TREATMENT NOTE:

STRAIGHT LEG RAISE AS A TREATMENT TECHNIQUE

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A healthy fit 19 year old amateur cyclist presented with low back and leg pain, which occurred only during cycle training. A diagnosis of bilateral sciatica with general hypomobility was made.

In March 1978, the patient kicked a ball and his leg became "lame" for a short time. He had complete recovery in two months. The first nine months of 1979 were spent cycling in Europe. In August 1979 he lifted a heavy weight, resulting in severe pain in both legs down to his heels that night. This recovered the next day. In that month he also had a severe fall off his bicycle. During subsequent chiropractic treatment in Belgium, the patient was told that he had Scheuermann's disease. His back was manipulated, after which he still had pain in his legs but only on cycling. In October 1979 he had chiropractic treatment in South Africa. He was given massage and "pressing on the spine", with relief for two weeks, after which he developed cramps in the legs. The patient presented at Back Clinic in March 1980 with low back pain and "lameness" of his legs. He reported neither leg pain nor leg cramps. Because of his symptoms his cycle training had been reduced from 120 km to only 50 km a day.

On subjective examination, the patient reported pain of sciatic and low back distribution, which was referred

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DATE	SYMPTOMS			TRAINING SPEED and distance covered (km)
	At beginning of training	Middle of training	Near end of training	
3.4.80	+++(no symptoms)	+++	+++	Slow 100
4.4.80	Pain in L quads. Pain in L buttock.	Stopped training		Almost nil
5.4.80	+++	+++	+++	Sprints 50 + 50
6.4.80	+++	+++	Pain in back	Slow 55
7.4.80	No training			—
8.4.80	Slight pain in legs throughout training, more in R than L			Slow 90
9.4.80	Pain in L hamstring Stiffness and pain in back throughout training			Slow 80
10.4.80	Stiffness in back Pain in both hamstrings and discomfort in back throughout			Slow 70
11.4.80	Pain in both hamstrings throughout the training			Slow 60
12.4.80	Pain in both hamstrings throughout the training			Slow 60
13.4.80	Pain in quads.	Cramp in R hamstring, Stopped, massaged	Pain in back	Sprints — slow 120
14.4.80	No training			—
15.4.80	Pain in L Tib. Ant. muscle	+++	Pain in hamstrings	Sprints — slow 85
16.4.80	+++	+++	Pain in hamstrings	Sprints 60
17.4.80	+++	Pain in hamstrings	+++	Slow 90
18.4.80	Pain in hamstrings	Discomfort in back	Pain in hamstrings	Slow 120
19.4.80	+++	+++	Pain in hamstrings Discomfort in back	Slow 120
20.4.80	+++	Pain in back and hamstrings		Slow 120
21.4.80	No training			—
22.4.80	+++	Pain in hamstrings, discomfort in back		Sprints 60
23.4.80	+++	Pain in hamstrings	Pain in back	Slow 90
24.4.80	Pain in hamstrings			Sprints 50
25.4.80	No training			—
26.4.80	Pain in hamstring area throughout the training	Discomfort in the back		Slow 180
27.4.80	Pain in hamstrings, greater in R than L, and discomfort in back			Slow 120
28.4.80	+++	Pain in back	+++	Sprints 60
29.4.80	+++	Pain in back and R hamstring		Sprints 60
30.4.80	Pain in quads. Discomfort in the back throughout the training			Sprints 50
1.5.80	+++	Pain in R quads then pain in back		Slow 90

and "severe". This pain occurred only during cycling, disappearing after cessation of training and a hot bath. He had no neurological symptoms.

On objective examination all movements were full and pain free, except flexion, where he could reach 20 cm above the ankles without pain. No signs of tenderness, nor any abnormality of hips or peripheral pulses were demonstrated. There were also no neurological signs. Straight leg raise was 45° on both sides. The possibility of ankylosing spondylitis or other inflammatory disease was excluded, and the presence, in mild form, of Scheuermann's disease was noted.

His problems therefore appeared to be that of tight musculo-tendinous structures, and/or lack of mobility of pain sensitive structures within the spinal canal.

A treatment programme was initiated with the adjust-

ment by the orthopaedic surgeon of the racing bicycle. The handle bars were raised and the saddle lowered in order to decrease his flexed posture. He had Maitland mobilisations three times weekly for four weeks. The technique used was straight leg raise on right and left legs, grade IV, for three periods of thirty seconds for each leg. He was taught MacNab's regime of flexion exercises, as well as back extension exercises to counteract his flexed posture during cycling. He had intensive counselling on how to avoid back stress situations during his daily activities. Finally, he was taught an active hamstring-stretching exercise. His subjective reports concerning his training showed interesting variations (see table); e.g. the patient commented that he felt more improved during the first and third weeks than the second and fourth; the symptoms were not consistent with either the speed of training or the distance covered; the symptomatic areas varied frequently but, again, with no consistent pattern.

The fact that he had Scheuermann's disease had been stressed by a chiropractor, and the patient was obviously concerned over this fact. On radiological examination, although presence of the disease could be detected, it was said to be of no consequence. It was felt however, that an eye should be kept on this due to his habitual flexed posture during cycling. The final assessment of straight leg raise was 70° for both legs, i.e. still limited although improved. Thus it was felt to be important for the patient to continue with the stretching exercise for the hamstrings, which would also mobilise the structures in the spinal canal.

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