

markers were then moved a series of standard distances apart, relative to the actual size of the subject's car.

The average percentage error was calculated, for both body width and gap width, on each subject's responses.

Subject's body weights and heights were also measured and recorded, as was the actual width of their car as reported by the manufacturer. Women were classified according to whether or not they were within the premenstrual week. Subjects also completed the Crown-Crisp Experiential Index, a measure of experiential status providing scores on six scales named respectively *anxiety*, *phobic*, *obsessionality*, *psychosomatic*, *depression*, and *hysteria*.<sup>3</sup> Also recorded were age of car, duration of ownership, and period driving licence held.

For analysis of data on continuous variables Pearson's correlations were used. For ordinal variations Kendall's tau was used. For analyses bearing on the hypothesis, significances were sought at the one-tailed level.

## Results

In men car gap error is significantly correlated with error in reporting on shoulder width ( $p < 0.05$ ), in estimating width of neutral object ( $p < 0.05$ ), and in estimating size of car ( $p < 0.05$ ).

Mean error in overall body width perception was most highly correlated with mean error in waist width perception in women ( $p < 0.01$ ) and shoulder width perception in men ( $p < 0.05$ ). These overall errors were also significantly correlated with errors in estimating the size of an inanimate object ( $p < 0.05$ ) and car width when outside it ( $p < 0.05$ ). Drivers with considerable experience were significantly more correct than others in reporting their body widths ( $p < 0.05$ ).

In both men and women the narrower the car the greater the error in estimating gap size ( $p < 0.05$ ).

In women the gap error is significantly correlated with measured height ( $p < 0.05$ ) and shoulder width ( $p < 0.05$ ).

In people over the age of 22 the lower their weight, the thinner they were ( $ht/wt^2$ ), and the narrower their hips were, the greater their error in estimating gap width ( $p < 0.05$ ).

There were no significant associations between personality, neurotic status, premenstrual status, car age, and duration of ownership on the one hand, and gap-width error on the other.

## Discussion

The conclusions to be drawn from this study are of profound importance, although other variables not taken into account here—for instance, actually having to act on one's judgment regard-

ing gap size,<sup>4</sup> hangover effects of previous night's medically prescribed hypnotic, alcohol consumption, and number of shopping days to Christmas—may occasionally also be implicated. Meanwhile it seems to be likely, for instance, that tall, thin women, especially if aged 22 or more, experienced in driving and perceiving their shoulders to be mightier than they are, will accumulate an excess of dents to the rear of their vehicles. These will be inflicted by cars driven by short, chubby, narrow-shouldered ladies or by experienced male drivers who underestimate the width of their shoulders, perceiving themselves thereby as underendowed with "macho" blessings. The same fate of assault from the rear awaits men who think their shoulders to be bigger than they are. All such people should avoid purchasing rear-engined vehicles. On the other hand, the man perceiving himself as narrower than he is, like the diminutive plump woman, will continually batter the front of his car as he attempts to struggle through the eye of a needle or otherwise collides with the idiot in front of him who has unexpectedly halted before a gap that in his or her knowledge is actually the size of the proverbial barn door. Clearly common wisdom has perceived this problem, thus allowing our leaders of great stature to survive through the apparent luxury of back seat driving.

Apparently such perceptual variation does not relate to mental state or to age of car. Moreover, Nature's hurt at failure to conceive in women seems not to affect such judgment, although at this time changes in body shape and body shape perception are said to operate, and social responsibility and accountability have also recently been judged to be diminished.

Finally, in such a multivariate study as this some such apparently significant relationships as have been shown above may yet prove to be spurious. Further study within this consumer research field is clearly indicated.

Requests for reprints to Professor Crisp.

## References

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# SHORT REPORTS

## Moon-boot foot syndrome

Travellers through the capital's major termini during the winter cannot fail to notice that it has become fashionable to wear thermally insulated boots on skiing holidays. Because of the difficulty of packing such bulky boots and the comfort of the "moon boots" (or the shaggy-haired version known as "yeti" boots), it is often prudent to wear the boots during the journey to and from the ski-slopes. I report here a personal case of "moon-boot foot syndrome" associated with prolonged continuous wearing of thermally insulated boots.

### Case report

Recently my family and I travelled to and from Austria by coach and sea. Air travel was not available. The return journey lasted 23 hours, and despite an initial desire to see the countryside it was mainly spent in trying to sleep. A preliminary waiting period of three hours and a final two-hour car journey resulted in the thermally insulated boots being worn continuously for about 28 hours. On eventual removal of the boots standing was found to be very painful with a sensation akin to that of standing on a coarse cheese grater.

The soles were white, swollen, wrinkled, and very tender to pressure. The burning painful sensation and the signs were confined to the soles. There was no systemic disturbance. I am glad to report that bed rest for eight hours and simple analgesics resulted in complete resolution of the symptoms and signs.

When the boots were dismantled the plastic foam linings were soaked in moisture—presumably sweat. These linings were enclosed in plastic bags, with a loosely fitting elasticated top.

### Comment

The cause of the problem appeared to be exposure of the feet to a closed miniature environment that was both hot and progressively moist. The feet had remained dependent and the legs had been restricted by the confines of the seats in the coach, car, or ferry.

This syndrome superficially resembles both trench foot and warm water immersion syndromes,<sup>1,2</sup> which are associated with water-logging and swelling of the stratum corneum. Trench foot (well known among the military for some 160 years), however, is associated with cold immersion of the foot for more than 48 hours, constricting garments, trauma, exhaustion, and dehydration.<sup>3</sup> Warm water

immersion foot (WWIF) is also known as tropical immersion foot<sup>1</sup> or paddy-field foot<sup>2</sup> and became recognised relatively recently as a complication of prolonged immersion of the feet in water in the warmer areas of conflict such as Vietnam or the Philippines. It differs from trench-foot in not being associated with systemic disturbance, recovering rapidly (in one to three days), and the onset of the syndrome being hastened by increase in temperature. There is no femoral lymphadenopathy or fever, and the affected area is confined to the plantar surface of the foot. Although the moon-boot syndrome has features in common with tropical immersion foot, it differs in that the foot was not immersed in water and occurred in a cold climate.

From this experience, two recommendations are made: firstly, whenever possible thermally insulated boots should not be worn continuously for long periods and, secondly, if prolonged wearing is unavoidable a search should be made of the interior of the boots and any impervious layer that might enclose the foot should be removed. The more drastic preventive measure suggested<sup>1</sup> for tropical immersion foot of spreading silicone grease over the feet each day should not be necessary among well-nourished, hydrated, and healthy skiers.

<sup>1</sup> Allen AM, Taplin D. Tropical immersion foot. *Lancet* 1973;ii:1185-9.

<sup>2</sup> Anonymous. Paddy-field foot. *Lancet* 1967;i:1043.

<sup>3</sup> Beeson PB, McDermott W, Wyngaarden JB, eds. Immersion foot (trench foot). In: *Cecil textbook of medicine*. 15th ed. Philadelphia: W B Saunders, 1979:1309-10.

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## Lateral epicondylitis presenting as jailer's elbow

Lateral epicondylitis is a common and usually self-limiting condition which rarely leads to prolonged disability. As Cyriax commented as long ago as 1936,<sup>1</sup> however, a protracted course is not unusual in those cases where the condition develops as a result of occupation. The following two case reports illustrate an unusual occupational hazard leading to protracted discomfort.

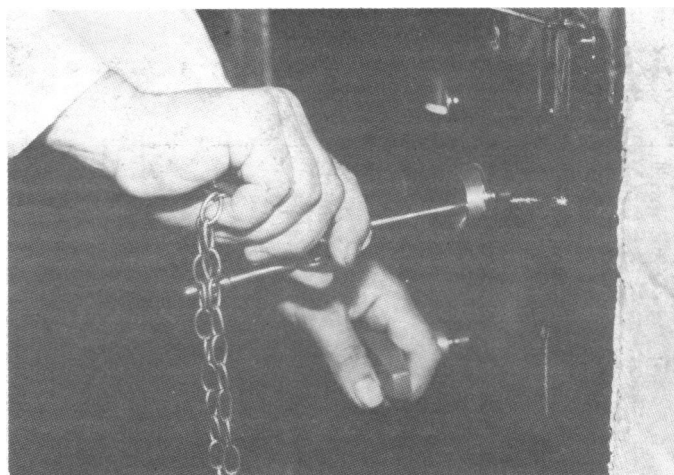
### Case reports

**Case 1**—A 47-year-old previously fit police constable was employed as a warrant officer at a magistrates' court. His duties included acting as jailer on three or four days a week, and this work entailed opening and closing the cell doors up to 80 times a day. Towards the end of 1979 new doors were installed in the cells, the locks of which were extremely stiff. Within six months he started to complain of pain in the left elbow, and by the autumn of 1980 the symptoms were so severe that he was referred to an orthopaedic surgeon, who diagnosed tennis elbow. He was referred for physiotherapy. His symptoms persisted and a subsequent local steroid injection gave only transient relief. Finally, in June 1981, an operation was performed, the extensor origin being detached and the orbicular ligament being partially divided. The symptoms slowly settled over the ensuing nine months. As a result of this problem he was off work for a total of 22 weeks and was on light duties for 16 months during a period of two and a half years.

**Case 2**—A 45-year-old policeman employed as a warrant officer at the same magistrates' court presented in December 1981 complaining of pain in the right elbow. Examination showed moderately severe lateral epicondylitis. The elbow was injected with hydrocortisone with good relief of symptoms. By March 1982 his symptoms had recurred and he mentioned spontaneously that the most troublesome activity was the opening and closing of cell doors, which he had been doing more frequently since his colleague (case 1) had been placed on light duties. After two further local steroid injections, and having been advised to avoid further cell duties, the problem disappeared.

### Comment

Opening this cell door required the simultaneous turning of a handle and a key (figure). No problem was experienced until the doors were replaced, whereupon two officers employed on the same duties developed similar lesions. The problems apparently disappeared after attention to the locks.



Method of opening cell door.

Repetitive gripping and twisting movements, as performed in opening the cell doors, may predispose to the development of epicondylitis. The cases are important, however, not so much as an illustration of a rather bizarre occupational hazard but rather because they show that even a relatively trivial condition may lead to prolonged disability. The cases are reported in the hope that greater awareness of the occupational hazards of such repetitive manual tasks may decrease their incidence and the consequent litigation between employee and employer.

I thank Dr A O Frank and Mr I Busfield for allowing me to report these cases.

<sup>1</sup> Cyriax JH. The pathology and treatment of tennis elbow. *Journal of Bone and Joint Surgery* 1936;18:921-40.

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Madness, from Charles Bell's *Essays on the Anatomy of the Expression in Painting*, 1806.