- 60 Shimokata H, Muller DC, Andres R. Studies in the distribution of bodyfat III. Effects of cigarette smoking. *JAMA* 1989;261:1169-73.
- 61 Istvan J, Cunningham TW, Garfinkel L. Cigarette smoking and bodyweight in the Cancer Prevention Study I. *Int J Epidemiol* 1992;21:849-53.
- 62 Steege JF, Blumenthal JA. The effects of aerobic exercise on premenstrual symptoms in middle-aged women: a preliminary study. *J Psychosom Res* 1993;37:127-33.
- 63 Aganoff JA, Boyle GJ. Aerobic exercise, mood states and menstrual cycle symptoms. *J Psychosom Res* 1994;38:183-92.
- 64 Sternfeld B. Cancer and protective effect of physical activity: the epidemiological evidence. *Med Sci Sports Med* 1992;24:1195-209.
- 65 Levi F, La Vecchia C, Negri E. Selected physical activities and the risk of endometrial cancer. *Br J Cancer* 1993;67:846-51.
- 66 Vihko VJ, Apter DL, Pukkala EI. Risk of breast cancer among female teachers of physical education and languages. *Acta Oncol* 1992;31:201-4.
- 67 Bernstein L, Henderson B, Hanisch R, Sullivan-Lalley J, Ross R. Physical exercise and reduced risk of breast cancer in young women. *J Natl Cancer Inst* 1994;89:1403-8.
- 68 Tepper R, Neri A, Kaufman H, Shoenfeld A, Ovadia J. Menopausal hot flushes and plasma β -endorphins. *Obstet Gynecol* 1987;70:150-2.
- 69 Shoupe D, Lobo R. Endogenous opioids in the menopause. In: Speroff L, Lobo R, eds. *Role of opioid peptides in reproductive endocrinology. Seminars in reproductive endocrinology. Vol 5, No 2*. New York: Thieme Medical Publishers, 1987:199-206.
- 70 Aleem A, McIntosh T. Menopausal syndrome: plasma levels of β -endorphin in post-menopausal women measured by a specific radioimmunoassay. *Maturitas* 1985;7:329-34.
- 71 Cumming D, Wheeler G. Opioids in exercise physiology. In: Speroff L, Lobo R, eds. *Role of opioid peptides in reproductive endocrinology. Seminars in reproductive endocrinology. Vol 5, No 2*. New York: Thieme Medical Publishers, 1987:171-79.
- 72 Owens JF, Mathews KA, Wing RR, Kuller LH. Can physical activity mitigate the effects of aging in middle aged women? *Circulation* 1992;85:265-70.
- 73 Meilahn EN, Becker RC, Corrao JM. Primary prevention of coronary heart disease in women. *Cardiology* 1995;86:286-9.

Figure 1 White water slalom course, Nottingham.

Bugs and boats: an athlete's view

As an athlete involved in a water sport many people ask if I am worried about Weil's disease (leptospirosis) or if it occurs often in canoeing.

Most of our elite athletes train twice a day on the white water slalom course in Nottingham (fig 1), but may also use water pools, canals, or rivers as flat water training sites. Weil's disease is more likely to be caught when canoeing on stagnant water, so there is some risk of exposure. For regular water users there is the possibility of subclinical infection not severe enough to be recognised. I know of only one suspected case of Weil's disease within the team, but this was never positively diagnosed.

Our biggest worry is the common cold! It disrupts training and everyone is concerned about banned drugs, so we usually take nothing, which makes you a social outcast as no one wants to catch it!

As highly trained athletes our immune system seems to be under stress, and we seem to be susceptible to any illness lurking around. It may be that canoeists catch these bugs in the aerosol produced from the water, develop cold symptoms and later a chest complaint. On the other hand, we do not seem to pick up any gastrointestinal illness from the river water, even as the water levels change through the year.

The biggest worry is developing a respiratory problem at a selection race or important international event. When 100ths of a second may separate you from a place in the team or a medal, feeling 100 per cent fit is essential. We all try the natural remedies, such as vitamin C, but is there any more we might do to keep these bugs at bay? Do other water sports have similar problems?

SHAUN PEARCE
British Canoe Slalom Champion