

# Stability & Power

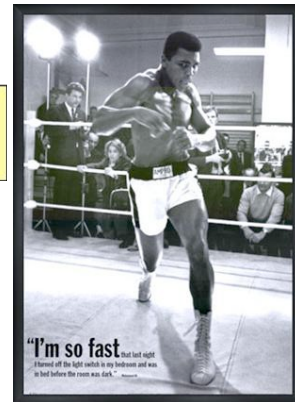
How to prevent injury in your training program

## Power

- Bodybuilding (cosmetics) vs. Athletics



$$\text{Power} = \frac{\text{Force} \times \text{Distance}}{\text{Time}}$$

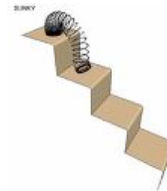


# Athleticism

- Functional Flexibility
- Speed
- Power



- A spring that is tight springs more
- A spring that is loose springs less
- Too much elasticity leads to less power
- Very tight elastic band will resist hard

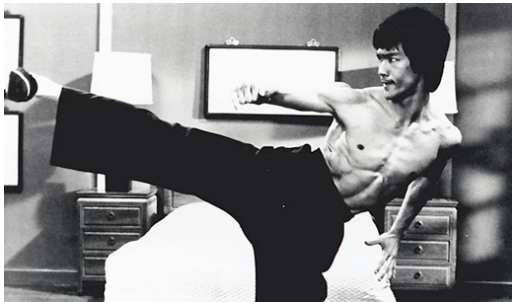


## Functional Stability

- What is the difference in power generated?
  - Apply force to a fixed point
  - Apply force to an unfixed point

## Kicking

- The core is stable
- So the leg can be powerful

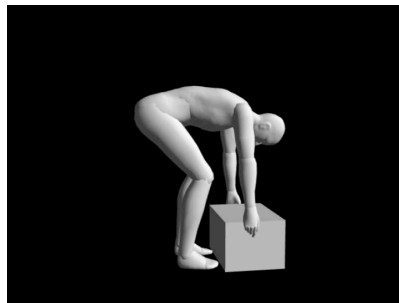


## Baseball Pitching

- The core is stable
- So the arm can generate a powerful movement



- Where is stability needed?
- Where is mobility needed?



## Good Form - The ABCs

- Sets & Reps help build strength
- But, first make sure form is correct - movement literacy

## Pull-Downs

- Incorrect

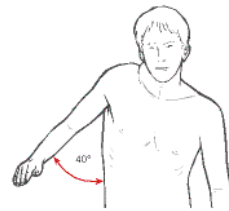
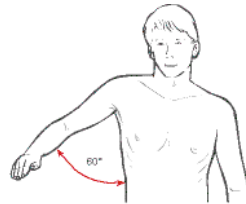


- Correct



## Arm Raises

- When the shoulder blade is stable & fixed from below the arm has more control/coordination
- When the shoulder shruggers take over a poor movement pattern results



- The sports medicine specialist, Stanley Herring says, "signs and symptoms of injury abate, but these functional deficits persist.... adaptive patterns develop secondary to the remaining functional deficits."

*Herring SA, Rehabilitation of muscle injuries. Med Sci Sports Exer 1990;22:453-456.*



## The influence of ankle sprain injury on muscle activation during hip extension

- Significant delay in onset of activation of the gluteus maximus on the injured side
- Therefore, AFTER an ankle sprain be sure to strengthen your gluts!

*Bullock-Saxton JE, Janda V, Bullock MI: Int J Sports Med 15: 330-334, 1994*

## Janet Travell, MD White House Physician for President John F. Kennedy

- “After an injury tissues heal, but muscles learn. They readily develop habits of guarding that outlast the injury.”