



# 2019 SPORTS CLINIC

PRESENTED BY



THE CENTER FOR HEALTH  
& SPORTS MEDICINE

# DISCLOSURES

- **No financial disclosures**





# GOALS

## **Optimize player performance and injury prevention via:**

- **Hydration & Limiting Heat Stress**
- **Nutrition**
- **Proper stretching and strengthening**
- **Arm care**
- **Injury recognition**
- **Cross Training**



# Hydration

- **Critical to sports performance**
  - **2% drop in body weight from dehydration results in an 8-10% diminished performance**
- **Schedule water breaks during practice**
- **Have water and flavored sports-drink options**
- **Enforce that athletes bring their own water bottle to practice and games**
- **Dehydration is the enemy of recovery**



# Recognize Dehydration

- Noticeable thirst
- Muscle cramps
- Weakness
- Decreased performance
- Difficulty paying attention
- Headache
- Nausea
- Fatigue
- Lightheadedness, dizziness

# Heat Stress

TEMPERATURE (WBGT)		RECOMMENDATIONS
< 82.0°F		At least 3 separate rest breaks each hour, minimum duration 3 min each
82.1-86.9°F		At least 3 separate rest breaks each hour, minimum duration 4 min each
87.0-90.0°F		Max practice time 2 hr. At least 4 separate rest breaks, 4 min each
90.1-91.9°F		Max practice time 1 hr. 20 min rest breaks distributed through practice
≥92.0°F		No outdoor activities, delay practice



# Nutrition

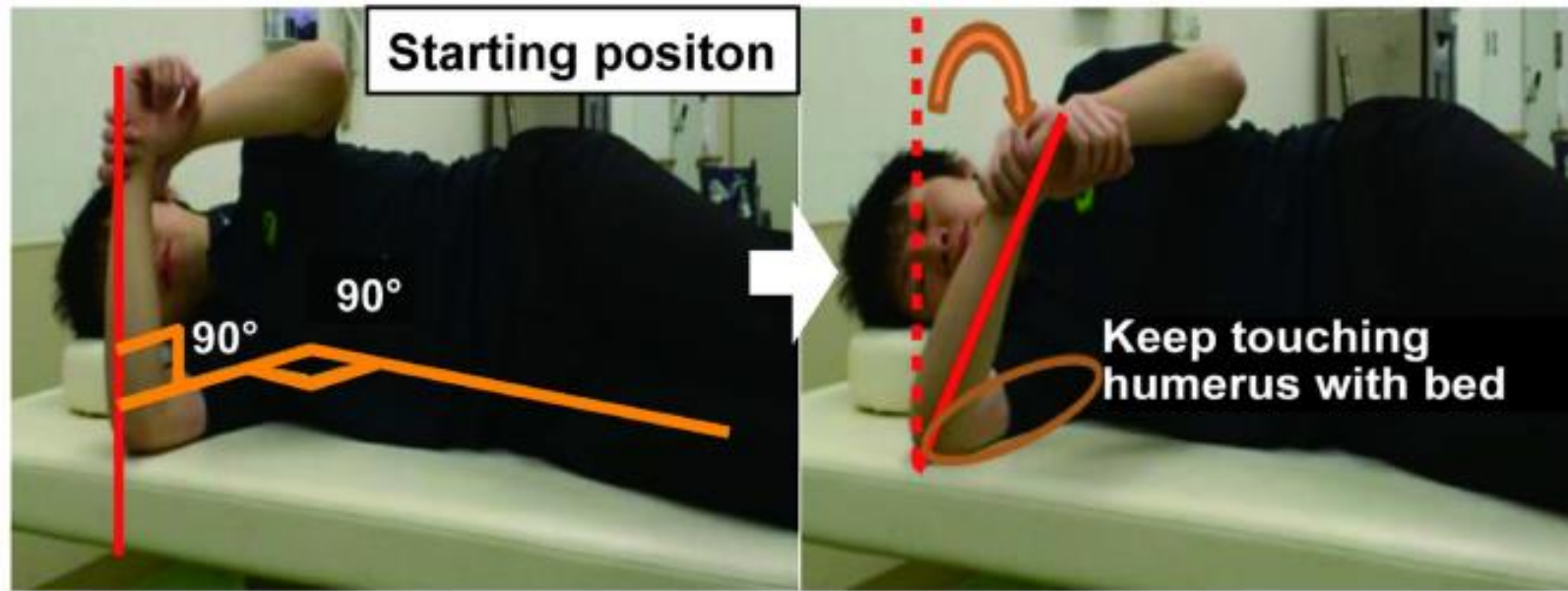
- **Body must replenish calories, easiest replacement energy are carbohydrates**
- **Fuel the body with carbs and proteins within the first 4 hours after activity as this repairs injury, builds muscle, and restores glycogen content in muscles to be used as immediate energy resources**

# Stretching & Strengthening

- Proper routine stretching will reduce the rate of shoulder and elbow injuries, and will prolong the health of the shoulder
  - In a randomized trial, 57% of throwers who did not stretch were injured at a median time of 29.5 days;
  - 25% of throwers who did stretch & strengthen their arms were injured at a median time of 89 days



## (A) Sleeper stretching exercise



- Lie in lateral position with dominant-arm scapula in contact with bed, 90° from body with elbow also at 90°
- Arm is passively internally rotated to its maximum and held for 1 minute, repeat 5 times.

## (B) Shoulder External rotation

Starting position



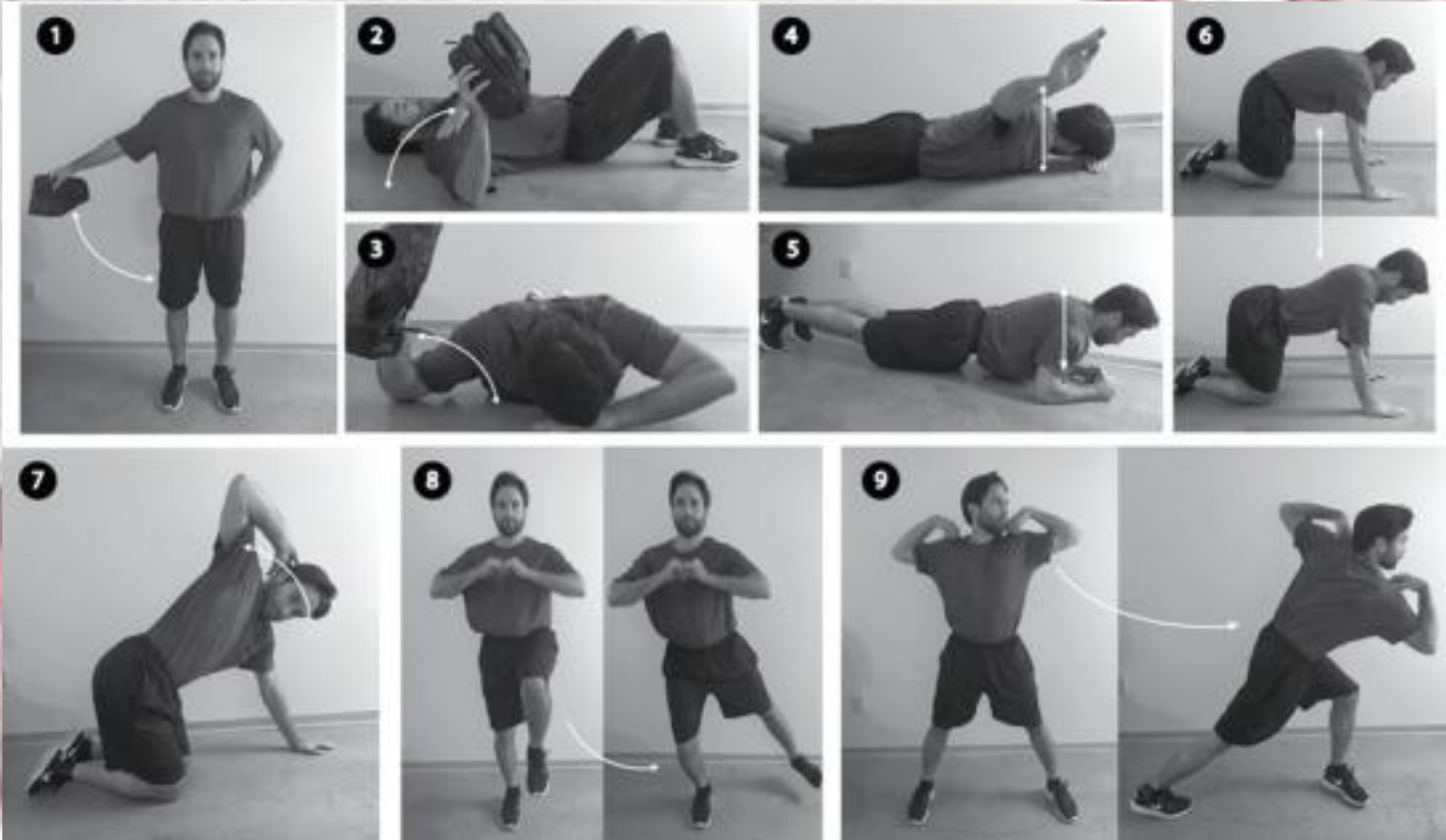
- Lay prone on table with dominant arm abducted 90° degrees and elbow flexed to 90°, holding 500 ml (5 g) water bottle
- Externally rotate for 1 second (concentric), then return to starting position for 1 second (eccentric); repeat 20x for 3 sets



# Yokohama Baseball-9 Stretches



# Yokohama Baseball-9 Strengthening



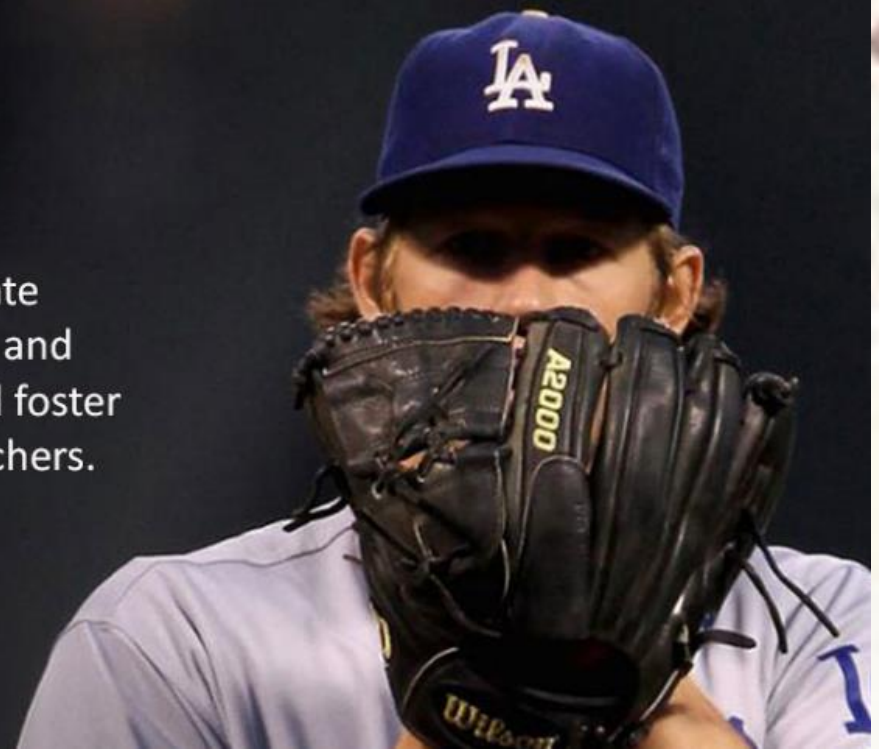


# Arm Care

- **USA Baseball Medical and Safety Advisory Committee**
  - [USAbaseball.com/about/medical-and-safety](http://USAbaseball.com/about/medical-and-safety)
- **PITCH SMART**
- **Pitching volume is the strongest predictor of injury**

## Pitch Smart.

A series of practical, age-appropriate guidelines to help parents, players and coaches avoid overuse injuries and foster long, healthy careers for youth pitchers.



# Arm Care

- **Are 9 - 18-year olds generally compliant with arm care?**
- **Are their parents helping to protect their arms?**



# Arm Care

- **JCB Local Rules Pitching Limits** *(as of 10/1/19)*

Age	Daily Max	Rest Period for Pitches Thrown			
		0 Days	1 Day	2 Days	3 Days
9U/10U	65	< 20	21 - 35	36 - 50	51 - 65
11U/12U	85	< 40	41 - 65	66 - 85	-

Source: [JCBASEBALL.ORG/RULES](http://JCBASEBALL.ORG/RULES)

- **FHSAA rules prohibit playing pitcher and catcher in same game**



# Throwing Mechanics



1. Windup

2. Cocking, late phase  
before maximal external  
rotation

3. Late acceleration,  
near ball release

4. Deceleration

5. Follow-through



# Little Leaguer Shoulder

- Injury to the proximal humeral growth plate
- Treatment is rest from pitching, 4-8 weeks
  - Continued pitching may lead to fracture



**A Little League Shoulder**



**B Normal**

# Little Leaguer Elbow

- Medial epicondyle growth plate injury
- Treat with rest from throwing, however displaced fractures require surgery.





# Injury Recognition- Concussion

- Most likely from being struck (by the bat, struck by the ball), and collisions.
- Baseball is one of the lowest-risk sports for concussion
  - 0.75 per 1,000 AE in football vs 0.03-0.46 per 1,000 AW in baseball
- Symptoms: dazed, headache, light sensitivity, nausea, lightheadedness, dizzy, confusion



# Injury Recognition- Commotio cordis

- **Struck in the middle of the chest by the baseball may disrupt normal electrical activity of the heart, causing sudden cardiac arrest**
- **If player is hit in the chest and suddenly collapses, immediate start emergency action plan**
- **Defibrillator can greatly increase the odds of the child living**





# Protective Equipment

- Helmets, helmets with face masks
- Mouth guard for batters, pitchers, and catchers
- Mitt, Batting glove
- Athletic cup
- Catchers gear- helmet with mask, chest protectors, leg guards
- **\*Ensure proper fit\***



# Cross Training

- **Encourage your players to play multiple sports throughout the year as this increases agility and provides rest to overused muscles**
- **“The current evidence supports the contention that children should be encouraged to take part in a variety of sports at levels consistent with their abilities and interests to best attain the physical, psychological, and social benefits of sport.”**





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# QUESTION/ANSWER



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