



**KZN SCHOOLS SOFTBALL  
SCHOOL OF EXCELLENCE ACADEMY  
2019**

**SOFTBALL INJURY PREVALENCE AND  
PREVENTION STRATEGIES**

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# COMMON INJURIES

Tendinitis – inflammation | Tendinosis – degeneration | Sprain – ligament | Strain – muscle

## **Shoulder**

Rotator cuff tendinopathy; tendinitis, tendinosis | CHRONIC OVERLOAD

Rotator cuff tears – 1 to 3 | ACUTE OVERLOAD

Rotator cuff impingement | TECHNIQUE

Deltoid strains/ tears | OVERLOAD

SLAP lesion – less common | ACUTE OVERLOAD

Bankart lesion – less common | ACUTE OVERLOAD

## **Elbow / wrist / hand**

Tennis elbow – lateral epicondylitis | TECHNIQUE (side arm) & CHRONIC OVERLOAD

Golfers elbow – medial epicondylitis | TECHNIQUE (side arm) & CHRONIC OVERLOAD

Forearm flexor/ extender strain | OVERLOAD

Finger sprains | ACUTE OVERLOAD

## **Hip**

Gluteal/ hip flexor strain | ACUTE OVERLOAD

## **Knee**

ACL/ MCL tears | ACUTE OVERLOAD

PCL/ LCL tears – less common \ ACUTE OVERLOAD

## **Ankle / foot**

Ligament sprains | ACUTE OVERLOAD

# PREVENTING INJURIES

## Warm up and cool down

### Dynamic warm-ups – pretraining/ game:

Dynamic mobility work

Jog @ 50%

High knees

Butt kick

Hammy kicks (low to high)

Quad reach

Lunge rotations

Hip shift sumos

Hip circles (in to out, out to in)

Heel toe walks with diagonal arm swings

Walking over/ unders

Side shuffles

Diagonal quick feet

Jog @ 50%

Run @ 75%

Sprint @ 100%

### Static stretch – post training/ game:

Stretch each main muscle group: 20seconds x 2 sets

Glutes, hamstrings, quads, shoulders, lower back, rotator cuff, neck

## Training load

Volume of throws / pitches should be age and gender appropriate

Example. Taken from Krajnik S (2005-2008)

Age	Pitches/games	Pitches/day 1 & 2	Pitches/ day 3
8-10	50	80	0
10-12	65	95	0
13-14	80	115	80
15- over	100	140	100

# Mobility training

Can be used a dynamic warmup

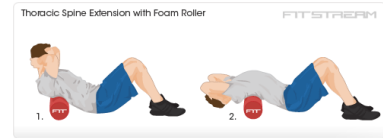
Clean the floor



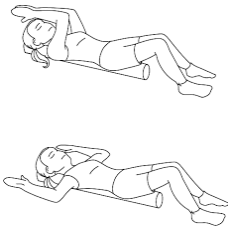
World's greatest stretch



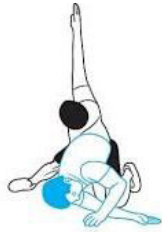
Tx foam roller mobs



Foam roller pec stretch



Tx rotations



Cat camel



Overhead stretch



# Technique

Coaches to address

# Strength training

Strength training: 2/week | 1-3 sets | 8-10 reps | 70%-85% 1RM

Focus on glute, core and rotation strength work

To prevent rotator cuff injuries:

Swords



Band pullouts



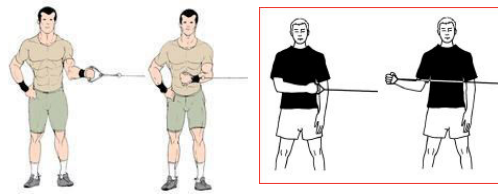
Band pullouts (palm up)



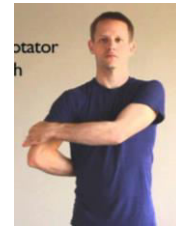
Captains



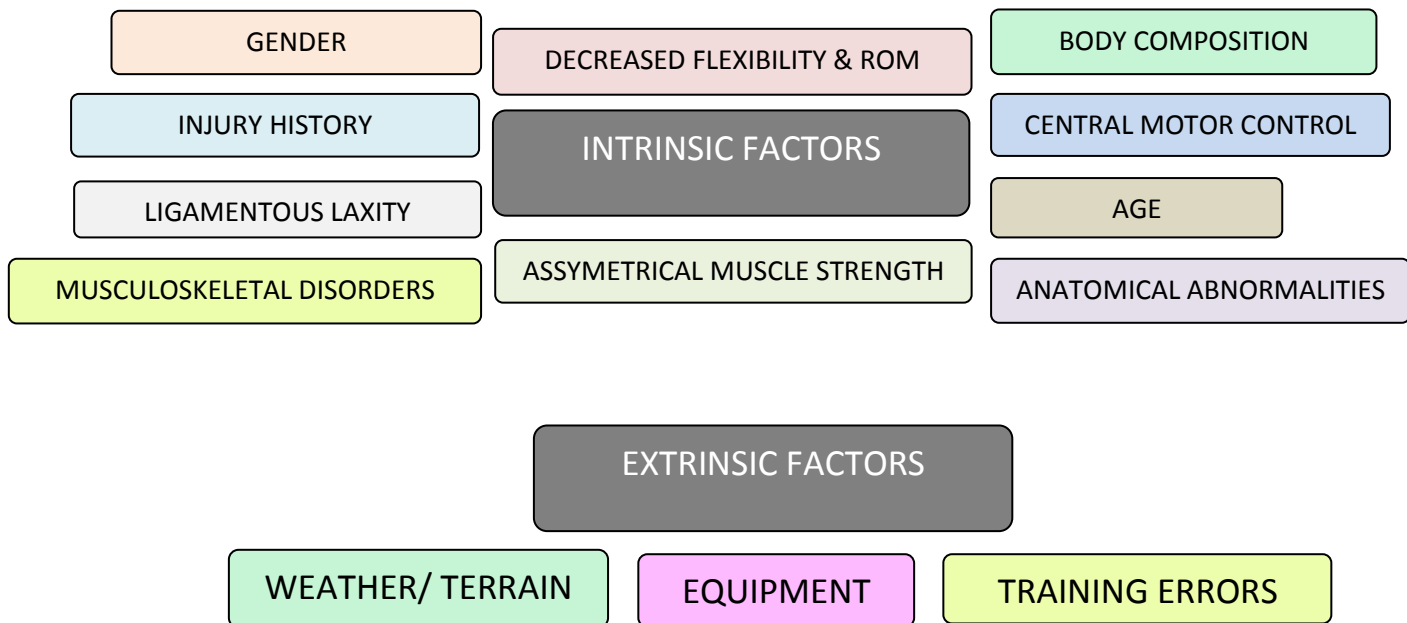
Internal/ external rotation



Rotator cuff stretch



## Intrinsic and extrinsic factors



## Recovery Techniques

### Nutrition

#### 2–3 Hours or More

Sandwich on whole grain bread, lean protein and side salad

Egg omelet and whole grain toast topped with avocado spread and a cup of fruit

Lean protein, [brown rice](#) and roasted vegetables

### **Within 2 Hours**

Protein smoothie made with milk, [protein powder](#), banana and mixed berries  
A cup of oatmeal topped with banana and sliced almonds

### **1 Hour or Less**

Greek yogurt and fruit  
Nutrition bar with protein and wholesome ingredients  
A piece of fruit such as banana, orange or apple

### **Post-game meals:**

Grilled chicken & sweet potatoes  
Tuna sandwich on low GI  
Chicken patsa  
Egg white omelette & avo on toast  
Rice Cakes & peanut butter  
Protein bar  
Fruit and nuts

Consuming 0.9–1.5 grams of carbs/kg of body weight and 0.3-0.7 grams of protein/kg body weight within 30-45 minutes after training/ event results in proper glycogen resynthesis and adequate muscle repair

## **POST GAME RECOVERY**

### **Cold Water Immersion (CWI)**

- swelling, circulation
- Psychological effect
- 2 X 5min @ 10<sup>0</sup> C
- Minimum 6min
- + than CWT
- Followed by elevation of legs for 8-10min

### **Active recovery**

- Pool session
- Removal of lactate
- “Maximum lactate clearance occurred during active recovery at intensities close to lactate threshold.”

### **Strapping**

- Protection against further injury
- Proprioception & awareness –pre event

## Foam rolling

- “Self-myofascial release” – limited evidence
- Blood flow & circulation
- Ischemic compression

## Gels

- Deep heat – pre event
- Iceman – post event
- Voltaren – both – contains anti inflammatory
- TransAct – flurbiprofen not evenly distributed

## **WHAT TO DO IF AN INJURY OCCURS**

Protection - Splints

Rest – Active rest

Ice

Compression - Garments/ strapping

Elevation – Above heart

\* Avoid anti inflammatories for first 48-72 hours - paracetamol

### **When to seek further medical care:**

- Immediate swelling/ bruising
- “Pop” “crack”
- Severe pain 8/10
- Concussion (Dizziness, confusion, nausea, headaches)
- Visual bony deformities

## References

ACSM, Exercise and Fluid Replacement (1996)

J. Gilchrist et al., Interventions to Prevent Sports and Recreation-Related Injuries

Kerksick et al., International Society of Sports Nutrition position stand: Nutrient timing. (2008)

Leeder et al., Cold water immersion and recovery from strenuous exercise: A meta-analysis. (2011)

N.G Versey et al., Water immersion recovery for athletes: effect on exercise performance and practical recommendations (2013)

Preventing Softball Injuries. Stop Sports Injuries. UF Orthopaedics and Rehabilitation

S. Taimela et al., Intrinsic Risk Factors and Athletic Injuries. (1990)

Q. Wang., Baseball and Softball Injuries. (2006)