Olympic athletics medical experience,
Seoul – personal views

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The medical team to look after 107
track and field athletes and 23 officials
consisted of two doctors and four
physiotherapists.

After two years’ prior fact-finding,
detailed planning for the games started
many months in advance. With final
team selections only four weeks before
travelling, all hopefuls had to complete
appropriate immunizations, fitting in
with training schedules and competi-
tion commitments as best they could.
Notification to probables had been
circulated one year earlier, plus an-
nouncements in athletics magazines.

We were advised that Japanese B
encephalitis, a mosquito-borne infe-
tion was a particular local risk because
of the rural nature of the training camp
in Japan, surrounded as it was by
paddy fields. The athletes acclimatized
there for two weeks in September and
October. The vaccine was expensive
and not freely available. The initial sole
suppliers, the army, transferred the
operation to a civilian supplier who
doubled the price. Uptake was partial
but no illness resulted, though mos-
quitos and other insect bites were a nui-
sance. Hepatitis B vaccine was donated
and we recommended it due to the
wide international travel undertaken
by our athletes.

A team booklet was produced,
which gave advice on relevant topics
including immunization, jet-lag, accli-
matization, food and drink, a warn-
ing about AIDS and a suggestion as to
a personal travel kit. It was a deliberate
policy not to encourage self-medication
since we thought it reasonable and
prudent to exercise as much control
as possible on athletes’ medications.
Anyone with a resting pulse of five to
ten counts higher than the norm was ad-
vised to see the doctor. Crutches seem
to be an almost inevitable necessity on
long team trips. They are awkward to
carry and the donation by the Bath In-
stitute of Medical Engineering of small
but ingenious folding crutches carried
in a case was a godsend.

All team members required medical
examination before travelling to Seoul,
but selection only took place four
weeks before departure and our
athletes were then spread worldwide.
The logistics of accomplishing these
medications was something of a night-
mare with our doctors pursuing
athletes at every available opportunity.
Happily many of the athletes’ GPs
appeared willing to complete the forms
free of charge. The examinations of-
fered another opportunity to examine
the various health foods, vitamins and
protein supplements which athletes
took.

Physiotherapy treatment at Seoul.
The facilities at the training camp were superb, with English food provided in a first-class restaurant that we shared with the USA track and field team. Acclimatization was helped by Temazepam. Some allergic rhinitis was due to the deodorant wick placed in the chalets. However, boredom was an important factor. The availability of a wide variety of physical activities, including tennis, volleyball, table tennis, cycling, swimming etc. did add to the number of over-use injuries in athletes attempting unfamiliar activities, but overtraining was the major problem.

The usual coughs and colds appeared, but one athlete arrived pyrexic off the plane, with shoulder pain on respiration. His lungs were normal to auscultation and a chest x-ray was also clear. He was isolated, treated with antibiotics on the ‘We have only got 14 days until his race and can’t afford any delay’ basis: 48 hours later he felt better but was tender over the liver. All blood tests, including LFT’s were normal. We were unable not to wonder if 11 days to start time, but walking to breakfast made him short of breath with some abdominal pain. Fortunately the aerobics centre could do a stress ECG, and no abnormality was found. But – how soon, how fast, to allow a return to training with now only nine to ten days to go? The athlete reached the second round of his event. He was subsequently found to have a high Coxsachie titre.

An athlete with a stress fracture of the sacroiliac joint produced by increased speed training loads after seven weeks should be trained in a wet jacket. A tightrope of ‘when to introduce running and how much’ was walked by athlete, coach, doctor and physio. The athlete completed the heat but failed to make the final.

Pain appeared over the navicular in another athlete and a bone scan in a Japanese hospital confirmed a stress fracture. The athlete was recommended not to train or take part in the games, but insisted on her right to run in one heat. We did contemplate having her withdrawn but a conference with headquarters orthopaedic surgeons felt this was a little extreme. There were still some problems several months later with this athlete so perhaps that first eight weeks of rest is vital for adequate healing.

A foreign athlete with a clinically obvious stress fracture of the tibia was recommended not to run. A few weeks previously his father had had a coronary and the only thing keeping him going was the thought of seeing his son on television in the Olympics. This athlete started his race but dropped out after a few laps. Who was right? The ethics of each case are individual and the athlete’s own needs must hold some sway.

How should we handle an athlete who is under a research dietetics department and has had one intravenous infusion of vitamins from them and now had two more to go? The IV injections must be given over 35/40 minutes to prevent reactions and we only have a bedroom or a weights room as a surgery. The dietetics department is a reputable university department so bedroom, butterfly IV needle and vitamins are provided. Fortunately the athlete felt the whole procedure too complex and the benefits too nebulous to have the third treatment!

Chronic problems of several months’ duration are now expected to be healed in a few days: the chronic rectus femoris strain where all one can do is to maintain stretching, ultrasound and to reintroduce running as a skill, building up to speed a few days before the first heat; the scar tissue that ruptured – healing, demanding rest in one position, the opposite in the other.

With only a few days before competition, such cases require hard work from the whole physiotherapy team, psychological support from the medical team and co-ordination with the coaches to explain training.

Several athletes arrived with pre-existing conditions, some of which got worse, others improved. It is probably fair comment to say that it is misplaced optimism to hope for Olympic level recovery in a significant injury occurring six weeks or so before the event. However, the limitation facility merely to appear in an Olympic stadium is so fierce that a decision to withdraw three to four weeks before the event with recovery in sight is almost impossible.

Finally, one athlete flew out his own doctor to try an unpublished form of treatment. We in the medical team were expected to take responsibility for the consequences of this treatment, even though on closer questioning, it appeared that no trials were being conducted to establish the validity or not of the treatment. It was agreed that we could not stop athletes having treatment from whom they want, but equally we could not take responsibility for that treatment, especially if no published papers or trials had been written about the treatment. This ethical dilemma solved itself when it became obvious that the side effects of the treatment balanced against training at that stage were incomparable.

The physiotherapy area facilities were very good – with large, well lit room, access to ice, lots of towels and hand washing facilities in the room. We had on loan two portable treatment couches, two combined treatment units (ultra-sound and interferential), one combined unit, one laser and the BAAB’s own ultrasound. All the electrotherapy equipment except the last mentioned was mains or rechargeable and the battery operated. We also had a step-down transformer which faulted after two days of non-stop action charging up the athletes’ compact disc players!

Recommendations for future training camps:
1. More advice needs to be given to coaches and athletes on warm-up and cool-down procedures and the use of showers and jacuzzis to relieve stiffness.
2. Massage – we carried out an enormous number of non-specific massages. We believe in the proper use of massage and fully appreciate its psychological benefit. We really wonder if two, in some cases three, massages a day are necessarily beneficial to the athlete or whether they are the best use of a physiotherapist. Are they the best way of helping the athlete? The whole area of massage must be studied in order to ensure that we are providing the best possible physiotherapy support in a training camp.

Seoul

Management had planned our arrival in Seoul after the opening ceremony to reduce pre-competition stress. The medical team divided into two – one doctor and two physiotherapists in the village, one doctor and two physiotherapists at the warm-up track. The medical village was a converted Olympic village was the lower floor of a flat, comprising one large room with three treatment couches, a small room which doubled as doctor’s surgery and sick bay. Loads of towels were available, ice was readily available as we had a fridge in the main room. Our battery operated equipment proved invaluable as the electrical facilities were charged up for the following week.

The track team went down with the first athletes usually catching the 6.30 am bus. Changeover of the two teams took place at about 7.30 am and the track team returned after warm-down anything between 6.30 to 11.30 pm to help with evening work in the village. Familiarization with transport, ice and drink supply and the stadium facilities took place as soon as we reached Seoul.

Facilities for medical and physiotherapy care at the Olympic stadium were abysmal. No accommodation for accompanying medical teams had been provided, and all treatment was carried out in the village.
Physiotherapy treatment at Seoul.

Osteitis pubis

The minor problems kept appearing, but one of the most difficult was to arrive for the changeover of medical teams at about mid-day to be greeted by ‘Doc’ X cannot warm-up for the Olympic final without getting abdominal pain. Oh, and by the way, you’ve got just eight minutes to final call-up! The athlete was too experienced to be destroyed by nerves, had no bowel symptoms, and apparently had had mild ache for two weeks since hard training in another holding camp in Japan. The supra-pubic site of pain suggested traumatic osteitis pubis, symphysis which was confirmed by pain on squeezing a fist between the knees and resisted long and flexed adductor contraction. The only way to get him into the final would be a local injection into the pubic symphysis. What harm?

After a rapid discussion with the athlete, we decided to inject the local anaesthetic. The team manager booked him through the first call and his final fitness test was completed in the call up system, minutes before he went on track.

The problem was not over because X wanted to run in another event in two days time – four hard races back to back – but at least we had two days’ rest. Would the hydrocortisone work?

Heat 1: Warm up; No trouble until final sprint work. The system is geared up – local injection. He qualifies.

Heat 2: Has the steroid worked? No. Once again final warm up causes pain. We stayed off this session with local, then perhaps the steroid will have had time to work.

Semi-finals: Once again we have the same problem but this time in a long talk with X he is told that enough is enough and that he could retire now with a clear conscience. What else has he to prove and to whom? X points out that he has trained for years to climb this particular Everest. What hazards can be envisaged?

Traumatic osteitis pubis means he will be out of athletics for some 7 to 12 months anyway. Most soccer players after this particular condition have to learn to play with some degree of ache. If it is going to respond to a joint tendon repair it will be cured by operation without injections hazarding the situation. And finally there are those few but persistent groin strains which remain undiagnosed and have never ever been injected. X was sent...
off to talk with his coach and his manager, both of whom pointed out to us that he had received several poison pen letters before the games and would be subjected to very severe criticism in Great Britain if he withdrew and that he definitely should be helped to compete. This attitude was very surprising from his coach who had always put his athletes' health before results, so therefore carried more weight. As a team, athlete, manager, coach and doctors we decided to let him try for the ultimate in sport. There could be no substitute individual, there could well be no other chance for Olympic gold in the future. So a further injection of 1 per cent Xylocaine 1 ml for the semi-finals and the finals was administered that enabled him to get an Olympic medal.

On the semi-finals day, he had shown three non-infected looking bites on his hip and large inguinal glands had appeared. Arrangements were made for him to be assessed at home by an orthopaedic surgeon who lived nearby. X duly returned home arrived sore and unwell – with an ESR of 60. This settled with bed rest. The only other positive finding was a raised anti-staphylococcal titre. That the injections had infected him was considered likely but the surgeon had noted that he had no pain or tenderness locally associated with the pubic symphysis, which suggested that the insect bites and glands must be considered significant. X was able to resume training some four to five weeks after the games.

The other medical problems became run of the mill, but two further events were of interest. One injured decathlete threw a personal best in the javelin and then calculated the reality of running with this injury versus the running times required to get a medal. All calculations were correct apart from the unknown – a personal best in the 1500 m from an unexpected source! The second was picking up our experienced marathoner, dehydrated and failing to sweat. This race should not have been run in the heat of the day just to benefit American TV. The drinks at the feeding stations had stood in the sun so long that they were hot. To cap it all, eight marathoners were selected for dope testing! At least the two and a half hours wait gave time to drain the subungal haematoma, treat the blisters and rehydrate the athletes, who at the end had had enough and wanted to return to the village, but there was no organized transport at that time! So we joined the crowds outside to queue for a taxi and glanced over our shoulders to see the fireworks of the closing ceremony.

Thus the closing ceremony had been missed as well as the opening ceremony and only a few athletic events had been witnessed by the medical team and no other events. The support and comradeship of the medical team is thus essential over a long gruelling four weeks. Occasional help from HQ medical staff helped us over some impossible times and gave us one or two days off in a month – but that's sports medicine!

What are the lessons that we have learnt?
2. The advice booklet served its purpose. There was a low incidence of travel and acclimatization problems.
3. Record-keeping of a high order is not only professionally satisfactory, but could lead to a valuable reference source as long as computerized facilities to store and analyse these results are maintained.
4. Athletes have unlimited ingenuity in finding ways to injure themselves. Eternal vigilance as to the dangers of the environment is needed.
5. Olympic athletes have a tendency to increase their training over those last few weeks and run into over-training problems. Indeed, some were so keen to test themselves at high levels in training and pre-Olympic competition that they failed even to make the final test and reach the start line.

6. As long as the present drug rules exist, it is apparent that preparations hitherto seen as safe are not as safe as we thought. The benefits and possible dangers of dietary additives must be explored and discussed with athletes and coaches.
7. The care of athletes is immensely improved when there is the opportunity for regular meetings and discussions between team officials, coaches and medical teams.
8. We could argue the ratio of physiotherapist to athlete for ever and still not provide enough. We feel in such a continuous event that a manageable number is one physiotherapist to twenty athletes. We would have struggled in Seoul had we not had HQ physio staff assistance on several crucial occasions.

Table 1. Track and field athletics, Seoul Olympics, 1988

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<tr>
<th>Medical consultations</th>
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<tbody>
<tr>
<td>Athletes</td>
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<tr>
<td>Male: 109 consultations with 38 (64%) of 59 athletes</td>
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<tr>
<td>Female: 112 consultations with 35 (73%) of 48 athletes</td>
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<tr>
<td>Officials: 19 consultations with 11 (48%) of 23 officials</td>
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<td>Total: 240 consultations with 84 individuals of which, 221 consultations with 73 (68%) of 107 athletes</td>
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<tr>
<th>Physiotherapy treatments</th>
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<tr>
<td>Individuals treated:</td>
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<tr>
<td>Athletes: Male: 52 Female: 43</td>
</tr>
<tr>
<td>Officials: Male: 4 Female: 2</td>
</tr>
<tr>
<td>Treatments given: Athletes: Male: 458 Female: 419</td>
</tr>
<tr>
<td>Officials: Male: 4 Female: 2</td>
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<td>Total: 883</td>
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<th>Treatment modalities:</th>
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<tr>
<td>Electrical: interferential: 215 ultrasound 188 laser 86</td>
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<tr>
<td>Total: 489</td>
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<tr>
<td>Ice: 42</td>
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<tr>
<td>Exercises: 96</td>
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<tr>
<td>Strappings: 71</td>
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<tr>
<td>Manual: PNF etc.: 101 Mobilizations: 78</td>
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<tr>
<td>Total: 179</td>
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<tr>
<td>Massage: Specific: 231 nonspecific: 388</td>
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<tr>
<td>Total: 619</td>
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<tr>
<td>First aid, chiropody etc: 14</td>
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<tr>
<td>Total, all treatments: 1510</td>
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</tbody>
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101 patients received 1510 treatments, average 14.95 each. 1510 treatments in 883 attendances, average 1.71 modalities each.

*nonspecific massage = massage given where there is no underlying injury or medical problem
Olympic athletics medical experience, Seoul--personal views.

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Thus, I would like to suggest that there is now a place for using bouncing and ballistic stretching alongside the well recommended yoga and PNF stretching. Its place and its reason for use must be carefully ascertained. The ultimate goal of stretching should be to achieve functional range—not potential range.

References

1. Goldspink, G., Tabary, J.C., Tabary, C. and Tardieu, C. Effect of denervation on the adaption of sarcomere number and muscle extensibility to the functional length of muscle J Physiology 1974, 236, 733–742
2. Russel, K. 'Increasing joint range of movement in young athletes' Paper to the British Association of National Coaches, December 1985, Birmingham

Erratum

Dr Malcolm Read writes to point out our printing error in Vol. 23:2 (June 1989), page 78. The correct text should read 'Pure Ginseng is not proscribed' (not 'prescribed'). We apologise for this error. Ed.

Book Reviews

Determination of the Moments of Inertia of the Human Body and its Limbs

W. Braune and O. Fischer

'The Determination of the Moments of Inertia of the Human Body and its Limbs' has been translated from the German by P. Maquet and R. Furlong. It describes the procedures and presents the original results of the classic experiments by W. Braune and O. Fischer in 1892. The work was carried out to determine the forces exerted on and by parts of the body during walking which were prepared and subsequently published in the much acclaimed work 'The Human Gait'. This slim volume is comfortable to read in translation and is beautifully prepared and presented. It is a specialist's book and will be of interest to serious students and practitioners of biomechanics, ergonomics, medicine and related disciplines.

W. Bell PhD

Year Book of Podiatric Medicine and Surgery 1988

Richard M. Jay

Richard Jay and his contributing editors have searched the multitude of US and foreign medical journals to present us with abstracted articles and research papers in seventeen chapters of exceptional quality. Chapters cover paediatrics to arthritis, taking in biomechanics, sports medicine, traumatology and system disorders affecting the foot, en route. Articles are well illustrated with clear X-rays and photographs. At the end of each article the editor comments on the significance and quality of the work, offering succinct criticism.

With the wealth and diversity of material contained within the book, it is perhaps best used as a reference stepping stone for those wishing to further their own study or research. As a whole the book would prove invaluable to a modern-day chiropractor/podiatrist as well as the orthopaedic or podiatric orientated physician. To a sports medicine practitioner only certain chapters would be directly relevant.

This volume is probably best suited to the shelves of a medical reference library, but certainly would not gather dust.

D. Bucklow MCNS, SRCh


Osternig, L.R., Hamill, J., Lander, J. and Robertson, R. Co-activation of sprinter and distance runner muscle in isokinetic exercise


Further references