



Highlights from this issue

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The Triumvirate

To celebrate Chapeau Geraint's amazing victory in the lap of France, *Thorax* dedicates this month's airwaves to the great sport of road cycling.

LE TOUR

The *Tour de France* is the world's premier cycle race and, once again, the winner was somebody with improbably large thighs. Not only is the vastus lateralis crucial for success in ridiculously long cycle races but it can also be a measure of critical illness. Endurance athletes tend to have high levels of functioning mitochondria, in contrast Puthuchery and colleagues demonstrate that patients with critical illness have impaired markers of mitochondrial function and levels decrease over time that was associated with increasing inflammation and impaired anabolic signalling (see page 926). It is interesting to consider that information obtained from the vastus lateralis may be as able to determine recovery from critical illness, as identify the winner of the Tour de France.

MARGINAL GAINS

Team Sky has won numerous cycling Grand Tours and Olympic medals through a philosophy of aggregating marginal gains. One approach to improve endurance is to improve inspiratory muscle strength through inspiratory muscle training (IMT) and this has been tried in both sporting and pathological situations with variable results. In this issue of *Thorax*, Charusisin and colleagues present a randomised controlled trial to investigate whether IMT augments the benefits of pulmonary rehab in COPD (see page 942). Although IMT did improve inspiratory muscle function it did not improve the primary endpoint, 6 min walk test, although there were gains in secondary endpoints including cycling endurance. Maybe this is one for Team Sky, but will it work for COPD? Check out the editorial

by Professors Polkey and Ambrosino to find out (see page 900).

THERAPEUTIC USE EXEMPTIONS

Therapeutic Use Exemptions or TUEs are common in the resource rich environment of professional cycling, and they have gained considerable notoriety recently with Sir Bradley Wiggins getting famously caught up in a TUE storm. In Uganda, the effects of the resource limitation are reported quite dramatically! Kirenga and colleagues describe a prospective study of patients with asthma and show that nearly 60% of patients had at least one exacerbation in the first year and nearly a third had three or more exacerbations and 3.7% of patients died (see page 983)! Poor asthma control and impaired lung function were unsurprisingly associated with poor outcomes. Maybe Team Sky should pour some of their resource into helping Ugandan patients with asthma? They may not get a winner of the Tour de France but 3.7% pro-cyclists do not die of asthma!

FAIR WEATHER CYCLISTS

For the hardy cyclist, Winter requires woollies, leg and arm warmers, rain jackets, along with thermal gloves and overshoes. Summer not so much, with some tight fitting lycra covering the torso sufficient. However, there is little more frustrating in the world of cycling than setting out in the morning and realising that the temperature you expected was wrong and ones clothing choice incorrect. Freezing or sweating for 100 miles can be quite unpleasant. However, temperature variability appears to be more than an annoyance for patients with respiratory disease! In this issue, Sun and colleagues describe the effects of temperature variability on the outcomes of respiratory disease and show that with a 1°C increase in temperature variability in Winter the hazard ratios for admission increases by over 15%, although similar observations

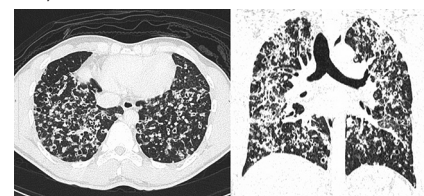
were not apparent in the summer (see page 951). Its clearly not just cyclist who get caught out by the Winter weather!

SPRINTERS TAKE THE BUS

The idiom 'horses for courses' is well known in sport, and in cycling a sprinter will never win a mountain stage and indeed they usually don't even try and they form a gruppetto just to ensure they make it to the finish. However, the concept understanding difference and personalising medicine is only just making it into the mainstream of respiratory and critical care medicine. Pinder and colleagues use a novel approach to focus treatment in patients with evidence of impaired neutrophil phagocytosis (see page 918). The aim of the study was to determine whether treatment with GM-CSF improved neutrophil phagocytosis in the critically ill. While the primary endpoint of effects on mean neutrophil phagocytosis were not met the proportion of patients with >50% neutrophil phagocytosis did increase. These data suggest that there may be 'horses' for GM-CSF 'courses' although identifying who they may be, before the race is run, once again remains the challenge.

A HEARTY BREAKFAST

Before a long cycle ride a hearty breakfast is required and our personal recommendation is a nice big bowl of porridge! Some people prefer cheerios but even then they should not be found in the lung (see page 994).



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