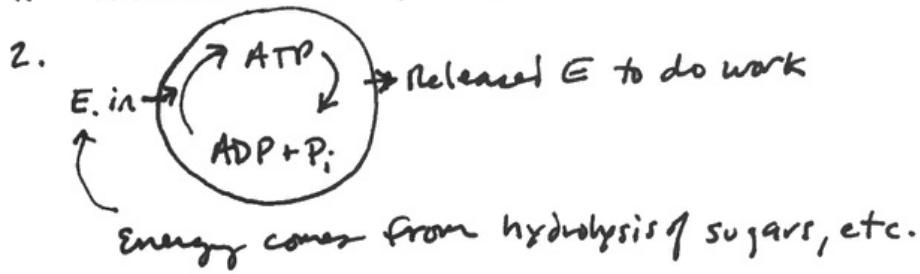


# Muscle metabolism

1. Adenosine triphosphate . Energy - storing molecule .



3. Donates  $P_i$  (Phosphate) to ADP.

4. Active transport, "cock" Myosin Heads, etc.

5. Uses  $O_2$  + sugar to make ATP (needs mitochondria)

6. uses sugar (No  $O_2$ ) in cytoplasm to make a small amt. of ATP  
produces lactic acid

7. Carbs, sugars, also Fats converted into sugars

8. GH, testosterone

9.

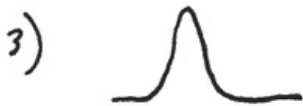
	WHITE	RED	
Diameter	larger	smaller	
Color	white	Red	← Duh!
FIS	<del>poor</del> F	<del>poor</del> S	
Blood	Poor	Good	
Mito.?	Few	LOTS	
Glyco?	HIGH	Low	
Cy. Sp.	Fast	slow	
Type	anaerobic	aerobic	
Myo?	NO	YES	
M/S?	SPRINT	March	

## Contraction of Motor Units

- 1) A motor neuron + all of the muscle fibers it innervates.
- 2) When one motor neuron controls a smaller # of fibers.  
ex. eye muscles
- 3) When one motor neuron controls a large # of fibers  
ex. calf (gastrocnemius)
- 4) Constant, low-level stimulation of a muscle.
- 5) No stimulation... limp. (Like when you pass out)

## Whole Muscle Contraction

- 1) All or None ! (Can't contract half-way!)
- 2) a) Frequency of stimulation (from nervous system)  
b) # of motor units recruited  
c) Degree of stretch.



- 5) Twitch, A summation, B Tetanus, C Relaxation, D