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Friday, August 09, 2019

9:30 - 9:50 Medical Issues in Athletes

(Plenary)

Medical Issues in Athletes

Dr Chris Milne

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FACSEP

Medical Topics

- Fe deficiency
- Exercise induced bronchospasm (EIB)
- Tired athlete
- “Can I play/participate doc?”

Iron Deficiency Anaemia

- Intakes/losses/increased demand
- Treatment
 - Iron deficient non anaemic (IDNA)

Reduced Intake / Increased Losses

- Reduced intake
 - Vegetarians & vegans
 - Coeliac (decreased absorption)
- Increased losses
 - Menstrual
 - GI
 - GU
 - Haemolysis (“march haemoglobinuria)
 - Sweat (negligible)

Increased Demand

- Pregnancy & breast feeding
- Adolescent
- Athlete
- Altitude

Burden et al BJSM 2015

- Meta analysis
- Conclusion – Iron replacement improved iron status and aerobic capacity of iron deficient non anaemic (IDNA) endurance athletes
- Burden RJ et al. Is iron treatment beneficial in, iron-deficient but non-anaemic (IDNA) endurance athletes? A systematic review and meta-analysis. BJSM. 2015;49(21):1389-97.

IDNA

- Non anaemic
 - Female Hb > 115 g/L
 - Male Hb > 130 g/L
- Ferritin
 - < 15 mcg – Treat
 - 15-30 mcg – Treat with symptoms (fatigue, reduced exercise tolerance)
 - > 30 mcg – Review prn
 - Aim for 50 mcg in athlete in altitude
 - Note: Ferritin is an acute phase reactant

Treatment

- Aim to improve symptoms / failure to treat will eventually result in anaemia.
- Oral
 - Ferrous fumarate tab 200mg (65mg elemental)
 - Ferrous sulphate tab 325mg (105 elemental) or oral liquid 30mg (6mg elemental) per 1 mL
- IM
- IV
 - Iron polymaltose 100mg/2mL (Ferrum H & Ferrosig)
 - Ferric carboxymaltose 500mg/10mL (Ferinject) *Special authority
 - Need TUE if > 100mL saline



Exercise Induced Bronchospasm (EIB)

- Introduction
- Management
 - Non pharmacological
 - Pharmacological
- WADA

Introduction

- 5-20% in the general population
- Up to 90% of patients with symptomatic asthma
- Classically bronchoconstriction peaks 10-15 mins after exercise
- More common in cold and dry environments

Management – Non Pharmacological

- Avoid sedentary behaviour
- Improve cardiovascular fitness
- Warm up (“minutes”) to induce refractory period 60-90 mins before exercise
 - More than 50% of patients
 - Effect < 4 hours
- Nasal breathing
- Face masks (cold dry air in endurance events)
- Exercise during low traffic hours (urban athletes)

Management - Pharmacological

- First priority is to achieve optimum asthma control
- Caution tachyphylaxis with short acting beta agonists within a week of constant daily use
- Pre exercise (step wise approach)
 - Avoid NSAIDs
 - Salbutamol inhaler +/- spacer
 - Consider long acting beta agonist (e.g. salmeterol) for longer events (3-6 hours)
 - Mast cell stabilisers 5-10 mins prior to exercise
 - Sodium cromoglicate (Intal) 2-4 puffs
 - Nedocromil sodium (Tilade) 2 puffs
 - Leukotriene antagonists 2 hours prior to exercise
 - Oral Montelukast (24 hour effect)

WADA

- Not consistent with therapeutic use
 - Inhaled salbutamol maximum 1600 mcg over 24 hours
 - Urine salbutamol > 1000 ng/mL
 - Inhaled salmeterol maximum 200 mcg over 24 hours



"It's definitely not broken... but you may have pulled a hammy!"

Tired Athlete

- Main causes
- Tiredness history
- Athlete expectations
- Clinical pearls

Main Causes

- Overtraining syndrome
- Glandular fever
- Nutrition – iron, carbohydrate, protein
- Recovery & sleep
- “Life” – Work, study, relationships, social life
- Other medical causes e.g. cardiorespiratory GI, endocrine, medications etc.

Tiredness History

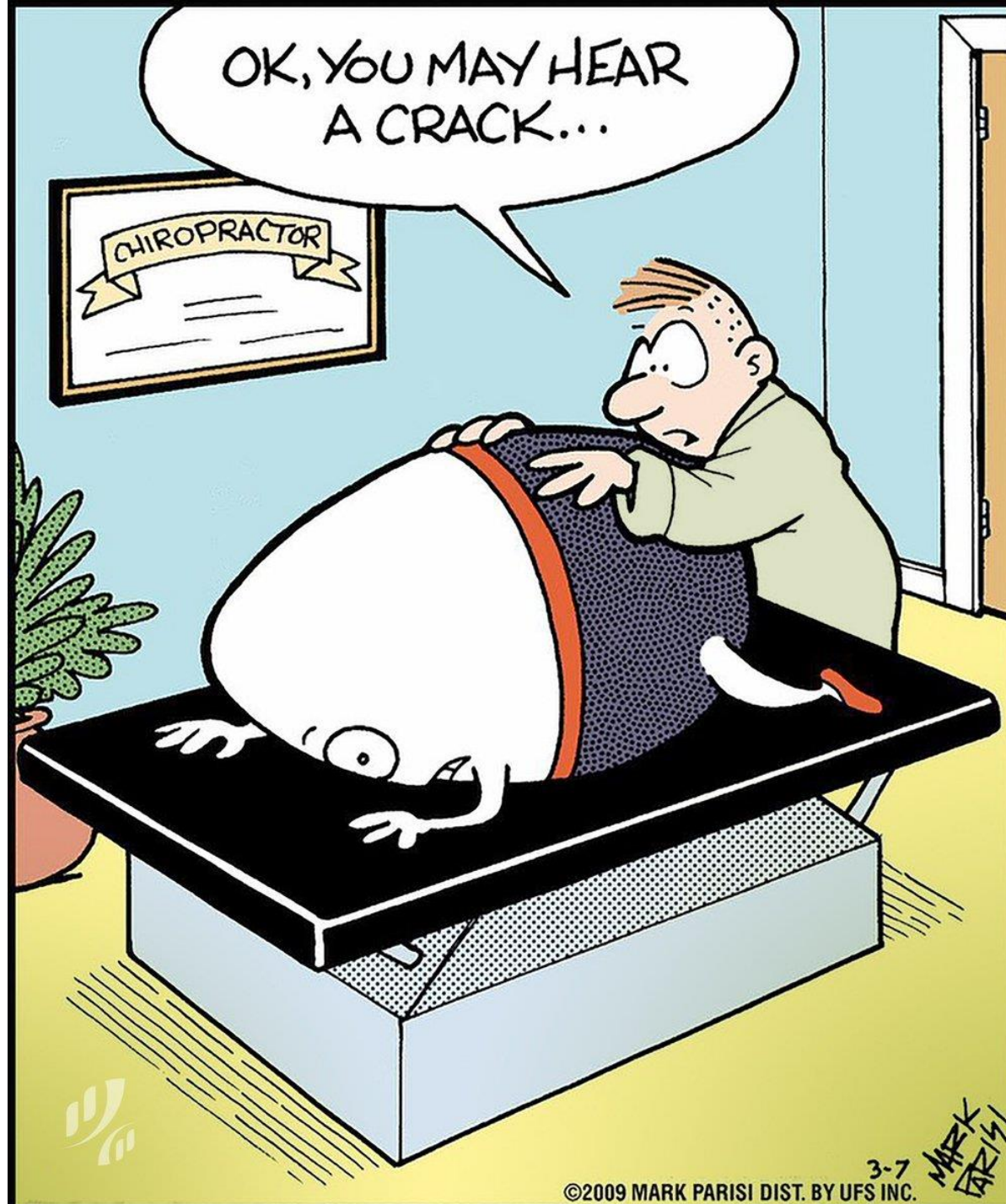
- How long?
- Intermittent or constant?
- Relationship to training i.e. during or after?
- Pattern – diurnal, location, weather
- Associated symptoms e.g. sore throat, post exercise cough or chest tightness?
- Preceding viral illness or overseas trip?

Athlete Expectations

- Fallon KE. Blood tests in tired elite athletes: expectations of athletes, coaches and sport science/ sports medicine staff. BJSM 2007;41:41-44
- Subjects: 22 elite coaches and 62 elite athletes from the Australian Institute of Sport
- Expectation for a blood test at the initial consultation for short term fatigue (< 1 week) was high among athletes (81%) and coaches (91%)
- Athletes expectations were increased if their performance was impaired by fatigue

Clinical Pearls

- Normal “healthy tiredness” usually easily reversed after “days” of reduced training or rest
- Take a training diary e.g. over a week and ask about recovery sessions and sleep
- Utilise allied health professionals e.g. nutritionists, psychologists, exercise physiologists, SEM Physicians
- There is no biochemical test for overtraining
- Those with overtraining complain of decreased performance
- Those with chronic fatigue complain of tiredness



“Can I play/participate doc?”

- Introduction
- “Neck check”
- BJSM 2017 study – Acute prerace systemic illness in Two Oceans Marathon runners

Introduction

- Is it safe for an athlete with recent or current symptoms of an acute illness to train or compete?
- Concerns
 - Potential for serious illness (myocarditis)
 - May prolong illness
 - May develop post viral fatigue
 - Increased risk of heat illness
 - Contagious?

“Neck Check”

- First proposed in 1993
- Limited research data support its use
- Localised (above neck) versus systemic (below neck) signs and symptoms

Above the Neck (Localised)

- E.g. rhinorrhoea, sore throat, cough from post nasal drip
- Trial 10-15 mins of light intensity exercise
- If well then can proceed with exercise as tolerated

Below the Neck (Systemic)

- E.g. fever, malaise, fatigue, myalgia, productive cough, heart rate > 10 bpm above normal, GI symptoms
- No participation until symptoms resolved with activity gradually resumed

BJSM Study

- Gordon L et al. Recent acute prerace systemic illness in runners increases the risk of not finishing the race: SAFER study V. 2017;51(17):1295-1300.
- Runners in the 56km or 21.1km 2013 and 2014 Two Oceans Marathon (n=53 976)
- Runners with an acute illness in the 3 days before the race invited to see SEM physician +/- nurse
- Grouped into localised vs systemic plus given participation advice

Results

- 172 runners with signs and symptoms of acute illness (0.3% of all race registrants)
- 43.5% of runners with an acute infective illness were non adherent to advice not to run.
- Illness group (n=134)
- Control group (n=43 425) 1.6% DNF
- Localised illness (n=84) 3.6 % DNF (relative risk 2.5)
- Systemic illness (n=50) 8.0% DNF (relative risk 4.9)
- Systemic illness < 24 hours before the race 11.1% DNF (relative risk 7.0)



"The doctor will see you now."

Thank you

- Questions?