SEESHA – KRCH CME SERIES

SPORTS MEDICINE – TIT BITS

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Changes in the Body

- Increase in metabolism (100% with high fever and 2000% with marathon)
- Oxygen debt (due to anaerobic metabolism)
- BP and HR increased to 200
To eat or not to eat is the?

- Exercise in empty stomach helps in reducing weight
  \{↑ adrenalin ↓ Insulin\}

- Eat for better performance

- Proteins : Carbohydrates = 4 : 1
Blisters

- Top layer separates due to friction
- Starts as hot spot
- Moisture wicking socks, tape sensitive areas
- Drain larger ones
Preparing the Big event 1

- One week for < 1 hour event & 2 for > 1 hour
- Alternate hard and easy days
- Each day decrease work out time by 20% and increase intensity by 15%
Preparing for the Big event 2

- For 2 week regime reach 70% level by a week and then follow 1 week plan

- McMaster study in Canada
  - 22% improvement with high intensity low vol.
  - 6% for low intensity and moderate volume
  - 0 for rest only group
Unsafe exercise habits 1

- Working through pain
- Not resting
- Doing only one type of exercise
- Uncontrolled sloppy movements
Unsafe exercise habits 2

- Unnatural joint movements
- Too much too soon
- Poor technique
- Lifting too much
The ten percent rule

- No more than 10% increase in activity per week
- Reduce the increase further as you reach higher levels
Exercise Science principles

- Principle of individual differences
- Principle of overload
- Principle of progression
- Principle of adaptation
Exercise Science Principles

- Principle of use and disuse
- Principle of specificity
Warning sings of serious injury

- Joint pain > 48 hours
- Tenderness
- Swelling

“He sprained his wrist inserting the exercise DVD.”
Warning signs of serious injury

- Reduced range of movement
- Comparative weakness
- Numbness
R.I.C.E. for first aid

- Rest
- Ice
- Compression
- Elevation
Safe to play after injury

- Stay fit all through the year and during injury
- No pain, swelling or restriction of movement
- 90% strength
- Exercise to 70% during injury
Common misdiagnosed injuries

- Concussion
- Achilles tendon rupture
- Anterior cruciate ligament injuries
- Scaphoid & stress fractures
Common psychological mistakes

- Focusing on only one perfect outcome
- Focusing too much on mistakes
- Over / Under arousal during competitions
Overcoming....

- Visualize / Mental rehearsal
- Focus on task not outcome
- Force a smile
- Do not care about outcome
Stress fractures

- Fatigue fractures
- Dietary menstrual problems
- Rest {don’t if painful}
- Hip fractures are serious, navicular difficult to diagnose
Strain and Sprain

- Strain = Ligament injury
  Sprain = Tendon / muscle injury

- Strain by fall & overstretching, sprain by twisting & pulling

- R.I.C.E for treatment
SMART goals for motivation

- Specific
- Measurable
- Adjustable / action oriented
- Realist
DOMS

- Delayed onset muscle pain and soreness {12 - 48 hrs.}
- Hypertrophy, strains and sprains
- Eccentric contraction => more pain
- Rest / Ice / wax bath
Topical pain relief medicines

- Salicylate creams for swelling not pain
- Capsaicin cream is effective (chilies)
- Counterirritants
- Safe but not very effective
Steroid injections

- Provide temporary relief of pain

- More than 4 injections are not recommended
Exercise induced Asthma

- Treatment is similar to regular asthma
- Mast cell stabilizers and leucotriene modifiers could be tried
Exercise & Osteoarthritis

- Caused by wear and tear
- Not directly related to exercise in youth
- Weight loss and exercise improve symptoms
Bicycles and erectile dysfunction

- True cycling does cause erectile dysfunction
- Pressure effect on nerves and vessels
- Older and heavier persons suffer more
Dehydration

- 2% decrease in body weight = 20% decrease in performance

- ↑ Heart rate, ↓ reaction time & impaired judgment

- 250 ml per 15 minutes of isotonic sol. {50% dil. Orange juice}
Heat

- Heat cramps {? Fatigue}
- Heat exhaustion and collapse
- Heat stroke
Heat stroke

- Rectal temperature > 41
- ↑ Pulse and respiration
- Low Blood Pressure
- Convulsions and coma
Cramps

- Dehydration, low sodium or potassium, or magnesium, calcium or carbohydrates
- Tight muscles
- Stretching immediately and massage after 48 hrs.
Sports Massage

- Pumping and increased permeability
- Stretching
- Breaking scar tissue
- Improving elasticity and microcirculation
Overtraining syndrome

- Lack of energy
- Insomnia and headache
- Decreased immunity
- Moodiness and compulsive need to exercise
Female athlete triad

- Menstrual alterations, disordered eating and osteopenia or osteoporosis

- ↓ estrogens and bone resorption => fractures

- Estrogen, Vitamin D, calcitonin, citolapam
Recent advances

- Arthroscopy
- Tissue engineering
- Targeted pain relief