Warm up

Rage against the machine
P McCrory

The influx of lawyers into sport continues. We are all becoming familiar with the concept of the “football dad”, whereby a parent pushes his child to play better, abusers referees and berates the coach. All of this is in the hope that his child will achieve sporting success and perhaps a lucrative future professional career. This becomes all the more tempting when teenagers are signed for professional US teams, with sign on fees in excess of $US 1 million. In the case of some sports like NBA basketball, sign on fees from collegiate players are measured in the tens of millions of dollars.

With such huge financial and psychological burdens, the pressure to perform is huge. Sadly, in far too many cases, this pressure turns individuals to violence. In Canada, the concept of “rink rage” is well known. One in three of the

The big blue revisited
P McCrory

For those interested in extreme sports, we have a new candidate—extreme high altitude skydiving. US Air Force Captain Joe Kittinger, who jumped out of a balloon at 102 800 feet in 1960, holds the current world record. Kittinger apparently went into a spin on his stratospheric jump and blacked out before his chute opened automatically. In 2005, champion skydiver Cheryl Stearns will make a jump from 130 000 feet.

A few facts for the tech heads. The jump will be made from a helium filled balloon with an open gondola. The balloon ascent will take about 2½ hours to reach 130 000 feet under perfect weather conditions. The ride down will take about 10½ minutes, with about half that time in free fall. That is, of course, assuming nothing goes wrong. It is estimated that Cheryl will reach Mach 1 approximately 47 seconds into her free fall, with a maximum speed of 1150 km per hour. Depending upon her body position during free fall this could be exceeded and it is unknown whether she will produce a sonic boom in the process. The air temperature at 130 000 feet will be approximately 0 °C, although when she comes out of the stratosphere into the ozone layer (above 70 000 feet) it will be warmer than that until she reaches the zone between 30 000 and 70 000 feet, where it will be considerably colder (between –35 and –70 °C). Fortunately her suit will be heated. The canopy will be deployed at 7 000 feet, by which stage her speed should have slowed to 240 km per hour.

In terms of safety systems, she has a drogue chute that will deploy if the spin rate exceeds a set level, as well as an altitude controlled automatic chute release in case she blacks out. It is worth noting, however, that an accidental chute deployment too high will leave her with insufficient oxygen to survive the descent, and in such an eventuality she may need to cut away the chute and deploy the reserve at a safer altitude. In addition, she will be wearing a pressure suit that provides heat, oxygen, communication and basic life support at high altitude. The suit itself, fully equipped, weighs 40 kg.

Although this sounds a dangerous jaunt, Cheryl is one of the most accomplished skydivers ever, holding more than 30 world records. She is a professional pilot for US Airways and a US army reservist, being on the US Army Golden Knights parachute team. She is also the first woman to complete high altitude low opening (HALO) parachute training. This is the same training received by US Ranger and Delta forces and the British SAS.

Although this event is being filmed for US television, by working with NASA specialists, the knowledge of high altitude environments is crucial to potential high altitude escape systems that may be envisaged in Space Shuttle or other high altitude aircraft malfunctions. If only other sports had such useful research outcomes.

Br J Sports Med 2004;38:105

REFERENCE
1 Editorial. Rink Rage. The Economist 2003
11 January 2003;38