Preventing sports injuries special relevance to team games

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3 Subdivisions of this session

1. Conceptual approach to injury prevention and applying prevention model to your team

2. Recovery

3. Importance of baseline assessment of each athlete and periodic medical assessment
Concept of mechanotransduction

• BODY MECHANICAL STRESS ADAPTS

• CAREFULLY MANIPULATE TRAINING PARAMETERS TO INDUCE ADAPTATIONS TO IMPROVE PERFORMANCE

• STRENGTH, ENDURANCE, NMCONTROL, FLEXIBILITY
DELICATE BALANCE OF
OVERLOAD AND
RECOVERY
recovery

Effective
• Greater level and quality of training
• Enhance performance

Inadequate
• Impair performance
• Results in injury, illness or burnout
A conceptual approach to injury prevention

An ounce of prevention is worth a pound of cure
Risk management: applying prevention models to your team

Systematic surveillance for injury

Pre and in season strategy planning sessions with coaches.

Regular screening of athletes and development of specific prevention program for team/athlete
Basic model by willem van mechelen

- Step 1
- Identify magnitude of problem theory / team
  - record incidence
  - severity
  - training
  - match exposure
Step 2
identify risk factors and injury mechanisms

- Periodic medical assessment [PMA]
- BASELINE ASSESSMENT
- TRAINING AND COMPETITION PROGRAMME
STEP 3
MEASURES
THAT ARE
LIKELY TO
REDUCE
RISK / SEVERITY

• CAUSE

• EVALUATE EFFECT OF MEASURES TAKEN .. CONTINUOUS SURVEILLANCE

• THIS IS STEP 4

• INJURY MECHANISMS IDENTIFIED IN 2ND STEP
• INTRINSIC RISK FACTORS
• MODIFIABLE OR NOT
• PREVIOUS INJURY

• EXTRINSIC RISK FACTORS
• VERY COLD, SNOW, FOOTWEAR

• Extrinsic may interact with intrinsic factors
The inciting event and injury mechanism

- Playing situation
- Player and opponent behavior
- Describe the whole body and joint mechanisms
- Each sport has typical injury pattern
Developing and initiating a targeted prevention programme
Utilize science

• Hamstring injury prevention plans

• Ankle injury prevention plans

• Acl injury prevention plans like fifa 11 plus

• SLAP prevention strategies
Walking Lunges
TREND TOWARDS DYNAMIC SCREENING OF ATHLETE TO FIND WEAK LINK IN STRENGTH FLEXIBILITY OR MOTOR CONTROL

FMS BY GARY COOK ET AL

US TENNIS ASSOCIATION HIGH PERFORMANCE PROFILE

9 + TEST BATTERY SWEDISH SPORTS CONFEDERATION
Assessing recovery

- General muscle function
- Specific performance task
- Extent of tissue damage [creatine kinase]
- Level of metabolite removal [blood flow, blood lactate] and VAS
- Athletes' perception of recovery [POMS]
Active recovery
After high intensity short duration exercise • MOST EFFECTIVELY DECREASES BLOOD LACTATE LEVELS AT EXERCISE INTENSITY CLOSE TO THE LACTATE THRESHOLD
After longer duration exercise

MASSAGE WITHIN 2HRS

HAS CELLULAR AND PSYCHOLOGICAL BENEFITS
STRETCH / SLEEP

SLEEP HYGIENE STRATEGIES SHOULD GET FOLLOWED
WATER IMMERSION / NUTRITION

- COLD WATER IMMERSION
- CONTRAST WATER THERAPY
- NO NEGATIVE BALANCE
- OPTIMISE MICRONUTRIENTS
- CARTILAGE SUPPLEMENTS
RECOVERY MODALITIES ALLOW TRAINING ADAPTATIONS

- Non loading exercises like under water or zero gravity
- Positive perception of recovery and thinking ahead
- ESP during high load massage /NMES / compression garments can help in feeling of well being
- Sleep and good nutritional practices are cornerstone
BASELINE AND PMA

WHY OVERUSE HAS POTENTIAL TO INJURE

TO MAKE SPORT SAFER

ALL SYSTEM CHECK UP ENOUGH ONCE IN 2 YRS
BASELINE TESTING

NEUROPSYCHOLOGICAL TESTING FOR ATHLETES INVOLVED IN CONTACT SPORTS.. CONCUSSION INJURY BASELINE

TEST TO MONITOR FATIGUE AND RECOVERY [blood / saliva biochemical, hormonal or haematologic tests, aerobic / anaerobic fitness tests, psychological tests]
Physical tests to be used as post injury reference values

- Muscle strength
- Single leg hop tests
- Vertical jump
- 30m sprint time
- GH ROM
CONCLUSION

- LOVE YOUR TEAM. UNDERSTAND STRENGTH AND WEAKNESS
- UPGRADE SURVEILLANCE. SMART TOOLS AVAILABLE
- BE GOOD SHEPERDS / FATHER OF TEAM. IDENTIFY WEAK AND ROBUST PLAYERS AND HANDLE. ASK FOR HELP
- CONSTANTLY MONITOR TEAM AND UPSKILL IN KNOWLEDGE AND IDEAS
Special thanks to Dr Sarala madam, AND hockey teams of India men and women to having given me better ideas about sports injuries.