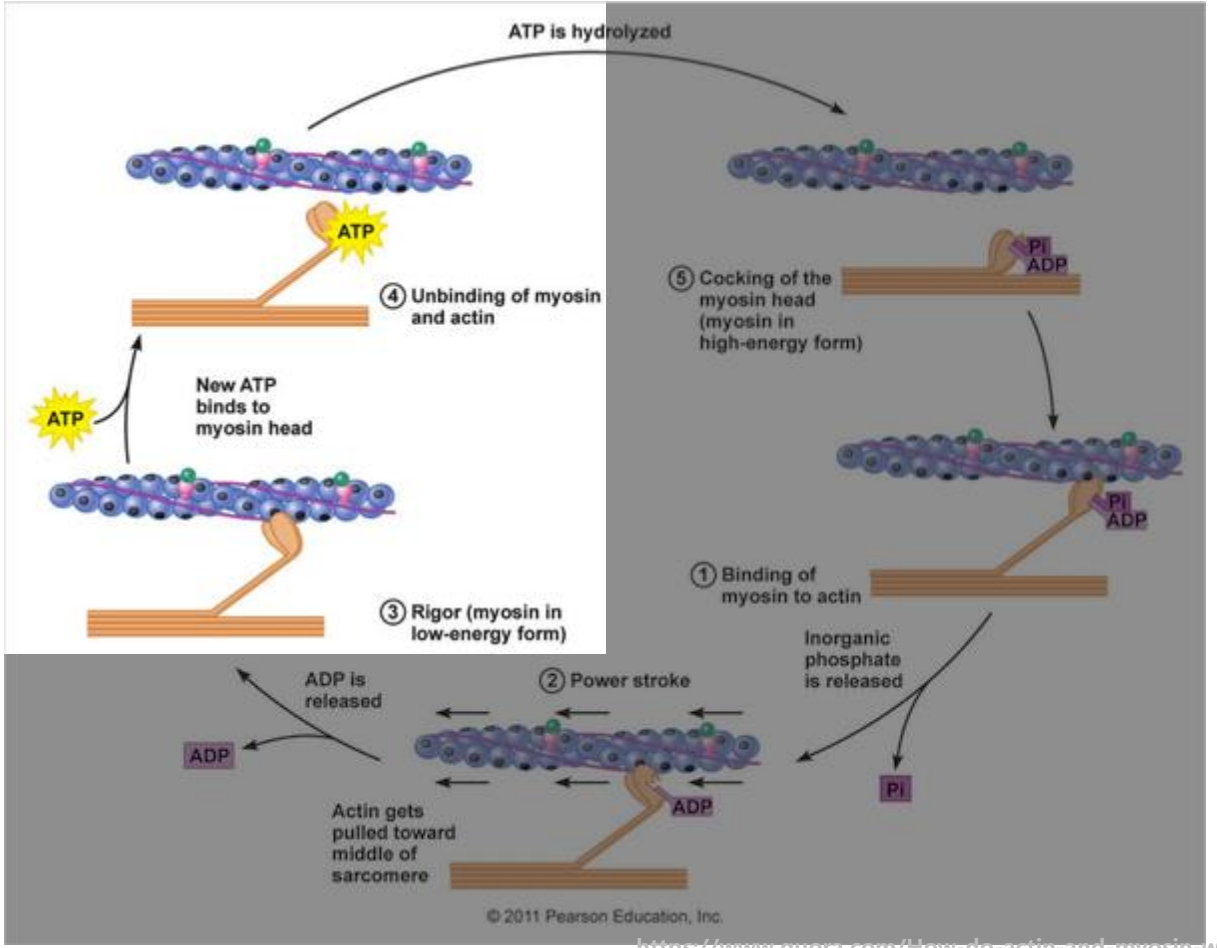

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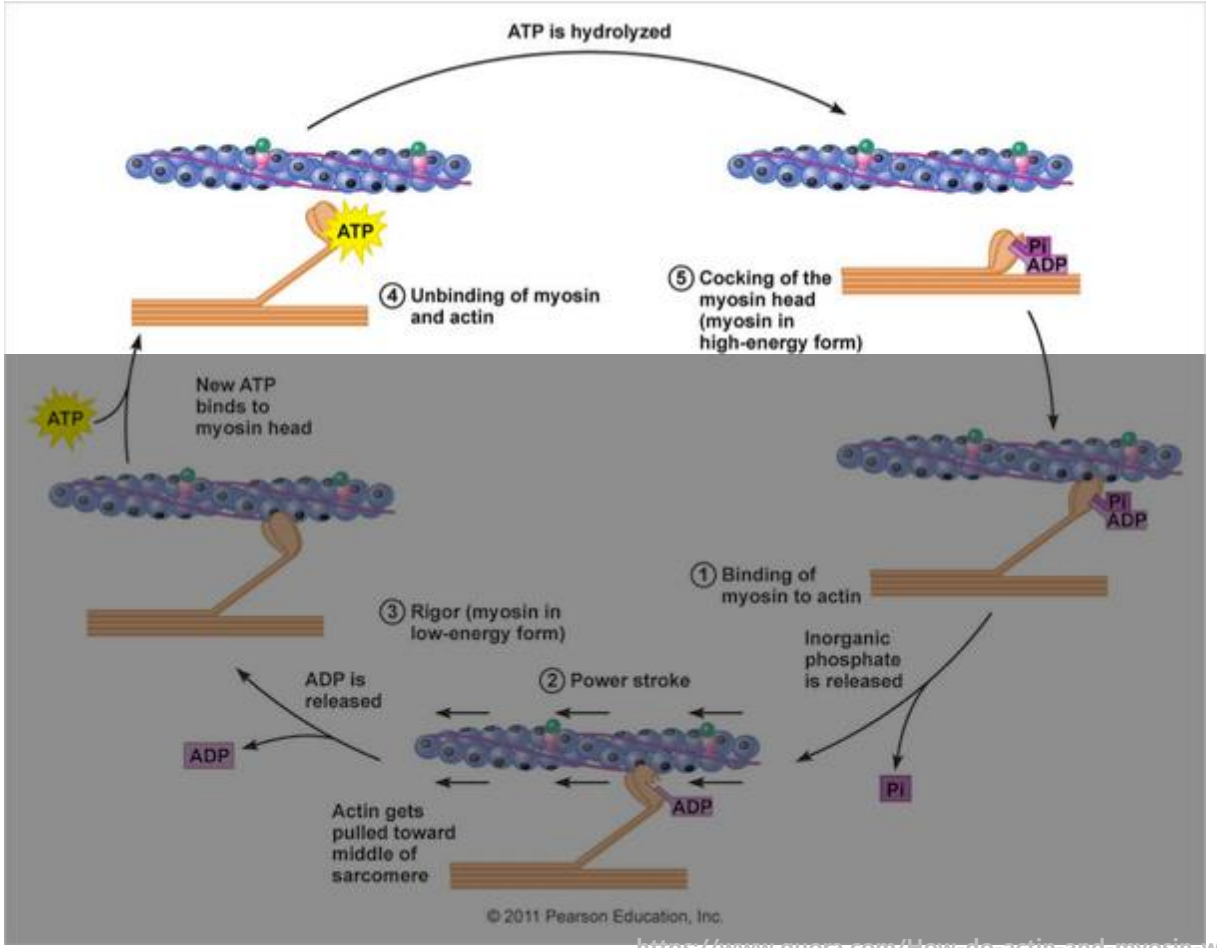

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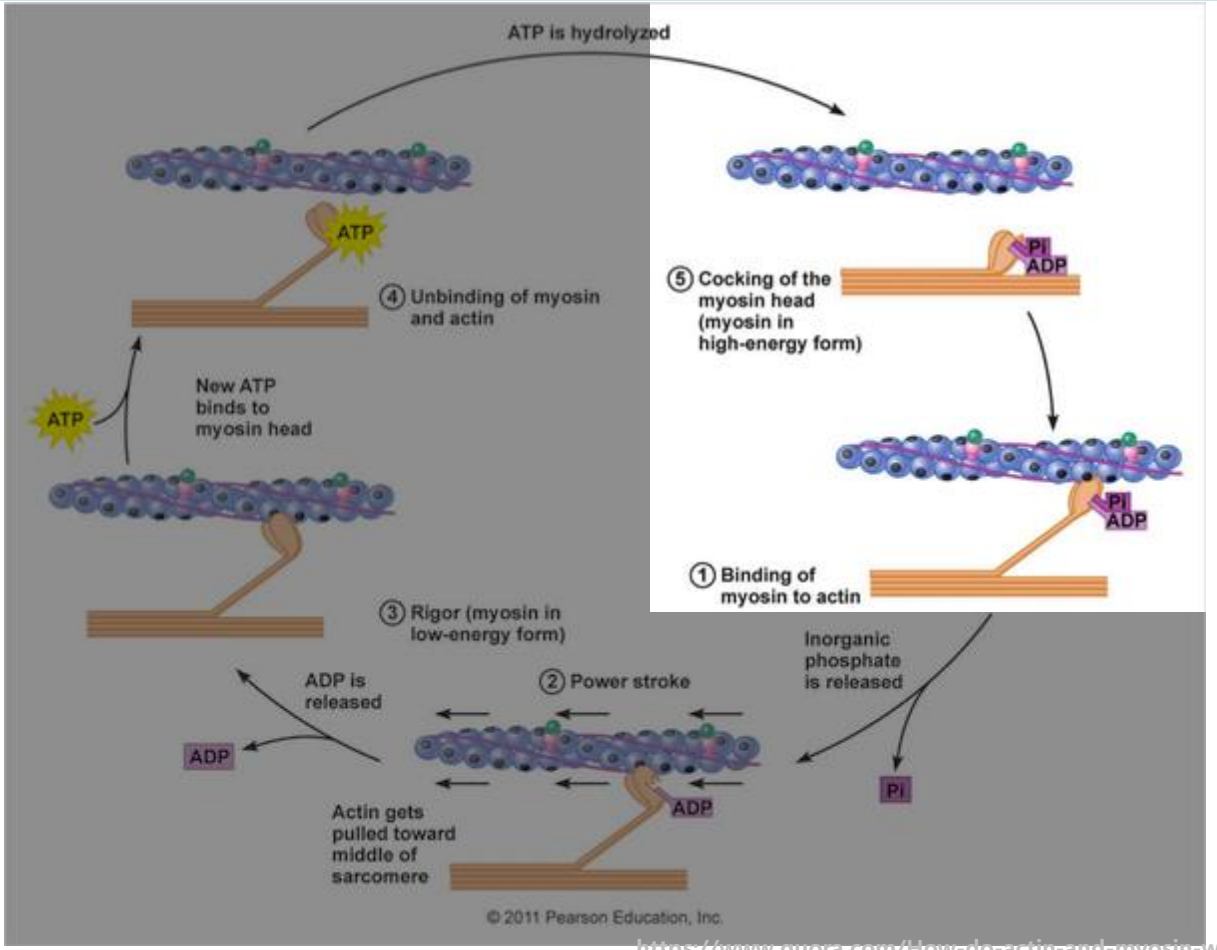

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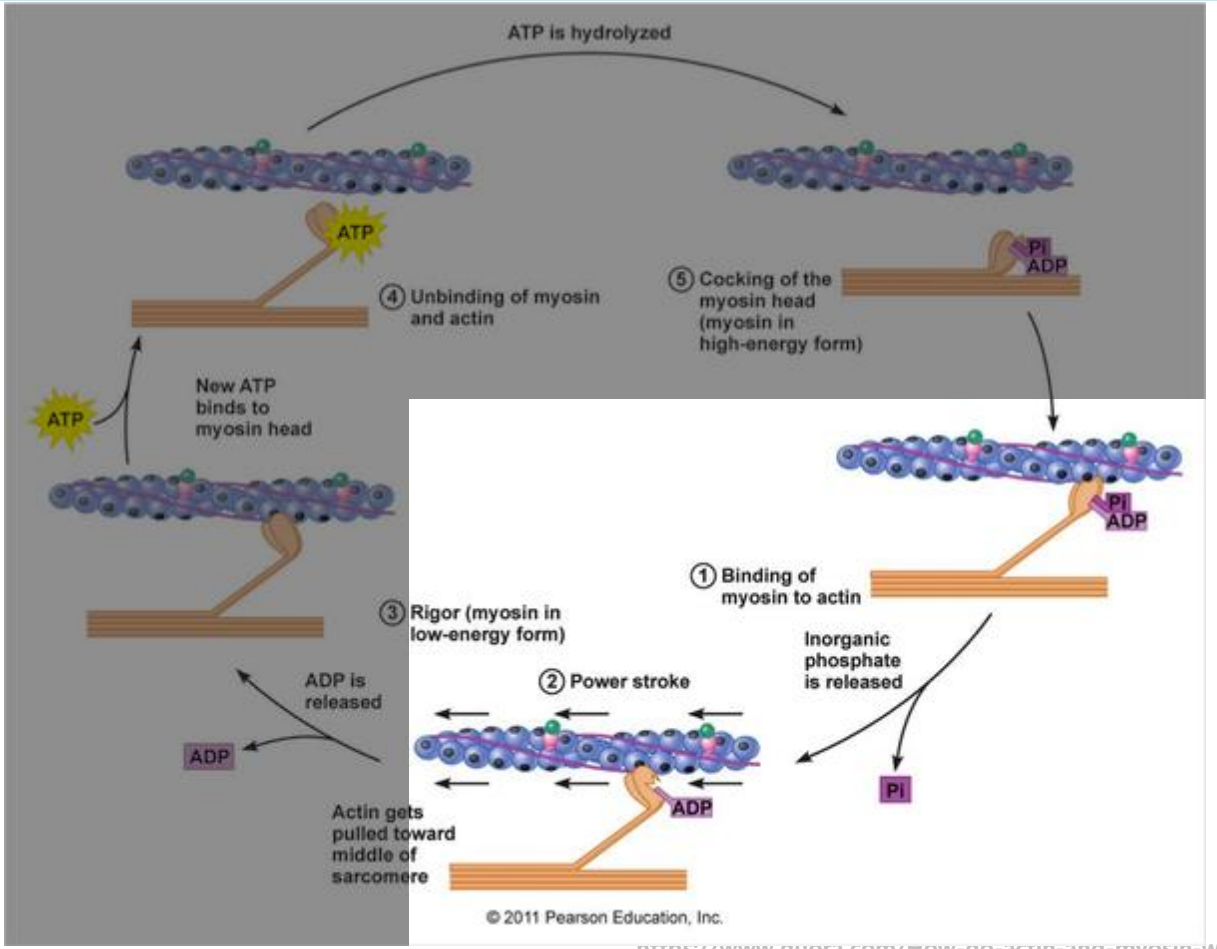

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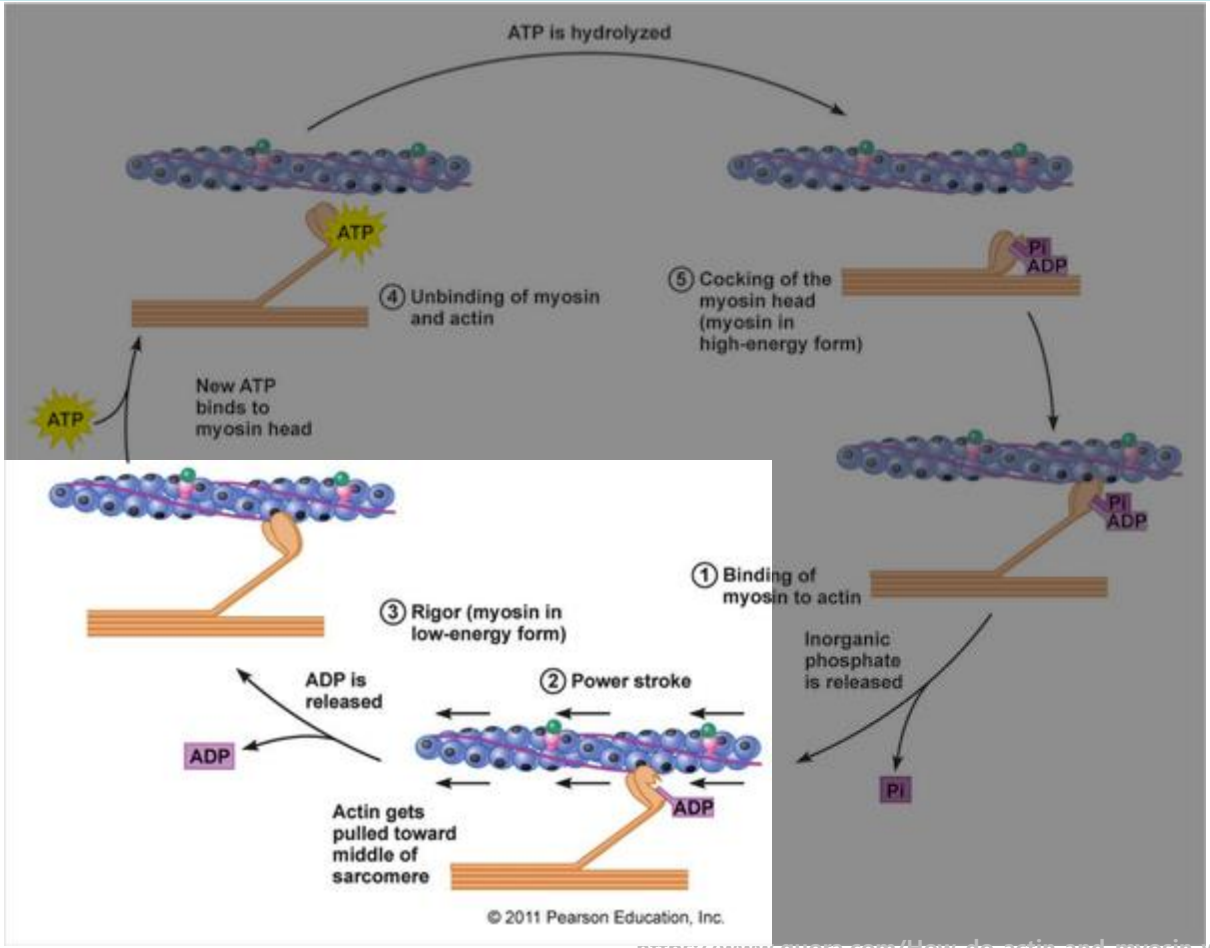

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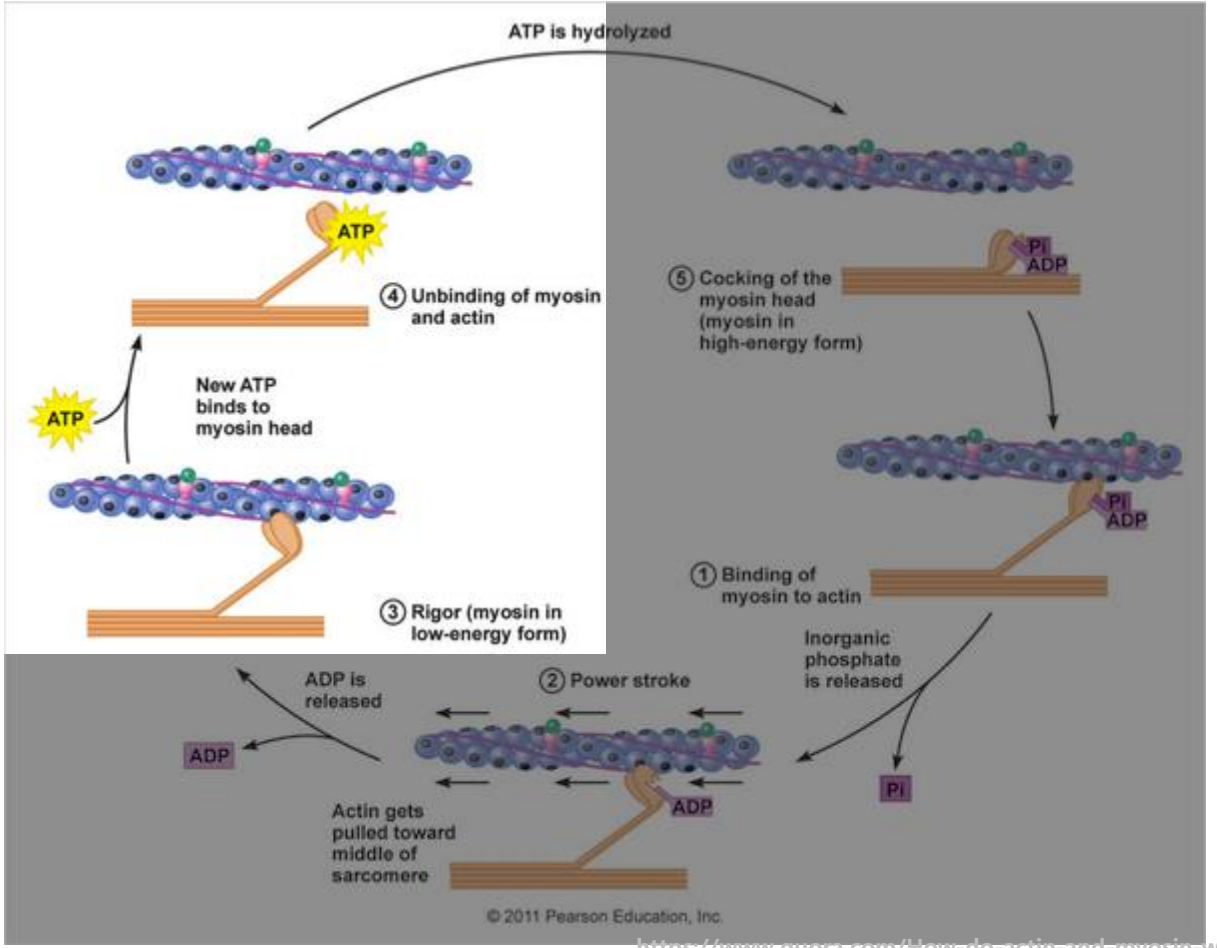

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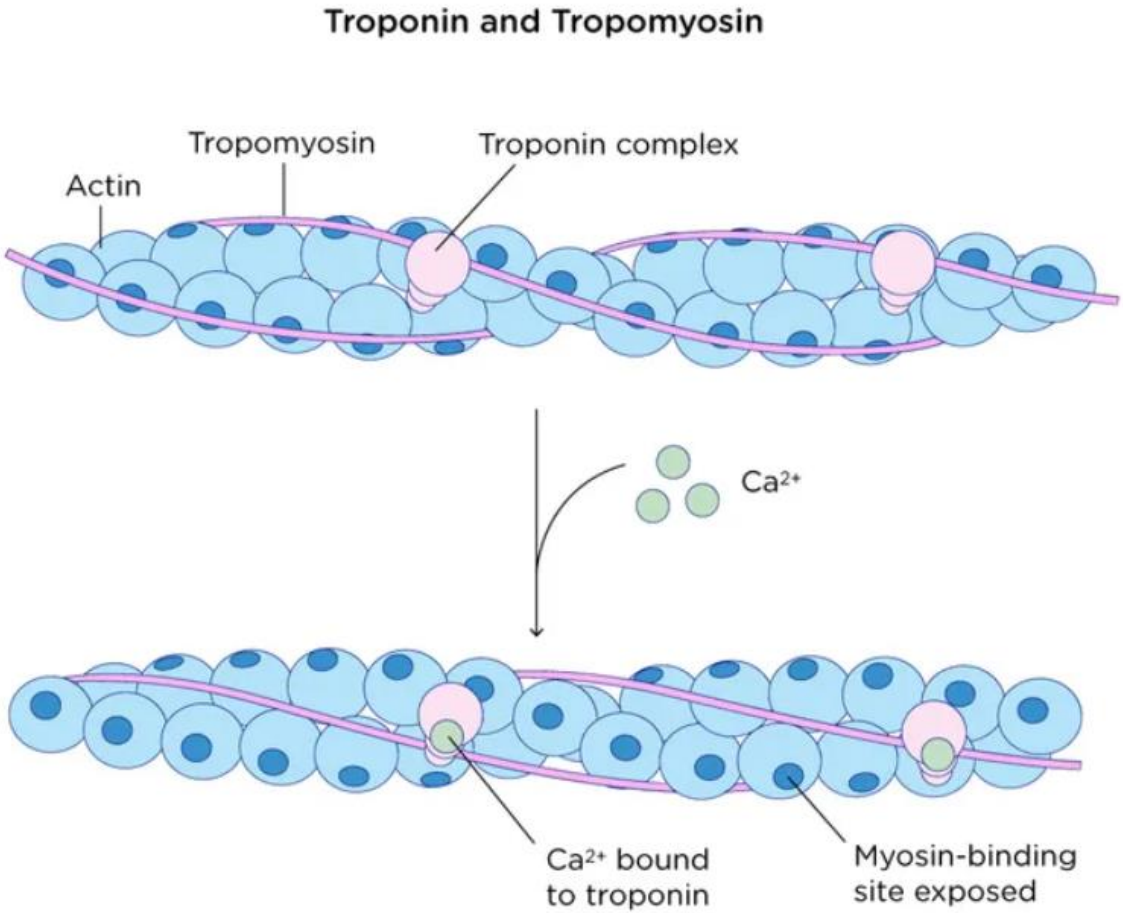

https://jackwestin.com/resources/mcat-content/specialized-cell-muscle-cell/presence-of-troponin-and-tropomyosin

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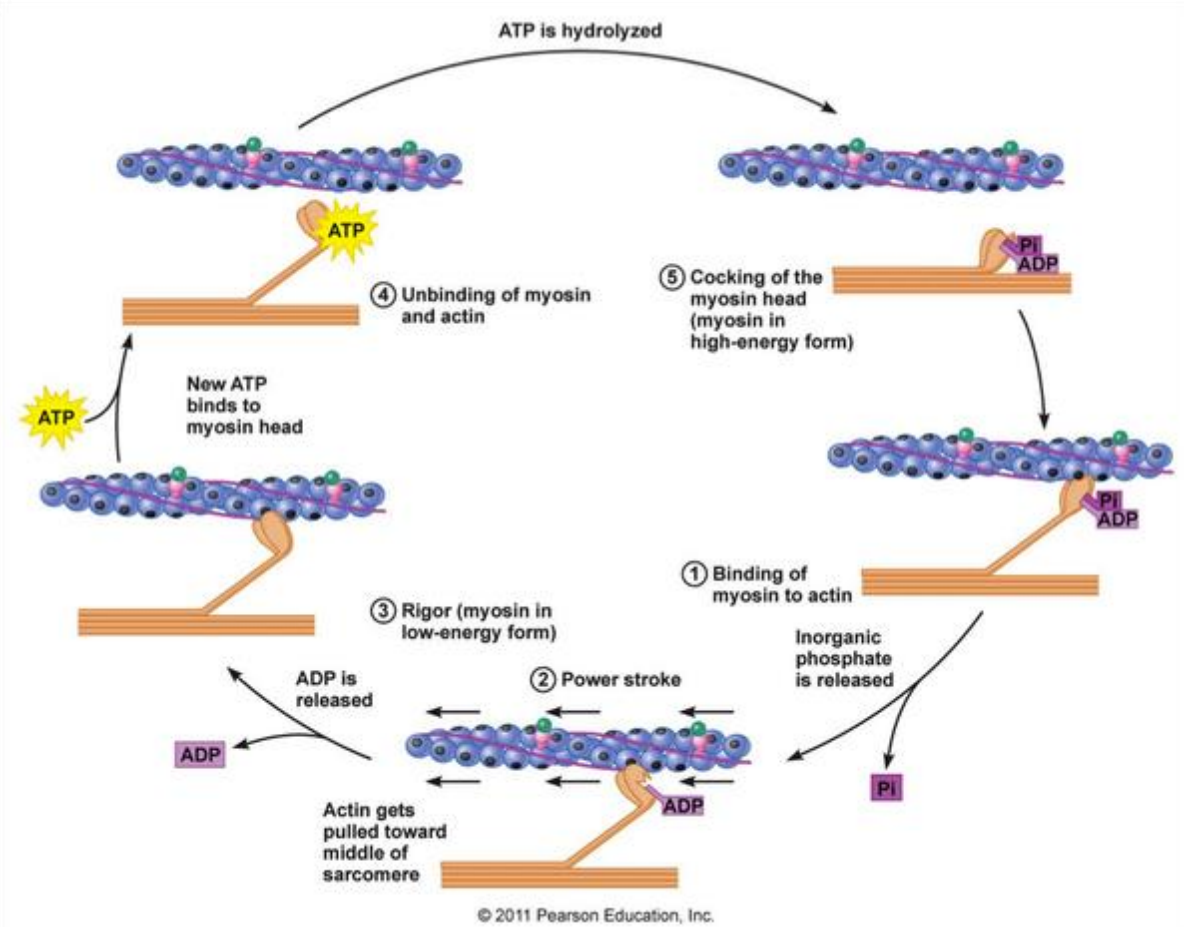

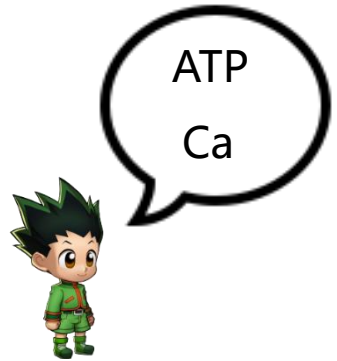

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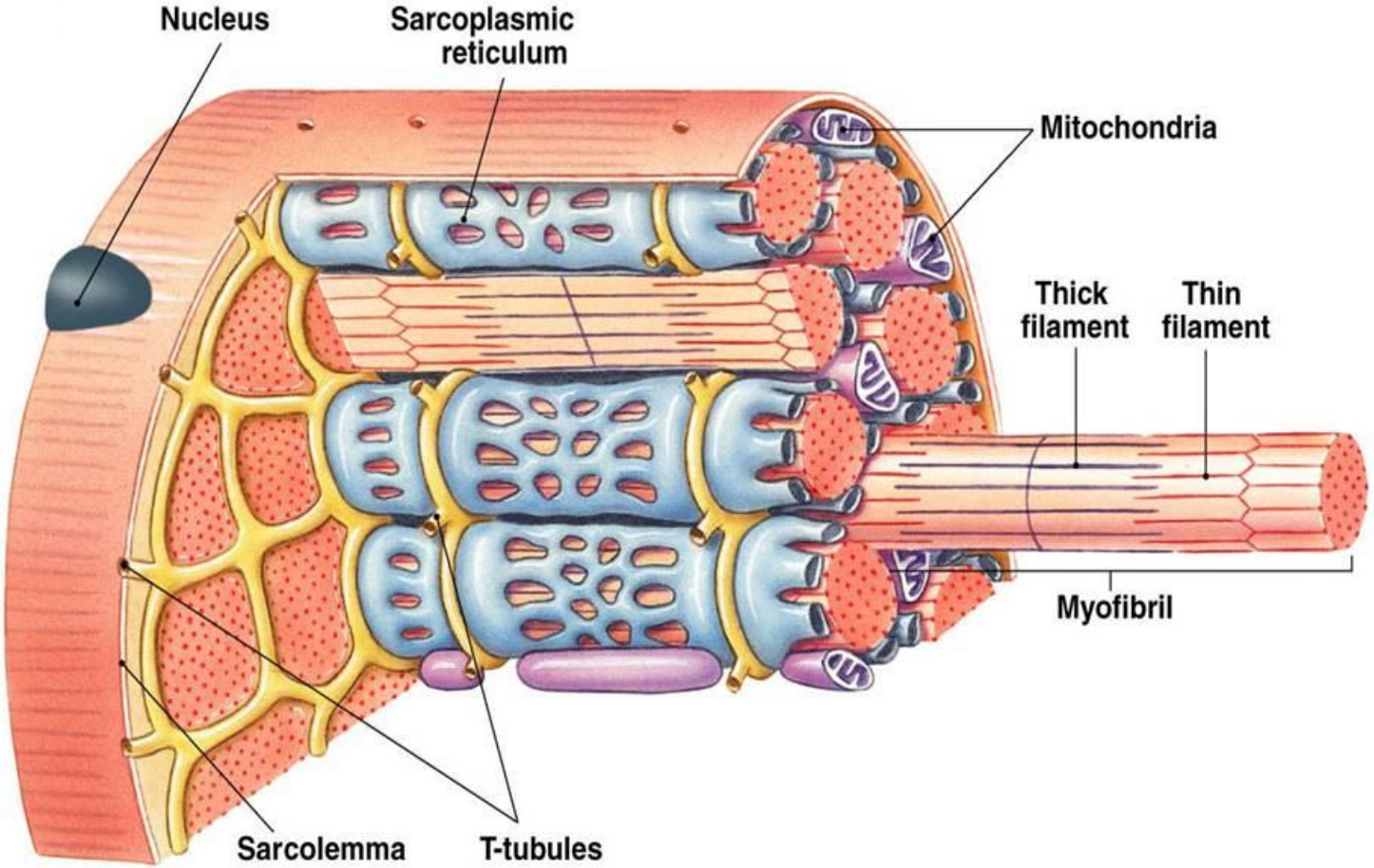

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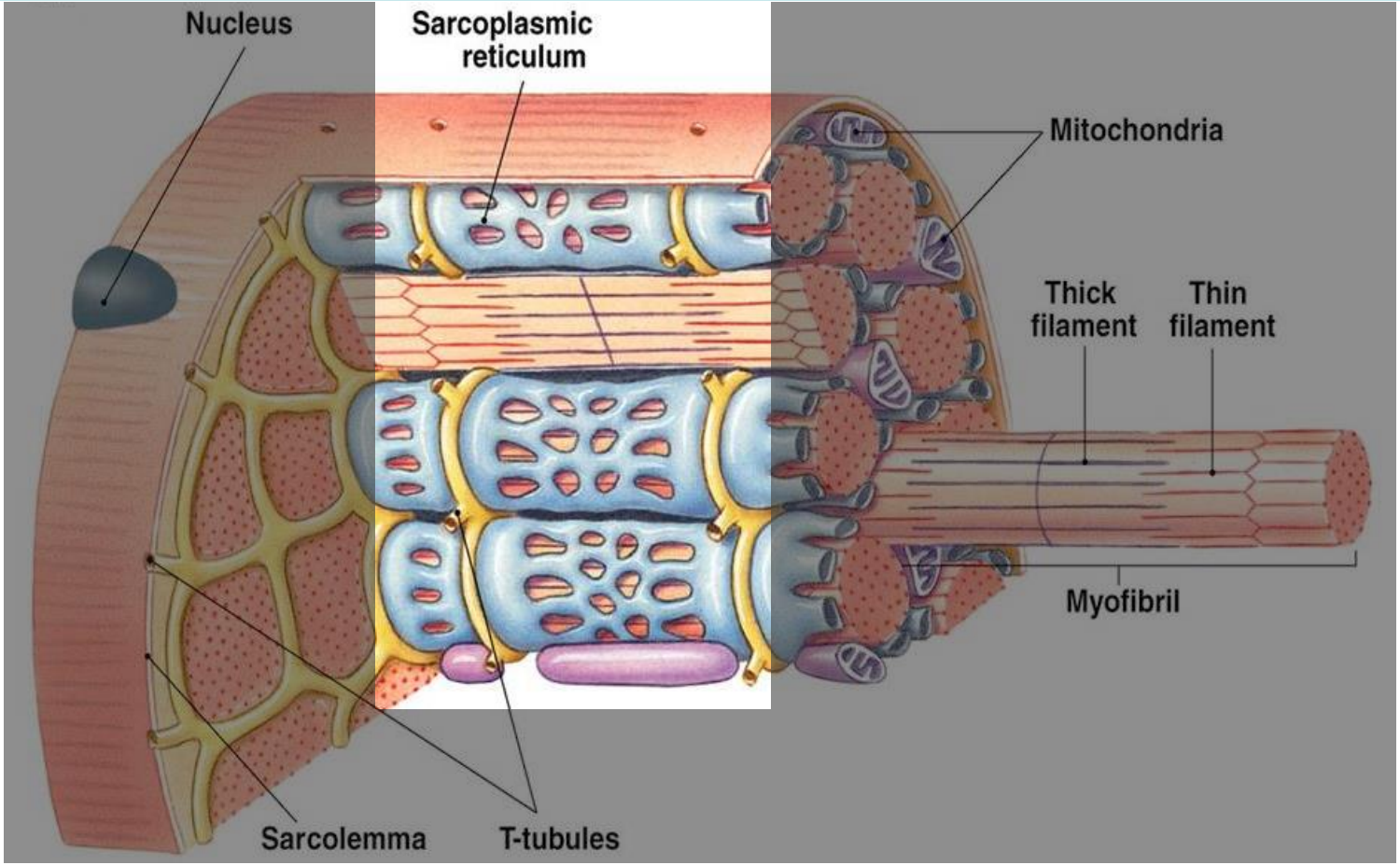

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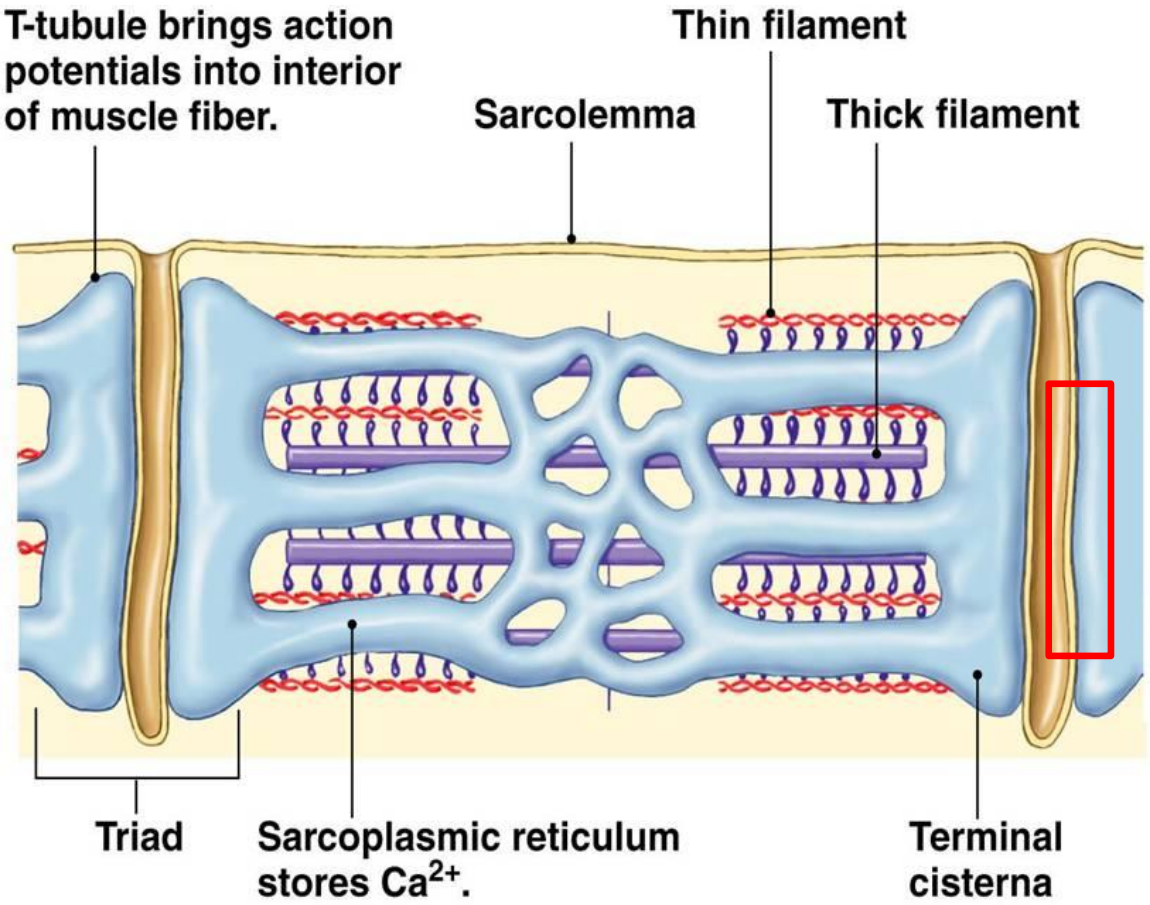

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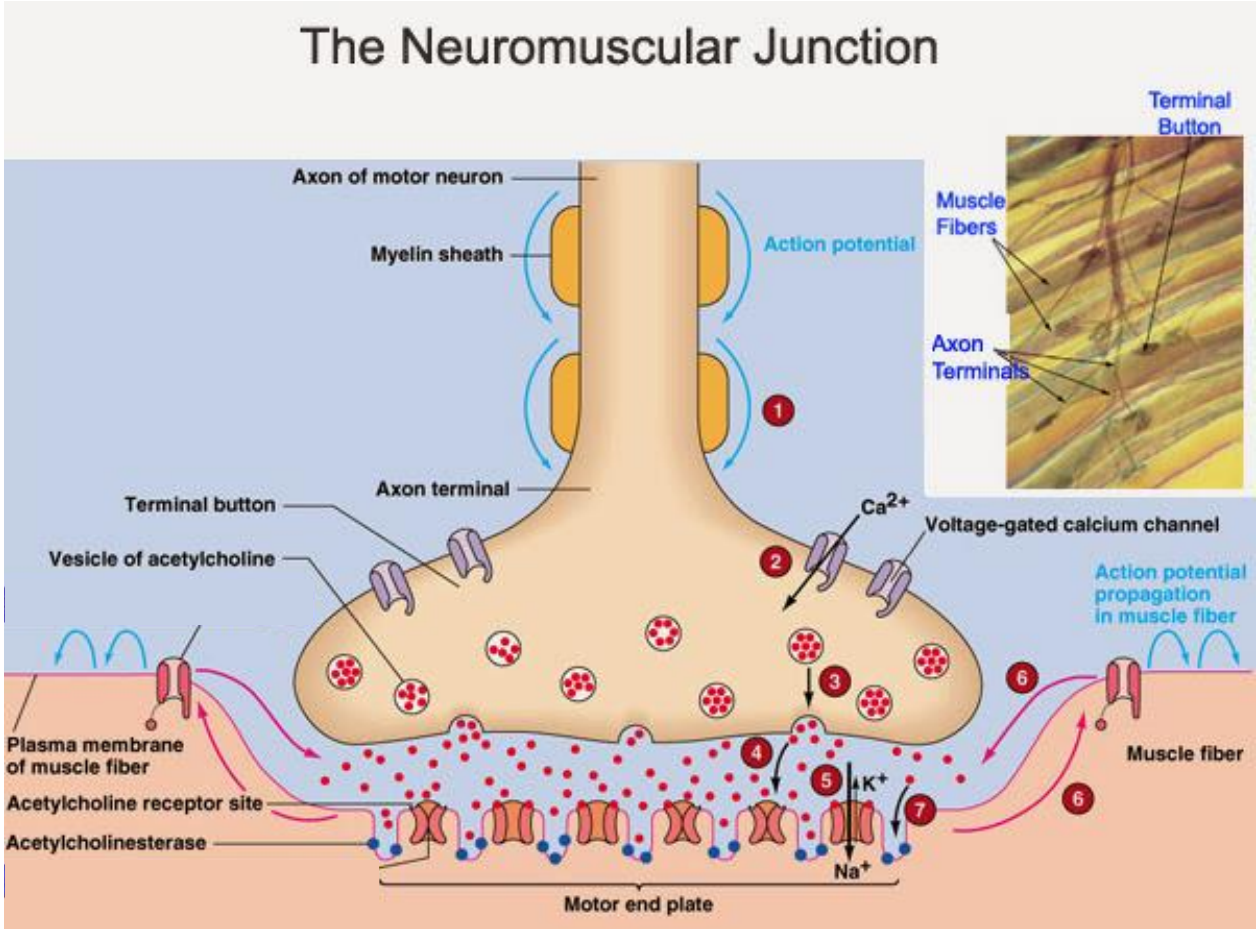

http://cmceducation2012.blogspot.com/2012/09/neuromuscular-junction.html

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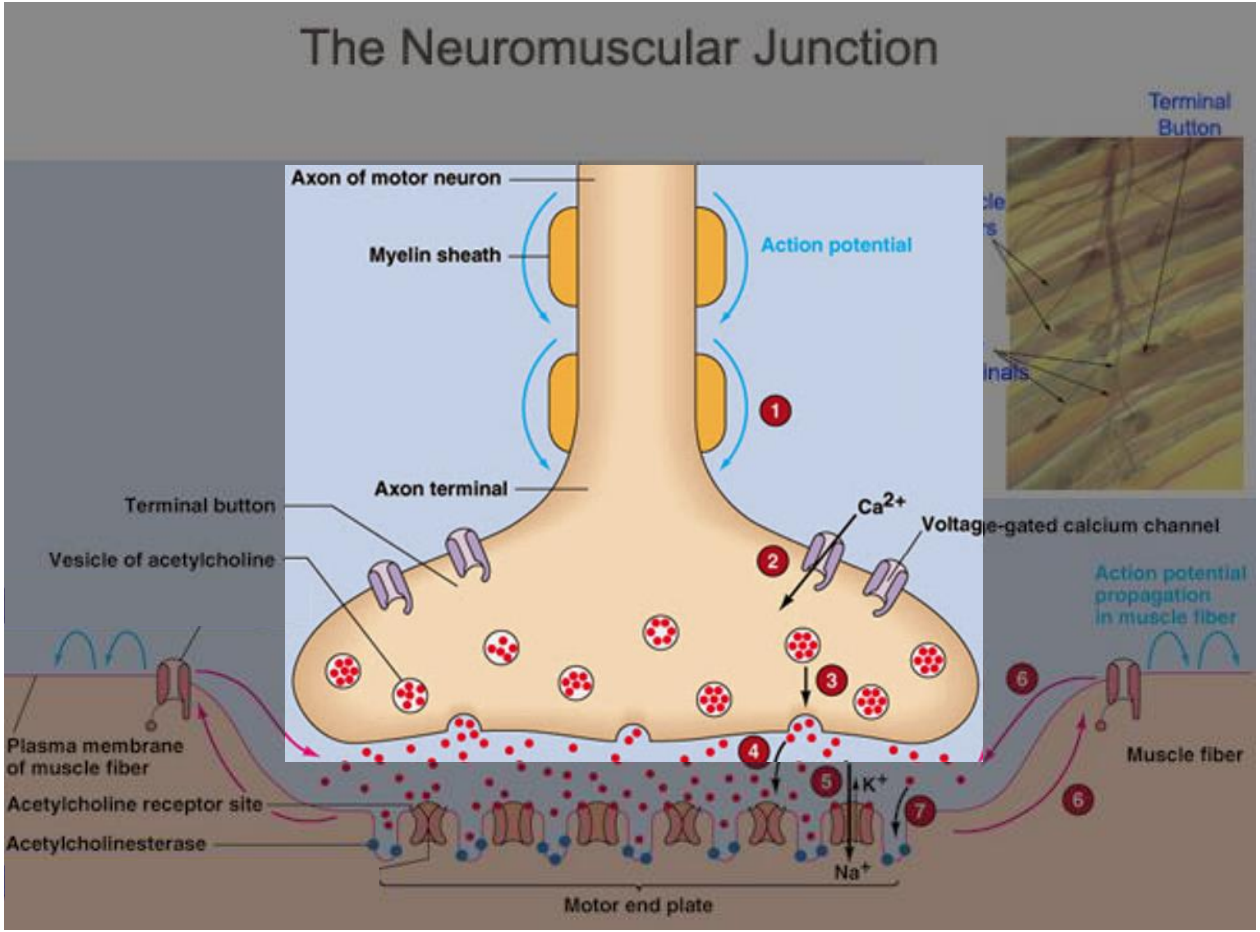

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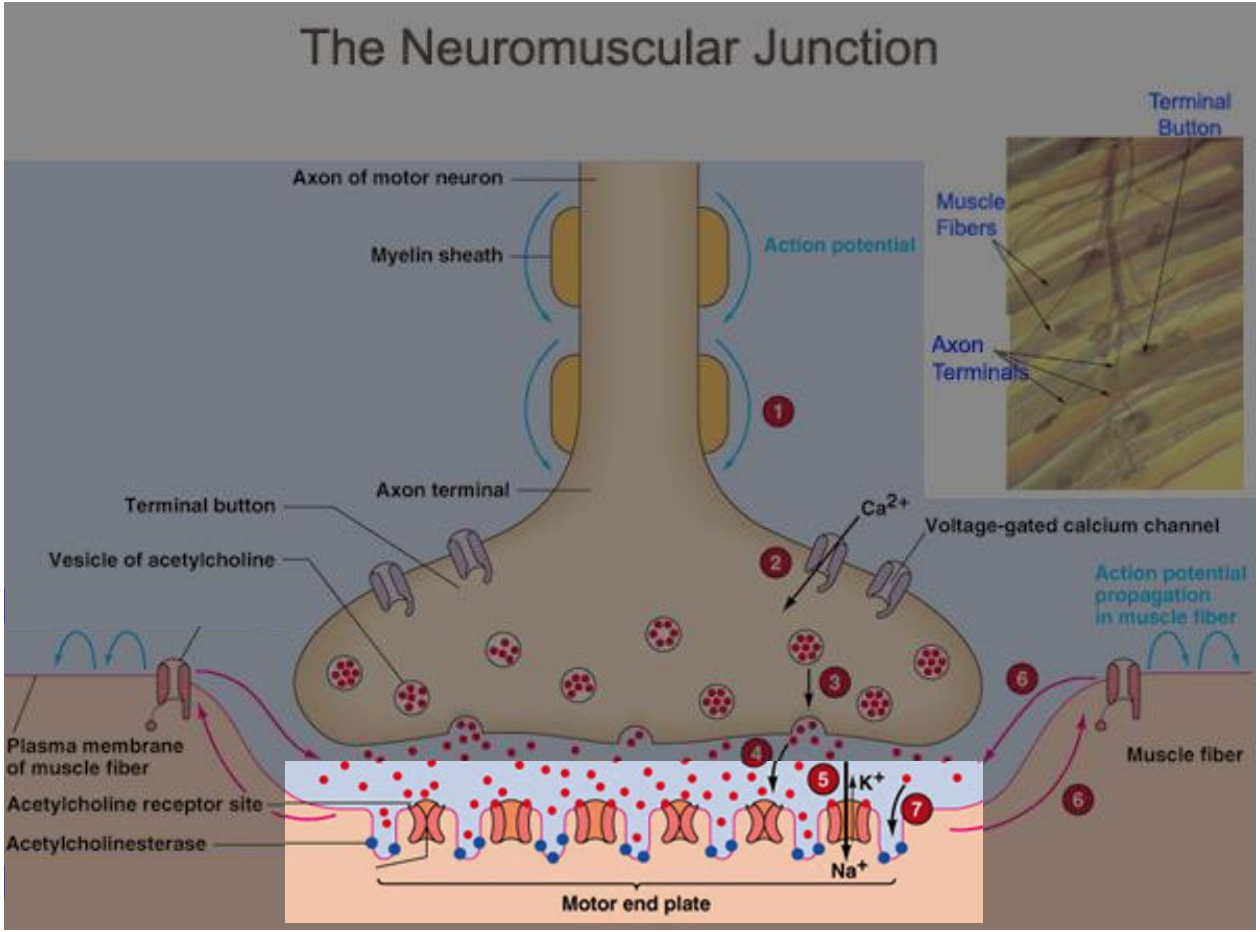

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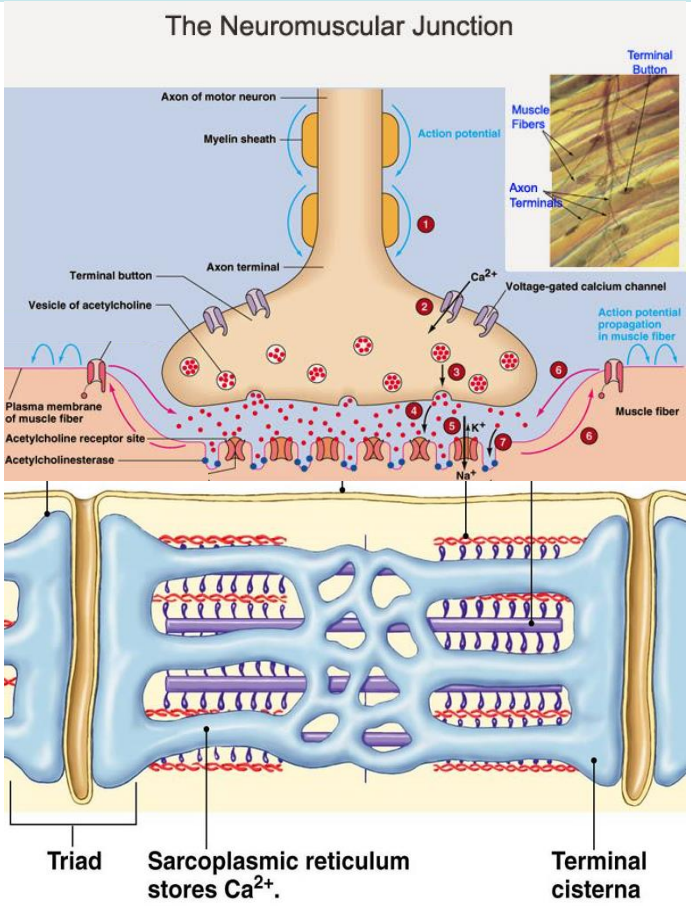

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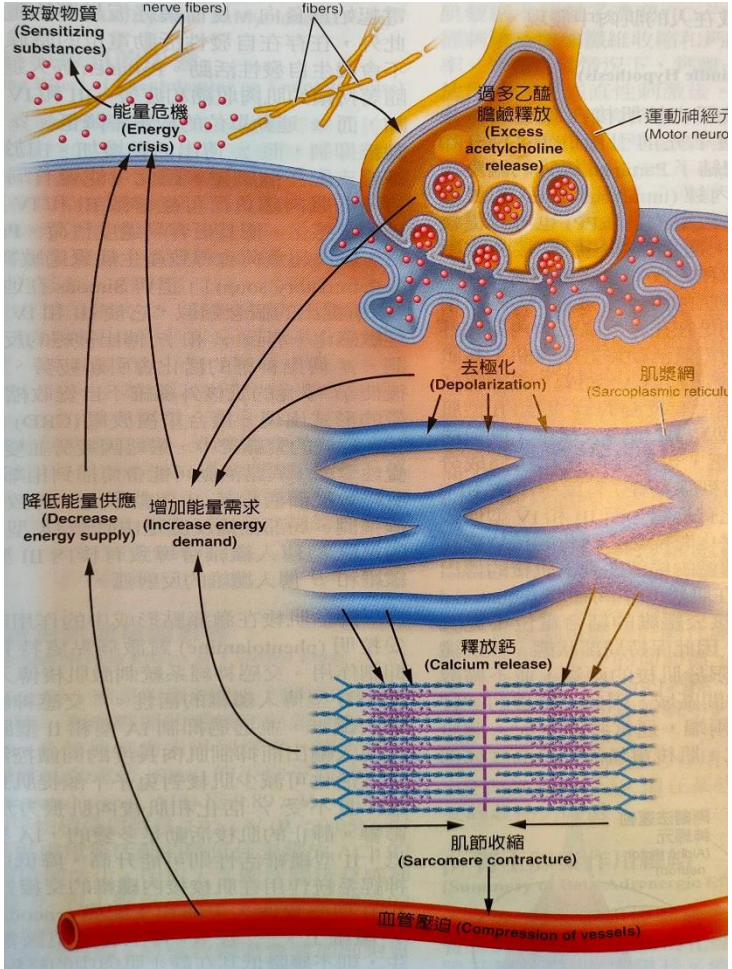
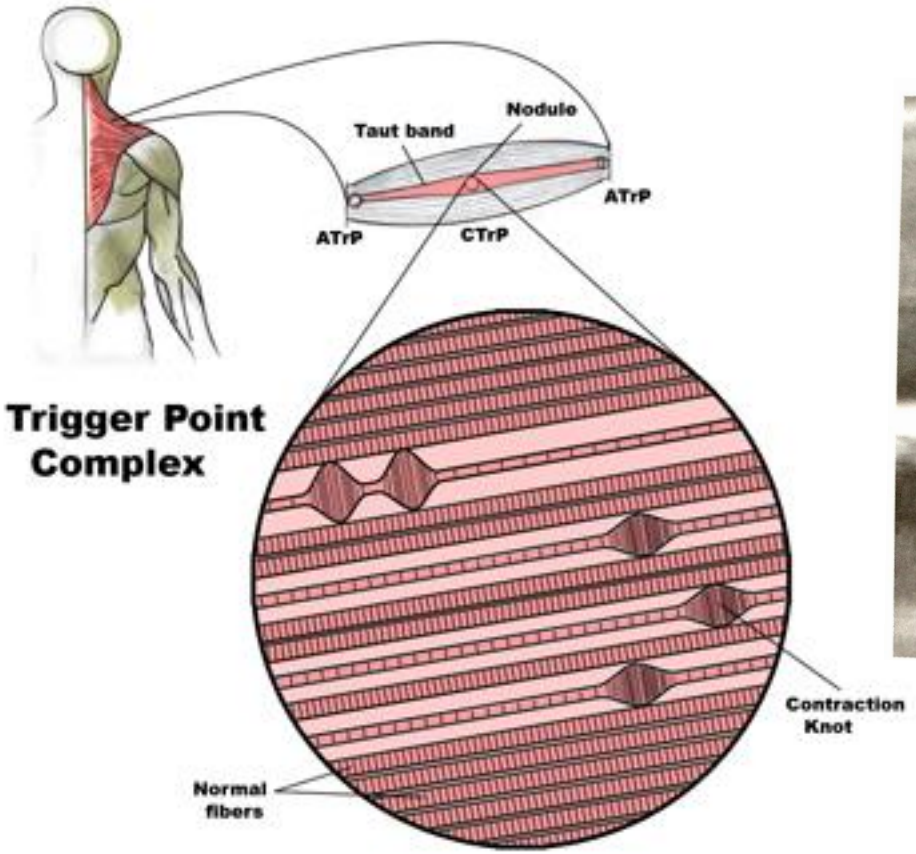
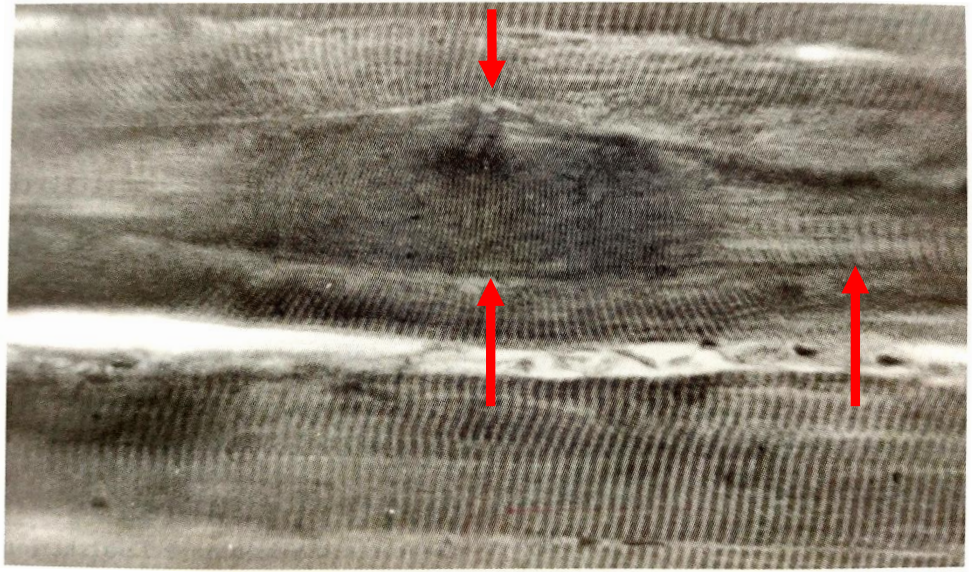
Simons' Integrated Hypothesis 整合性假說

Energy Crisis







https://healthjade.net/myofascial-trigger-points/

MTrP的成因

Direct causes

- acute overuse
- direct trauma
- persistent muscular contraction
- prolonged immobility
- low level muscle contractions
- unaccustomed eccentric contractions

Indirect causes

- associated MTrP (Secondary & Satellite)
- afferent input from joints
- afferent input from internal organs
- emotional stress / tension

MTrP的診斷

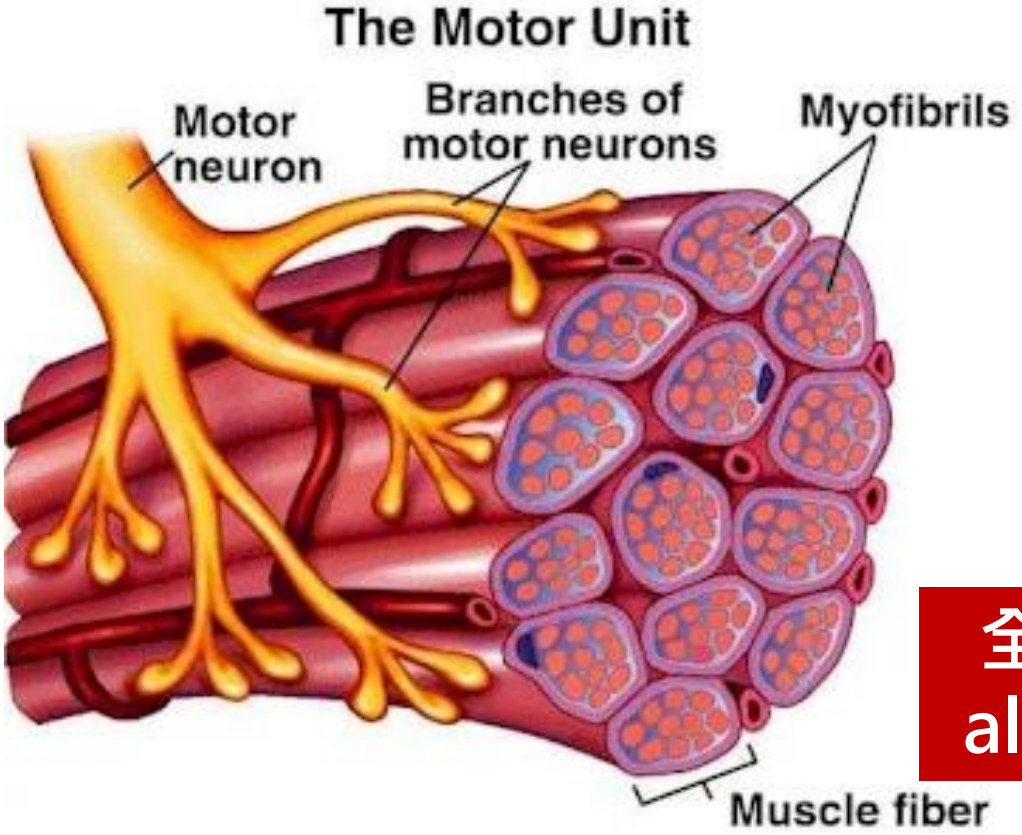
Main diagnostic criteria

- ✓ taut band
- ✓ localized increased sensitivity to pressure within the taut band
- ✓ referred pain during manual stimulation or needling of the MTrP
- ✓ the local twitch response – the LTR is a main diagnostic criterion when using Dry Needling

Additional diagnostic criteria

- ✓ decreased ROM of muscles with MTrP
- ✓ decreased muscle strength
- ✓ autonomic signs like sweating, dizziness, sickness

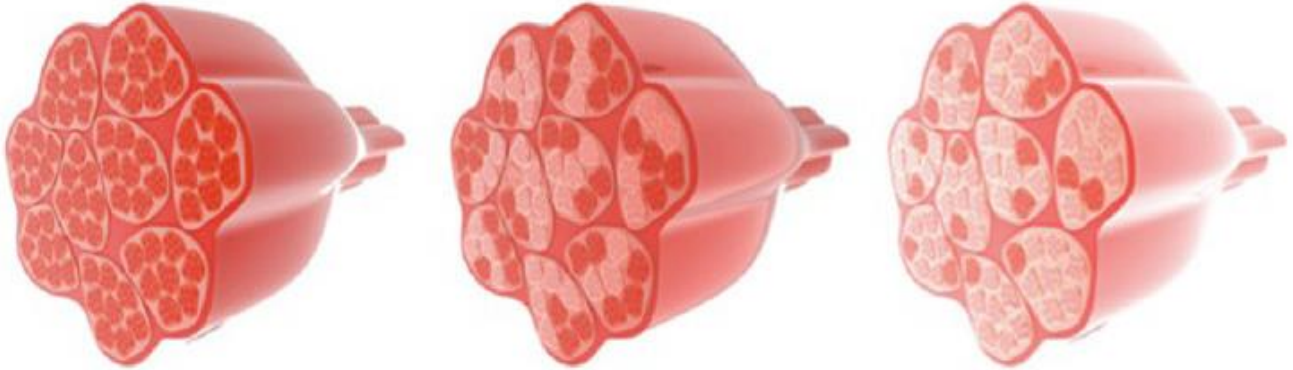
基礎知識



全有全無律
all-or-none

基礎知識

Type I
紅肌
慢縮肌



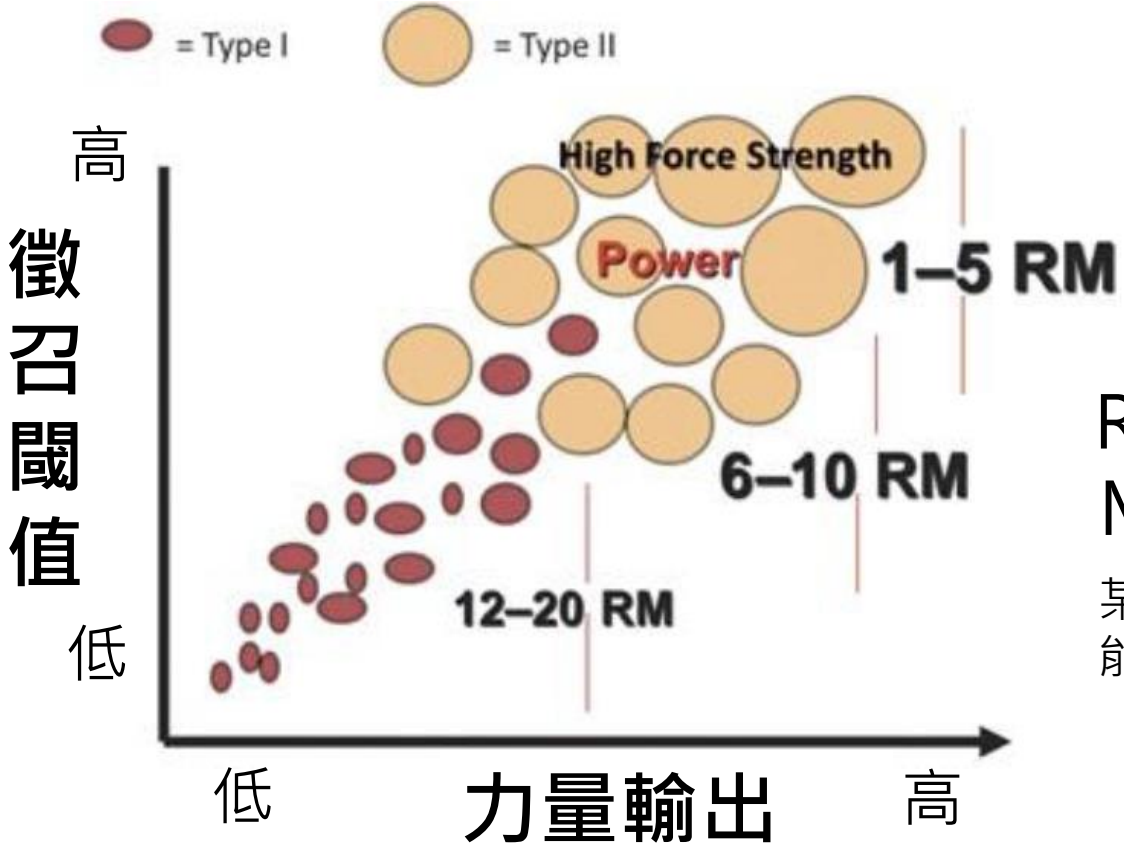
Type II
白肌
快縮肌

粒線體含量
氧化能力
能量產生效率
收縮時間
抗疲勞能力

運動神經元
激發閾值
收縮速度
收縮力量
肌纖維直徑

https://www.researchgate.net/figure/The-size-principle-is-depicted-in-this-figure-in-which-each-circle-represents-a-motor_fig2_271953774

基礎知識



https://www.researchgate.net/figure/The-size-principle-is-depicted-in-this-figure-in-which-each-circle-represents-a-motor_fig2_271953774

Repetition Maximum

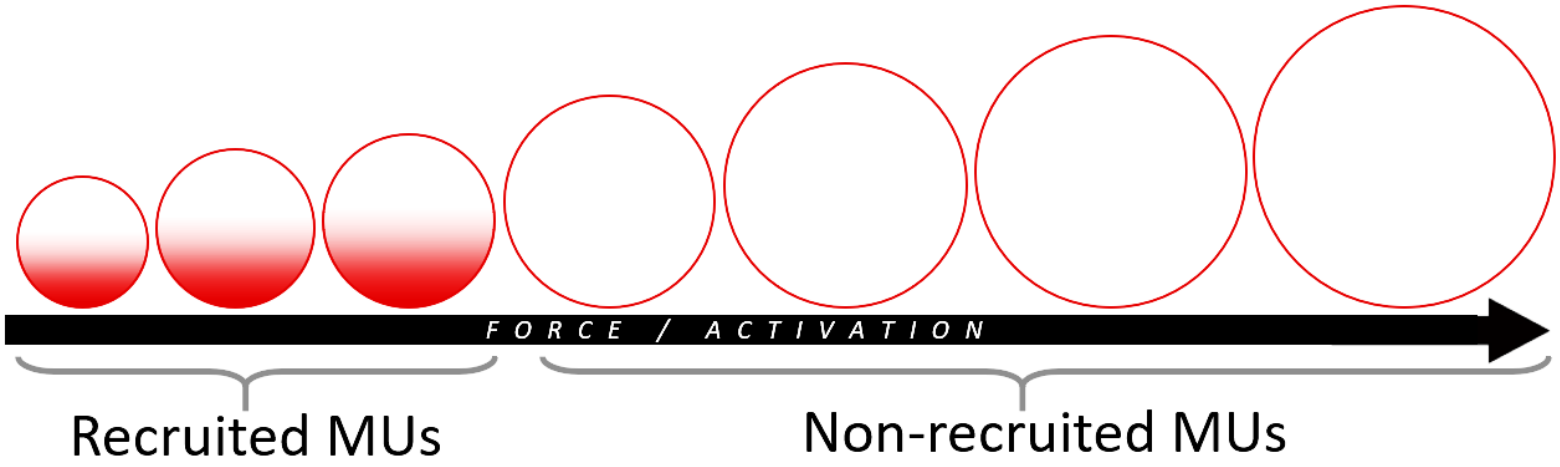
某一肌群收縮N次能抵抗的最大重量

基礎知識

Henemann Size Principle

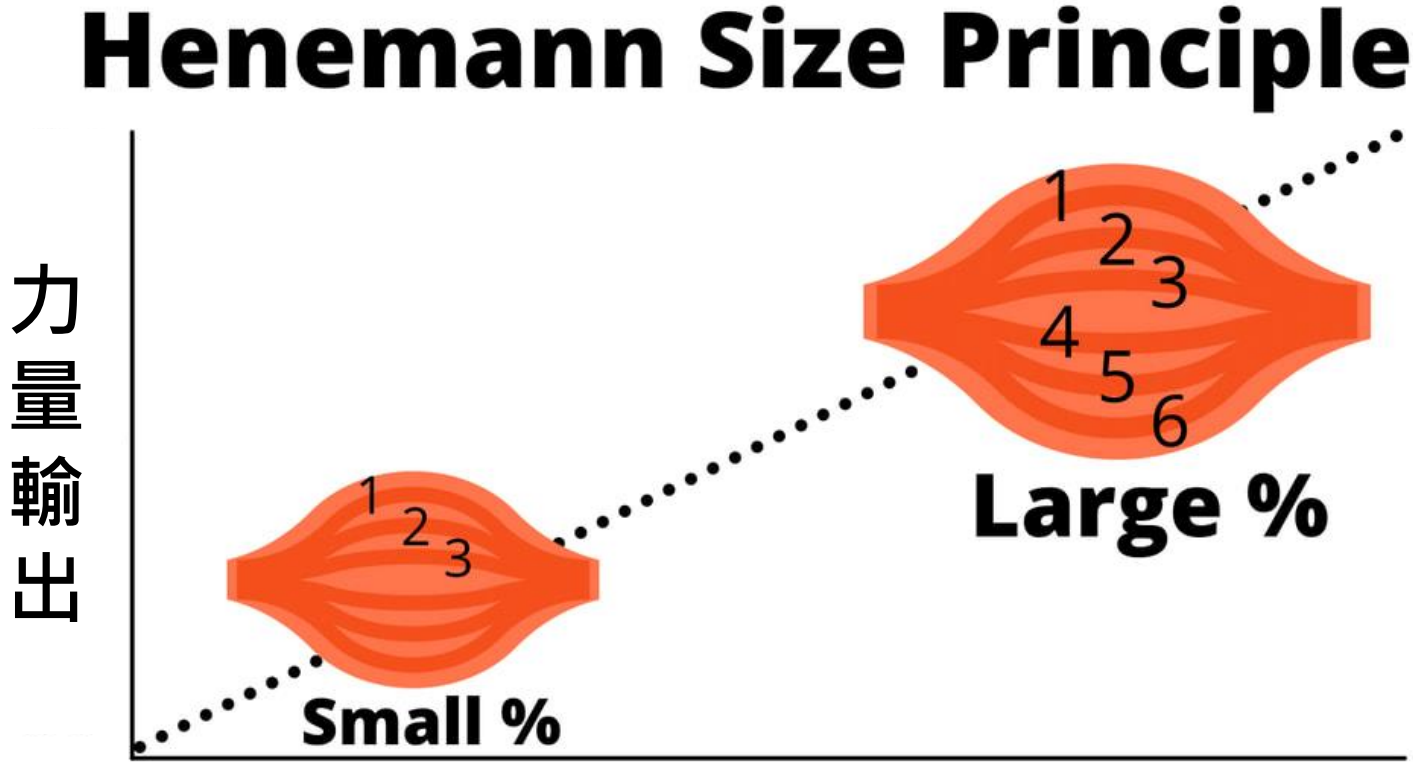
Small motor neurons (MN) ----------> Large MN

Slow motor units (MU) ----------> Fast MU



https://www.mtrigger.com/motor-unit-recruitment-biofeedback-in-rehabilitation/

基礎知識



https://www.commonclimber.com/warm-up.html

基礎知識

灰姑娘假說
（Cinderella Hypothesis）

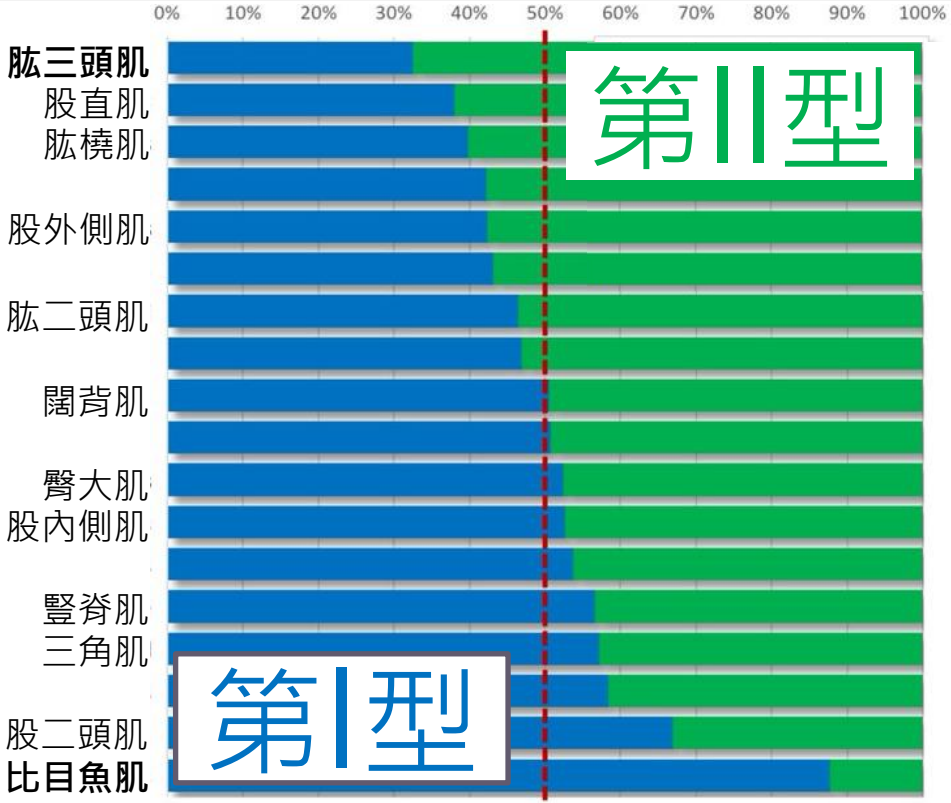
在低強度、長時間活動（如久坐打電腦）時：

小型運動單元（Type I）會最早被徵召也會最後休息

長時間持續工作 → 慢性疲勞 → MTrP

https://www.commonclimber.com/warm-up.html

基礎知識



Type II
白肌
快縮肌

Type I
紅肌
慢縮肌

Derived from: Johnson, M. A., Polgar, J., Weightman, D., & Appleton, D. (1973). Data on the distribution of fibre types in thirty-six human muscles: an autopsy study. *Journal of the Neurological Sciences*, *18*(1), 111-129.

Strength & Conditioning Research

平行肌

- ✓ 排列平行於肌肉長度
- ✓ 有較大的移動範圍

扁平肌：腹直肌、腹外斜肌
梭狀肌：肱橈肌、肱二頭肌
放射肌：胸大肌、斜方肌
帶狀肌：縫匠肌
環狀肌：口輪匝肌、眼輪匝肌

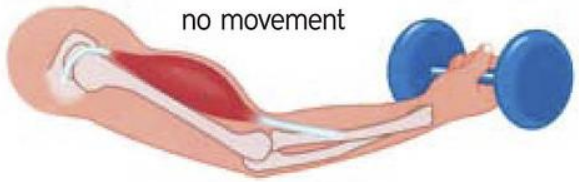
羽狀肌

- ✓ 肌束斜向排列於肌腱的兩側
- ✓ 大幅增加了肌肉的橫切面積
- ✓ 有較強的力量輸出

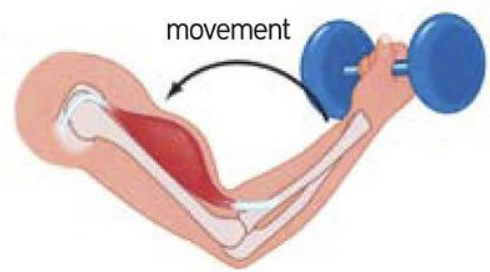
單羽狀肌：股二頭肌
雙羽狀肌：股直肌
多羽狀肌：三角肌

基礎知識

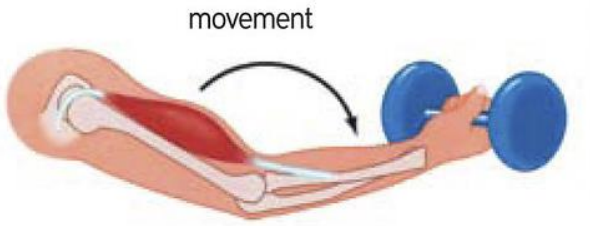
等長收縮



等張收縮

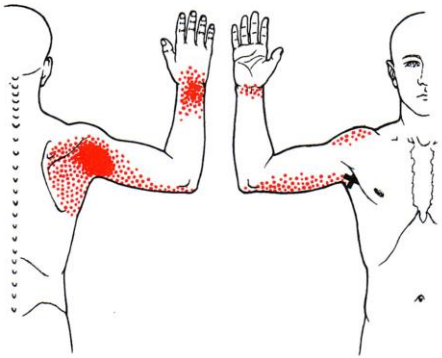


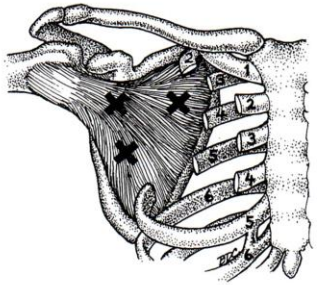
向心

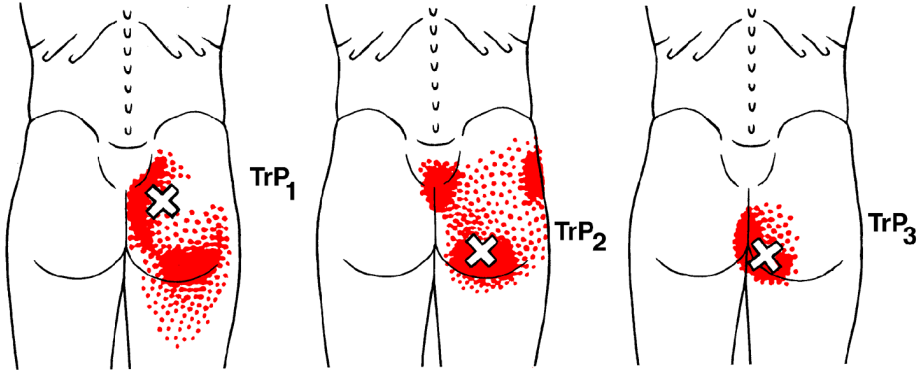


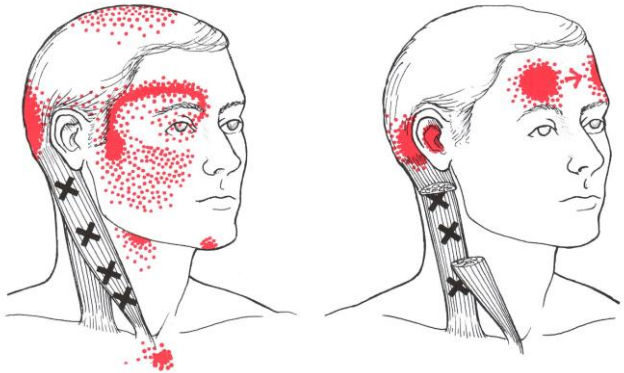
離心

http://www.triggerpoints.net/









Thank you for attention!