

# **Australian Association of Musculoskeletal Medicine *Bulletin***



**G.P.s' Perceptions About Back Pain  
Services Used By Back Pain Patients  
Fibromyalgia: A Literature Review  
Clinical Biomechanics of the Sacroiliac Joint**



**A most potent mobilising force:**

# Kenacort-A 10



Product information is attached, further information is available on request to  
The Director of Medical Services,  
E.R. Squibb & Sons Pty Ltd,  
556 Princes Highway,  
Noble Park,  
Victoria, 3174.

# Bulletin

September 1992

<b>Office-bearers 1992</b>	<b>3</b>
<b>Editorial</b>	<b>4</b>
<b>From the Hon. Secretary's Desk</b>	<b>5</b>
<b>A.A.M.M. News</b>	<b>6</b>
<b>Meetings, Conferences and Courses</b>	<b>9</b>
<b>Mailbag</b>	<b>16</b>
<b>N.Z.A.M.M. News</b>	<b>17</b>
<b>General Practitioners' Perceptions About the Management of Back Pain</b> <i>Alex Brown, Jodi Clark et al.</i>	<b>20</b>
<b>Health Care Services used by Patients with Chronic Back Pain</b> <i>Beth Bateman, Trish Ferguson et al.</i>	<b>33</b>
<b>Fibromyalgia: A Literature Review</b> <i>Philip Watson</i>	<b>42</b>
<b>Clinical Biomechanics of the Sacroiliac Joint</b> <i>Wade King</i>	<b>50</b>
<b>Book Review</b>	<b>56</b>

The A.A.M.M. Bulletin is produced by the Australian Association of Musculoskeletal Medicine for medical practitioners interested in the aetiology and management of musculoskeletal disorders. Opinions expressed are those of the authors and not necessarily those of the editors or the Association. Editorial comment may reflect the opinions of the editor alone. Contributions on any relevant topic are welcome for submission to the editors, Dr. Wade King, 82 High Street, Taree, NSW, 2430, telephone (065) 51 0662 and Dr Ron Palmer, Suite 43 Royal Brisbane Place, 17 Bowen Bridge Road, Herston, Qld, 4006, telephone (07) 252 1128 or to any member of the A.A.M.M. Council.  
Published by Belaser Type Services, PO Box 1083, Tamworth, NSW, 2340, telephone (067) 66 6399, fax (067) 66 1062.



# Save Money! Save Time!

## respond II™

The most advanced musculo-skeletal rehabilitation tool which is ..

- ▶ more effective than INTERFERENTIAL, less uncomfortable than FARADISM, easier to use than HIGH VOLTAGE GALVANISM ..
- ▶ non invasive ..
- ▶ fully portable and lightweight ..
- ▶ the result of years of scientific and clinical research ..

Medtronic offers ..

- ▶ training by a consultant physiotherapist ..
- ▶ full after sales support ..
- ▶ latest technology for one third of the price ..

Why not let our consultant physiotherapist demonstrate the RESPOND II. Ring 437 6066 or toll free (008) 25 1760 for further information.



## respond II™

**Medtronic** 

Medtronic Australasia Pty Ltd 22 Clarke Street Crows Nest NSW 2065  
Tel (02) 437 6066 Fax (02) 437 6869 Toll Free (008) 25 1760

## AUSTRALIAN ASSOCIATION OF MUSCULOSKELETAL MEDICINE OFFICE-BEARERS 1992

The following members were elected to office at the Annual General Meeting in Adelaide on 24th October, 1991.

### PRESIDENT:

**Professor Nikolai Bogduk** BSc (Med) (Hons),  
MB, BS (Hons), PhD, Dip Anat, Hon MMTAA

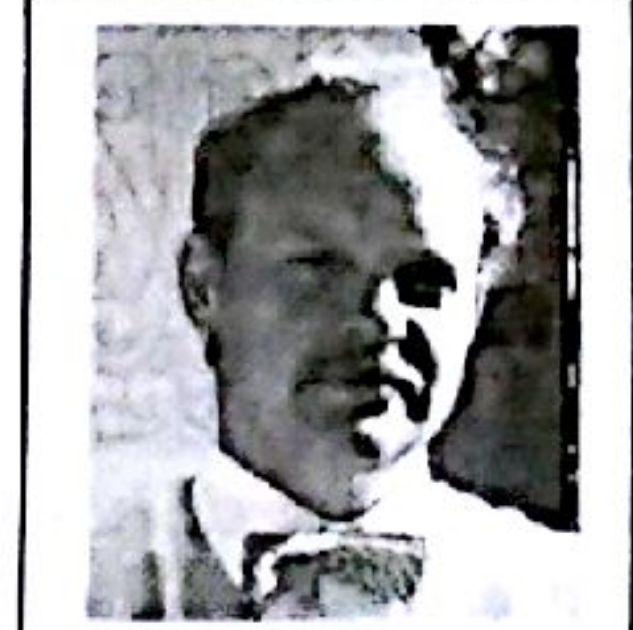
Faculty of Medicine, University of Newcastle,  
Newcastle, N.S.W., 2308  
telephone (049) 21 5608



### VICE-PRESIDENT:

**Dr. David Vivian** MB, BS

441 Bay Street, Brighton, Vic., 3186  
telephone (03) 596 7211



### HON. SECRETARY:

**Dr. Norman Broadhurst** MB, BS, MSc, PhD,  
DipEd, DipRACOG, FRACGP

7 Brighton Road, Glenelg, S.A., 5045  
telephone (08) 295 1890



### HON. TREASURER:

**Dr. Wade King** MB, BS

82 High Street, Taree, N.S.W., 2430  
telephone (065) 51 0662



### COUNCILLORS AND SUB-COMMITTEE MEMBERS:

<b>Dr. Barry Abeshouse</b>	Bellvue Hill, N.S.W.	(02) 427 2829
<b>Dr. Max de Clifford</b>	Donvale, Vic.	(03) 873 2537
<b>Dr. Geoff Harding</b>	Sandgate, Qld.	(07) 873 2537
<b>Dr. Gary Hopkins</b>	Largs Bay, S.A.	(08) 347 0400
<b>Dr. Marius Loeffler</b>	Pinjarra, W.A.	(09) 531 1658
<b>Dr. David McGrath</b>	Fadden, A.C.T.	(06) 292 6574
<b>Dr. Michael Oei</b>	Glebe, N.S.W.	(02) 692 0252
<b>Dr. Ron Palmer</b>	Herston, Qld.	(07) 252 1128
<b>Dr. Allan Saltau</b>	Miles, Qld.	(076) 27 2000
<b>Dr. Vic Wilk</b>	Brighton, Vic.	(03) 596 7211

### SUB-COMMITTEES:

**Accreditation:**


**Bulletin:**

**Education:**

**Membership and Publicity:**

**Overseas Liaison:**

Gary Hopkins (convenor), Nik Bogduk, Barry Abeshouse  
Ron Palmer (convenor), Wade King, Allan Saltau  
Max de Clifford (convenor), Geoff Harding, Norm Broadhurst, Michael Oei  
Vic Wilk (convenor), David McGrath  
Marius Loeffler (convenor), David Vivian

**Medtronic** 



## Editorial

This issue of the Bulletin contains two articles prepared by medical students of the University of Newcastle. The articles describe research undertaken by the students into aspects of musculoskeletal medicine which will be of considerable interest to those practising in the discipline. One paper addresses general practitioners' perceptions about back pain and its management. The other describes a survey of the types of health care services used by patients with chronic back pain. The results will be surprising to some. Quite apart from their intrinsic merits (which are considerable), the two studies demonstrate what can be achieved by relatively simple research projects and should stimulate members to consider conducting similar studies of their own.

The other two papers in this issue deal with subjects of some controversy, fibromyalgia and sacroiliac joint movements. Both are topics on which there is quite considerable disagreement within the profession, largely due to lack of hard scientific data on which firm clinical guidelines can be based. Both papers end with expressions of the need for more research in the respective areas.

Research is the vital process which keeps a scientific discipline alive. The results of research define the boundaries of knowledge and separate science from speculation. Both have their places in the scheme of things; in fact, some would argue that the physical can only be fully appreciated in the light of the metaphysical. David Suzuki's recent entreaties pertain. However, openness of mind must not be confused with lack of discrimination. The discipline of science demands that the only possibilities which can be entertained in a rational analysis are those which comply with the natural laws and which can be substantiated by objective data. When hard evidence is lacking, a sceptical attitude is more prudent than one of blind acceptance; an attitude of enquiry is essential for scientific respectability and that enquiry is essential for scientific respectability and that enquiry must be untainted by unsubstantiated opinions. Questions must be asked and research undertaken to provide reliable answers.

Some members of the A.A.M.M. have already made notable contributions to the world literature on musculoskeletal topics. The studies of Professor Jim Taylor (and co-workers) of Perth on the anatomy and biomechanics of the lumbar spine, and particularly the histological studies of zygapophysial joints injured by motor vehicle accident trauma, have led to major re-appraisals of problems associated with low back pain. The delineation of the nerve supply of the lumbar intervertebral disc in 1981 by the current president, Professor Nik Bodguk, was a major landmark in the understanding of spinal pain and his many other publications on anatomic, biomechanical, pathophysiological and therapeutic subjects have been instrumental in the development of innovative approaches to spinal pain management. Other members have also made significant contributions and Australia is recognised internationally as a leading country in the development of musculoskeletal knowledge.

Members in clinical practice can play significant roles in research programmes. They may carry out surveys, such as those undertaken by the Newcastle students, they can conduct clinical research trials of methods used in their practices and they can participate in more formal research projects conducted by the "professional" researchers based in academic institutions. Musculoskeletal medicine offers a wide range of topics suitable for (and in need of) research. The Association has within its ranks well-qualified people who are willing and able to provide guidance to members who might wish to become involved but are uncertain about how to proceed. The future of the discipline lies with those who will accept the challenges of scrutinising current concepts, investigating their validity, exploring the unknown and establishing new standards of clinical and therapeutic reliability.



## From the Hon. Secretary's Desk

The discipline's educational programme is developing satisfactorily, at least at the formal postgraduate level. The third intensive on-campus unit of the Flinders University course for the Diploma in Musculoskeletal Medicine was conducted in July and completed successfully by seven members. Fifteen candidates are currently enrolled in the programme and the next intake for the first unit, in Anatomy, Physiology and Biomechanics, to be run in November, 1992, is already booked out. This is very encouraging and confirms that musculoskeletal medicine is not only alive and well in Australia but has the potential to expand its academic base.

It seems clear that increasing numbers of patients are seeking out medical practitioners with expertise in musculoskeletal medicine. Members in full-time practice in the discipline indicate that they are receiving referrals from a steadily growing number of colleagues and the greatest problem that many are facing is that the waiting times for appointments are lengthening. Obviously the Association must increase its endeavours to meet the demand by providing more courses aimed at increasing the knowledge and skills of interested doctors, particularly at the "middle level" between those being introduced to the discipline and those undertaking formal university studies. As well, members should be striving to make contributions to the scientific literature on musculoskeletal matters.

The Council and the five sub-committees of the Association have been busy with their various tasks. In order to keep all members informed of the sorts of things that are currently going on, below is the list of topics on the agenda of a recent Council meeting conducted by telephone hook-up. Details of several of these items will be found in the A.A.M.M. News section of this Bulletin.

1. Bulletin production.
2. N.Z.A.M.M. subscription to the Bulletin.
3. F.I.M.M. Congress.
4. Demise of the journal "Manual Medicine".
5. A.A.M.M. annual conference in Perth.
6. Sub-committee reports.
7. Diploma course progress.
8. Licentiate programme.
9. Negotiations with Federal Department of Health.
10. Continuing education programme.
11. Increasing ties with N.Z.A.M.M.
12. Future development of the discipline.

Any member who would like further information on any of these topics, or who would like to discuss any item of interest, is invited to contact the Hon. Sec. either by telephone or in writing.

The general consensus seems to be that the Association is going in the right direction and that even more might





The twenty-second Annual Scientific Meeting will be held in Perth from 10th to 11th October, 1992. The venue will be the Charles Gairdner Hospital at Nedlands (a suburb of Perth) and not at a city hotel as previously advertised. The theme of the conference will be applied biomechanics of the shoulder region and common clinical conditions will be discussed in the light of recent biomechanical research findings. Also included in the programme, for the first time in some years, will be as practical "hands on" session in which those attending will be able to develop clinical skills in the assessment of the shoulder region, using techniques based on the biomechanical information presented. The full programme is to be found on the Meetings, Conferences and Courses pages of this Bulletin.

Pre- and post- conference workshops will be held as usual, offering further opportunities for members to increase their clinical skills. Breakfast and lunch sessions to be held during the conference itself will also have a practical emphasis.

All members are urged to attend the conference if possible. Enquiries should be addressed to the conference co-ordinator, Mr Bruce Welburn, 27 Regent Avenue, Mount Pleasant, W.A., 6153, telephone (09) 364 4436, or to the conference convenor, Dr. Ian Hewett, 5/25 Preston Street, Como, W.A., 6152, telephone (09) 367 9778 or (09) 474 2627.



The Annual General Meeting of the A.A.M.M. will be held at 5pm on Saturday 10th October, 1992 at the Charles Gairdner Hospital, Perth. One item on the agenda will be a discussion in which members' opinions will be sought on progress towards the establishment of a College of Musculoskeletal Medicine. This matter was raised last year and it was agreed then that it should remain on the notice paper for each ensuing A.G.M. until appropriate action is taken. Members who will not be able to attend the A.G.M. but who wish nonetheless to express views on this important topic are invited to express them in writing to the Hon. Secretary.



The activities of the Association's sub-committees will also be discussed at the A.G.M. and views will be sought on ways in which they might be improved so as to meet members' needs more effectively. In particular, the Education Sub-committee will review educational opportunities which exist in the discipline and will canvas members' feelings on proposals for some new initiatives.



Negotiations between the A.A.M.M. and the Federal Department of Housing, Community Services and Health have not progressed further. Meanwhile, Medicare rebates for patients of those in full-time musculoskeletal practice have been further eroded in comparative terms by the federal budgetary strategy aimed at encouraging vocational registration of those in general practice. Members will be kept informed of developments.



The third unit of the six part course for the Diploma in Musculoskeletal Medicine was held in July at the Flinders University of South Australia. The unit focused on the spine and highlights included a review of the latest information on spinal biomechanics by Dr Mark Percy, Principal Hospital Scientist of the Royal Adelaide Hospital, a lecture on recent advances in pain physiology by Professor Marchello Costa of the Flinders University's Department of Neuroscience and both theoretical and practical sessions on techniques of pain management by Dr David Cherry, Director of the Pain Unit of the Flinders Medical Centre and President of the Australian Chapter of the International Association for the Study of Pain. Other sessions of note were the classes in radiological assessment by Dr. John Slavotinek, the demonstrations of arthrography and joint block techniques by Dr. Gerald Gon and the practical class in electromyography conducted by Professor John Willoughby. A great deal was fitted into the fortnight but the quality of the material presented ensured that the candidates' enthusiasm was equal to the workload. The success of the Diploma course is now assured. The first intake will complete the course in 1993 and the next course, which begins in November, 1992, is already fully booked. In fact, several applications have already been received for the intake after that, which is expected to begin the course in 1994.



The Licentiate programme offered by the Association remains available to any member seeking an objective assessment of experience and expertise, particularly for those who for any reason are unable to undertake the Diploma course. The Licentiate was planned essentially as a short term expedient and is expected to be phased out as the Diploma programme gathers momentum over the next few years. Members who wish to offer themselves for assessment for the Licentiate should contact the Hon. Secretary, who will forward details of the requirements and the appropriate application form.



The tenth tri-ennial International Congress of F.I.M.M. (the International Federation of Musculoskeletal Medicine) is being held in Brussels from 16th to 19th September, 1992. Unfortunately, due to problems of time, distance and economic circumstances, there will not be an official Australian delegation this year, a matter of some regret for the Association. The Council discussed the issue at its last meeting and decided to encourage attendance at the next congress by offering sponsorship in the form of an amount equivalent to half the economy air fare to any member chosen to present a paper at the meeting; alternatively it will consider extending the offer to any A.A.M.M. member prepared to attend the meeting as the Association's representative.



The F.I.M.M. sponsored English-language journal *Manual Medicine*, produced in Germany over the last seven years or so, seems to have foundered. The publishers, Springer-Verlag, who have supported the Journal despite logistic and financial problems associated with it over the last few years, have finally decided to cease its production. It must be stated that they did so with great reluctance and only after repeated requests to the national and international bodies of F.I.M.M. for support for the publication; a debt of gratitude is owed by all members of F.I.M.M. to Springer-Verlag for their efforts and commitment in the face of such difficulties.

The A.A.M.M. has made overtures to F.I.M.M. for consideration of production of an international English-language journal of musculoskeletal medicine in Australia. It is felt by the Association's Council that such a publication could be undertaken successfully by upgrading the current Bulletin and producing it in a journal format for distribution to the various English-speaking countries. Such a move would, of course, involve reducing the Australian content and flavour of the present publication but this would be offset by the inclusion of material from international sources. It might lead to the need for a local newsletter containing some of the material presently included in the Bulletin. Obviously there would be significant implications for the A.A.M.M. and these will be considered when the decision of the international federation is known.





The Bulletin is already an international publication of sorts as the New Zealand Association of Musculoskeletal Medicine has recently decided to include subscription to it in its annual membership fee. This means that the Bulletin is now distributed to two hundred readers across the Tasman as well as the four hundred who receive it in Australia. This issue is the first to contain news specifically of interest to members of the N.Z.A.M.M. and marks a new stage in co-operation between the Associations on either side of the Tasman. The editorial board welcomes further contributions from the Land of the Long White cloud, particularly articles by New Zealand authors.



Another indication of increasing liaison between the Australian and New Zealand bodies is the plan for a combined meeting of the Councils of the two Associations and those members of each involved in postgraduate education, to be held on Norfolk Island in March, 1993. Discussion will focus on educational programmes, with a view to developing a common approach on each side of the Tasman. A meeting on this topic was held during the A.A.M.M.'s annual conference in Melbourne in 1990 and some of the ideas mooted then will be explored further at the Norfolk gathering. Consideration will also be given to practical aspects of the discipline, such as the validity of clinical assessment techniques and the use of ancillary investigations such as C.T. scans, discography and zygapophysial joint blocks.



The Winter Meeting was held at Mt. Buller again this year and for the first time included a formal scientific programme as well as the usual opportunities for skiing and social interaction. The combination reflected the Association's increasing commitment to educational activities and seems to have set the trend for the future.



Well-known Brisbane member Peter Jackson is the latest to take the plunge into full-time practice in musculoskeletal medicine. Peter has been involved in the discipline for many years and has been one of the principal teachers of the R.A.C.G.P. courses in spinal manipulation for doctors. Colleagues wishing to contact him to refer patients, etc. will find him at 7 Bank Road, Graceville, Queensland, 4075, telephone (07) 3797444.



Dr. Jean-Yves Maigne is visiting Australia in September to conduct an advanced workshop on behalf of his father, Dr. Robert Maigne, who recently sustained back injuries in a motor vehicle accident. The workshop, which is to be held at a venue on the Gold Coast, is intended for those who have already completed one of the Maigne courses in Paris and those eligible will have been notified individually. Dr. Jean-Yves Maigne will be making private visits to other centres whilst he is in the country and it is possible that he may attend the annual conference in Perth.



Annual subscriptions are now overdue. Members who have not paid since notices were issued in July should send the annual fee of \$85.00 to the Hon. Treasurer as soon as possible. Holders of the Licentiate should forward an additional sum of \$25.00, the fee set for the maintenance of the Licentiate's roll.



## Meetings, Conferences and Courses

### Local A.A.M.M. Meetings

In **Adelaide**, members meet monthly for seminars, case presentations and practical sessions at the Queen Elizabeth Hospital and the Flinders Medical Centre. All members and any other interested medical practitioners are most welcome to attend. Further details can be obtained from Dr. Norm Broadhurst, telephone (08) 295 1890.

In **Brisbane**, The Q.E.II Hospital postgraduate education programme will continue this year, with meetings held at the hospital every six weeks. Details of meeting times and topics to be discussed etc. can be obtained from Dr. Geoff Harding, telephone (07) 269 1842 or Dr. Ron Palmer, telephone (07) 252 1128.

In **Melbourne**, meetings are held monthly, usually on the second Tuesday of the month at 8 p.m. These meetings are often held in conjunction with sports physicians and venues are various clinics around the inner city area. Those interested in attending are asked to contact Dr. David Vivian or Dr. Vic Wilk at the Metropolitan Spinal Clinic, 302 Malvern Road, Prahran, telephone (03) 529 1988.

In **Sydney**, meetings are held at 7.30 p.m. on the third Monday of each month in the Department of Rehabilitation Medicine, Royal Prince Alfred Hospital. The programme usually consists of a lecture or discussion on a selected topic, followed by case presentations and a practical session of diagnostic and management techniques. The meetings are open to all interested medical practitioners. Those wishing to attend are asked to telephone Dr. Conrad Winer on (02) 550 3837 during the preceding three working days to confirm the arrangement.

In **Newcastle**, regular meetings are held at the Royal Newcastle Hospital for A.A.M.M. members and local registrars in orthopaedics, rheumatology and rehabilitation. Topics, times and any other information can be obtained from Prof. Nik Bogduk, telephone (049) 215608.

In **Perth**, weekend workshops are arranged from time to time by Dr. Marius Loeffler. Members interested in attending can obtain further details by contacting Dr. Loeffler, telephone (09) 531 1658.

Regular meetings, practical sessions and courses are conducted in many other centres around Australia by state branches, local groups and individual members of the Association. These activities are mainly for the benefit of members living in a particular area and they will generally be advised by letter or by local notices of dates, times and venues. Anyone who is not receiving information about local activities, or who would like more details about what is going on, should contact one of the local organisers listed below.

In **Cairns**, Dr. Gaye Tucker, telephone (070) 53 3330.

In **Canberra**, Dr. Goff Nelson on (062) 95 6773.

In **Hobart**, Dr. Ron Heddle on (002) 34 5990.

In **Tamworth**, Dr. John Bosler on (067) 66 4733.

In **Taree**, Dr. Wade King on (065) 51 0662.

In **Toowoomba**, Dr. Jeff Phillips on (076) 38 4800.

In **Townsville**, Dr. Roger Watson on (077) 71 3084.

In **Wollongong**, Dr. Chris Minogue on (042) 83 4011.

Those who live in **other areas** and who would like to organise or participate in local meetings should contact Dr. Max de Clifford, convenor of the Education Sub-Committee, 36 Heads Road, Donvale, Victoria, 3111, telephone (03) 873 1764. He can arrange publicity, notes, visual aids and other assistance from the Association's resources.



## 22nd Annual Scientific Meeting of the Australian Association of Musculoskeletal Medicine

The Association's Twenty-second Annual Scientific Meeting will be held in **Perth**, Western Australia, on 10th and 11th October, 1992. New information resulting from recent research will be presented at the meeting, particularly in relation to shoulder biomechanics. The conference will have a strong emphasis on practical application of the scientific material put forward and the programme will include "hands on" workshop sessions on clinical assessment of shoulder problems. By the end of the meeting those who attend should have a completely new approach to the clinical management of shoulder pain and dysfunction, with algorithms for diagnosis and treatment based on the latest scientific information and practical experience of relevant clinical procedures.

### Saturday, October 10th.

08.30	Registration	
09.00	Introduction	Dr. I. Hewett
09.15	Anatomy of Shoulder	Prof. N. Bogduk, University of Newcastle
09.45	Movements & Biomechanics of the Shoulder Girdle	Prof G. Johnson, Bioengineer, University of Newcastle-upon-Tyne
10.30	Recess	
	<i>Chairman Dr. Max de Clifford</i>	
11.00	Structure of the Glenohumeral Joint	Prof. N. Bogduk
11.00	Glenohumeral Biomechanics	Prof. G. Johnson
12.15	Quiz	Dr. N. Broadhurst, Senior Lecturer Flinders University
12.30	Lunch & Session	
	<i>Chairman Dr. Michael Oei</i>	
13.30	Impingement Syndromes	Dr. K. Holt, Orthopaedic Surgeon
14.00	Rotator Cuff Tears	Dr. A. Skirving, Orthopaedic Surgeon
14.30	Radiology - Static & Dynamic	Dr. E. Willie, Radiologist, Perth
15.00	Afternoon Tea	
	<i>Chairman Dr. Simon Rosenbaum</i>	
15.30	Role of Scapula in Awkward Arm Activity	Dr. R. Dalziel, President of A.O.
16.00	Inflammatory Changes in the Shoulder	Dr. K. Maguire, Rheumatologist & Sport Physician W.A.
17.00	Annual General Meeting of A.A.M.M.	
19.30	Annual Dinner - Matilda Bay Restaurant	

### Sunday, October 11th.

09.00	Assessment Outline	Dr W. King
09.15	Assessment Workshop	Multiple Teachers
10.30	Recess	
	<i>Chairman Dr. Geoff Harding</i>	
11.00	Morning Quiz	
11.15	Research Frontiers - Who presents how?	Dr. N. Broadhurst
11.40	Where to in Surgery	Dr. R. Dalziel
12.10	Orthoses & Ergonomics	Prof. G. Johnson
12.45	Lunch & Session	
	<i>Chairman Dr. Barry Abeshouse</i>	
14.00	Referral Patterns - Panel	Drs. M. de Clifford, Prof. J. Taylor, G. Harding
14.30	Developing a diagnostic algorithm	Profs. N. Bogduk & G. Johnson
15.45	Recess	
16.15	Hypothetical - practice in action	Dr. V. Wilk

## 22nd Annual Scientific Meeting of the Australian Association of Musculoskeletal Medicine

### Associated Meetings

### PRE CONFERENCE WORKSHOPS

October 8th & 9th. Venues to be advised.

#### Cervical Spine and Shoulder Girdle.

Dr. Wade King, Musculoskeletal Physician, Taree.

#### Lumbar Spine and Pelvis.

Dr Norm Broadhurst, Musculoskeletal Physician, Adelaide.

### POST CONFERENCE WORKSHOPS

October 12th. Venues to be advised.

#### Introduction to Acupuncture.

Dr Michael Oei, Musculoskeletal Physician, Sydney.

#### Shoulder Assessment and Treatment.

Dr Victor Wilk, Musculoskeletal Physician, Melbourne.

### LUNCH SESSIONS

#### Saturday

#### Neural Tethering & Testing of brachial plexus

Mr. Robert Elvey

#### Sunday

#### Research Directives

Assoc. Professor Jim Taylor

### BREAKFAST - SUNDAY

#### Challenging Case Studies

Dr. Norm Broadhurst

Enquiries should be directed to the Hon. Secretary, Dr. Norm Broadhurst, 7 Brighton Road, Glenelg, S.A., 5045, telephone (08) 295 1890 or (locally) to Dr. Ian Hewett, Suite 5, 25 Preston Street, Como, W.A., 6152, telephone (09) 367 9778, or the Conference Secretariat, Mr Bruce Welburn, 27 Regent Avenue, Mt. Pleasant, W.A., 6153; telephone (09) 364 4436.



## Postgraduate Programme in Musculoskeletal Medicine Flinders University, South Australia

The Departments of Orthopaedic Surgery and Primary Health Care of the Flinders University have arranged a postgraduate programme to increase the skills of medical practitioners in assessing, diagnosing and treating musculoskeletal dysfunction.

The University requires 36 units of study to be completed before the Diploma is awarded and to this end, 6 x 6 unit courses have been approved. A Certificate may be awarded after completion of 3 x 6 unit courses.

After consultation with numerous interested parties it was decided that such a programme would best serve rural and city practitioners if it were offered in intensive in-service blocks of two weeks duration as follows:

- \*\* Anatomy, Physiology and Biomechanics of the musculoskeletal system
- \*\* Clinical Skills in managing non-surgical and non-rheumatological musculoskeletal dysfunction
- \*\* Musculoskeletal dysfunction related to diseases of the vertebral skeleton
- Musculoskeletal dysfunction related to diseases of the appendicular skeleton

\*\* N.B. These three courses are compulsory for the postgraduate certificate.

Emphasis in the Anatomy, Physiology and Biomechanics course will be on diagnosis. The Clinical Skills course deals with management and includes specific treatment modalities.

In addition to the above, two additional units must be taken to complete the requirements for the Diploma:

**Independent Study** - to include indepth literature survey, critical assessment of a treatment modality/examination or procedure, etc., to be made in consultation with the course co-ordinator.

**Rehabilitation Studies** or any related unit from the offerings within the Master of Science Primary Health Care Programme.

In determining the fees for such a course cognisance must be taken of:

- a. The charge for each year of an undergraduate medical course is of the order of \$26,000 per year for the full-fee paying student, e.g. overseas students.
- b. There is no mechanism whereby university or government funds can be put toward the costs of the course.

The fairest way is to charge \$1,500 for each unit or \$9,000 over a two to three year period until the Diploma is completed.

The next intake for the first of the two week intensive on-campus courses is planned for 9th to 21st November, 1992 at the Flinders Medical Centre, Adelaide, S.A.

Participants are expected to find their own accommodation. The Flinders University Halls of Residence may have some vacancies and efforts will be made to find billets for course participants.

Course:	Anatomy, Physiology and Biomechanics of the Musculoskeletal System.
Dates:	Monday 9th November to Saturday 21st November, 1992
Venue:	Flinders Medical Centre, South Australia
Cost:	\$1,500
Limit:	12

Note that Continuing Medical Education can be claimed as a tax deduction.

Further information about course offerings can be obtained from: Dr. Norm Broadhurst, Department of Primary Health Care, Flinders Medical Centre, Bedford Park, S.A. 5042.

## The National Annual Scientific Conference in Sports Medicine

*"Health and Sport Towards 2000"*

October 13 - 17th, 1992, **Perth**, Western Australia.

Sports participation is now recognised as a major factor in promoting healthy lifestyles. Improved understanding of sports injuries and strategies for their treatment and prevention are important for all doctors, especially those involved in musculoskeletal medicine

For further details contact ASMF

PO Box 897, Belconnen. A.C.T. 2616

## F.I.M.M. Tenth Triennial International Congress

*"The Cervical Column and the Cervical Syndromes"*

The International Federation of Musculoskeletal Medicine (F.I.M.M.), the world-wide body with which the A.A.M.M. is affiliated, will be holding its Tenth Triennial Congress in **Brussels** from Wednesday 16th to Saturday 19th September, 1992.

The Congress will be held over three days and will consist of plenary sessions focusing on the official theme, presentations on other topics related to musculoskeletal medicine, posters exhibition, film and video demonstrations and technical workshops. The main theme will be The Cervical Column and the Cervical Syndromes from different aspects: neurophysiology and neuroanatomy, biomechanics, pain and vertigo, clinical diagnosis, imaging and other technical investigations, manipulative and other forms of treatment.

Members should have received a brochure giving details of this important meeting. Those interested in making up a party to attend the Congress are asked to contact the Hon. Secretary, telephone (08) 290 1895, to discuss possible group concessions for travel and accommodation, etc.

For further information about the programme and other arrangements, or to register, contact G.B.M.M.-B.V.M.G. C/o Mme H. van Leemputten, rue Joseph Stallaert 28, B-1180 Brussels (Belgium), telephone (32)2.344.06.30, facsimile (32)2.346.1455.

## World Congress on Low Back Pain and its Relation to the Sacroiliac Joint

November 5 - 6th, 1992, **San Diego**, California, U.S.A.

Call for abstracts for poster presentations. If you wish to present a poster during the congress, please apply for an abstract form and write to the European Conference Organisers at the address given below.

For information regarding the congress contact University of California, San Diego, Office of Continuing Medical Education, 0617, LA JOLLA, California 92093-0617 telephone 619 534-3940 or the European Conference Organisers, POB 25327, 3001HH Rotterdam, The Netherlands telephone (0)10-4133287; facsimile (0)10-4147988.



## Mechanical Diagnosis & Therapy Course McKenzie Institute (Australia)

October 16 - 19, 1992, **Melbourne**, Victoria.

This course is the first of the four part McKenzie Institute Educational Programme. It is open to all registered physiotherapists and medical practitioners with an interest in mechanical disorders of the Lumbar Spine. Learning is achieved with lectures, problem solving, treatment of patients and practical techniques sessions. Maximum number of participants is 24. Registrations close Friday, September 25th, 1992. The venue for this course will be the School of Nursing, Preston & Northcote Community Hospital, 205 Bell Street, Northcote.

For information regarding this course and application forms write to Bev Dalziel, "McKenzie Courses", 24 Hartington Street, Northcote, Victoria, 3070; telephone (03) 489 9044.

## Current Concepts of Disc Disease

*"The Slipped Disc - In or Out?"*

November 7th, 1992, **Sydney**, Australia.

Topics for this symposium include "Slipped Disc" - misleading terminology based on fallacious concepts of disc pathology; Spinal Assessment and therapy based on the behaviour of Pain and Mechanical Response to Dynamic and Static Loading; The Unstable Lumbar Segment - Detection and Management; Management Aspects of Chronic Lumbar Pain; Surgical and Post Operative Management of Intervertebral Disc Disorders; Internal Disc Disruption, Diagnostic Tools for Detection of Lumbar Intervertebral Disc Problems.

For further information contact Kate Bailey, MPAA Symposium, 1992, PO Box 119, Concord, N.S.W., 2137, telephone (02) 736 1122. Closing date for registration is Friday, October 16, 1992 at 5.00pm.

## Videotapes of the Bogduk Lectures

See arthrology, biomechanics and the neuroanatomy of the musculoskeletal system presented as never before! Learn the nerve supplies of every muscle in a way that allows instant, accurate recall! Find out the secrets of

***The Dance of the Dermatomes* and *The Dance of the Myotomes!***

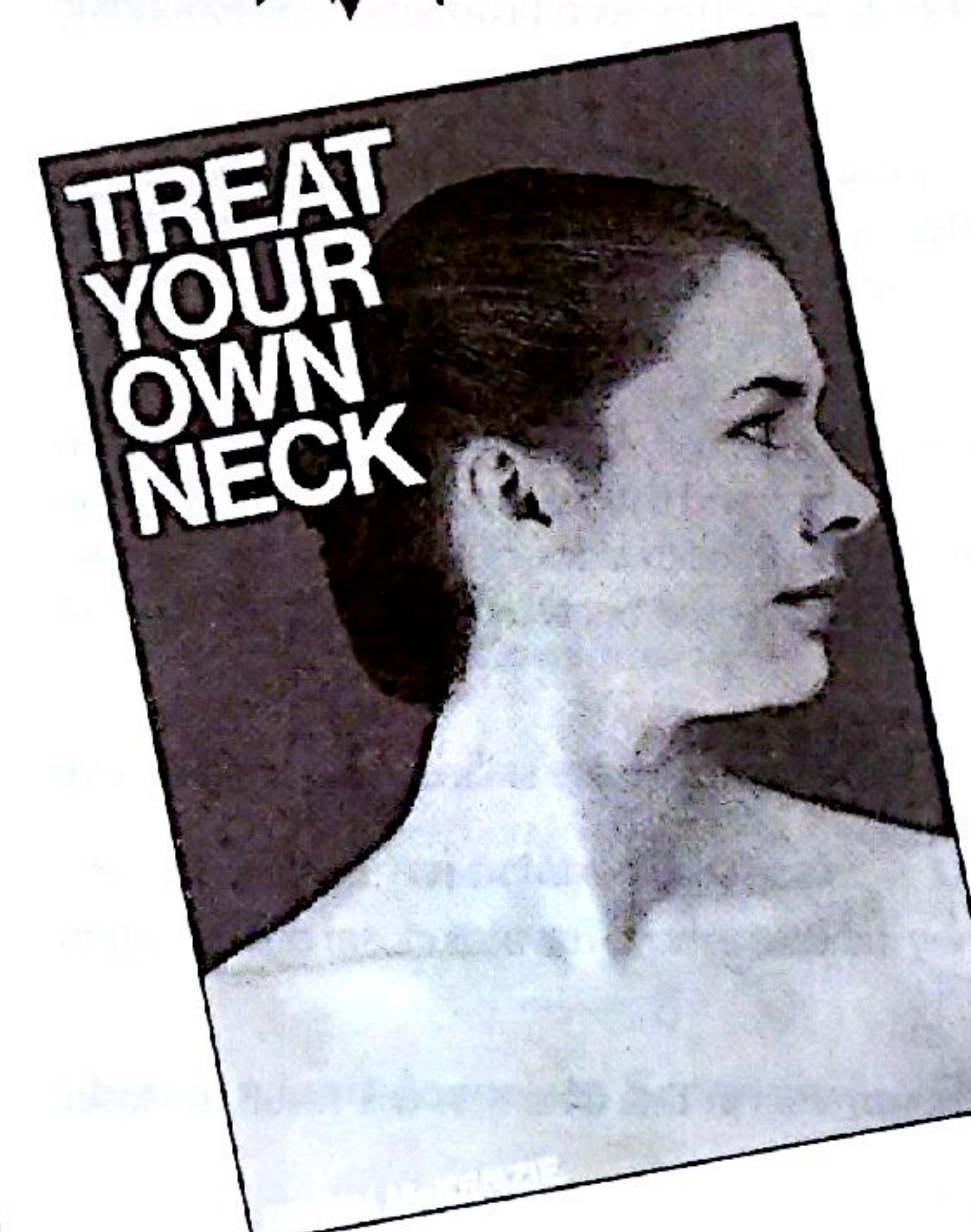
**Only \$50 for the set of two three-hour videotapes. Seeing is believing!**

Send your cheque, made out to A.A.M.M., **now** to:

Dr. Max de Clifford, Convenor, A.A.M.M. Education Sub-committee, 36 Heads Road, Donvale, Victoria, 3111.

# BOOKS TO ASSIST DIAGNOSIS & THERAPY OF SPINAL & CERVICAL INJURY

**NOW  
AVAILABLE!**



A series of four publications including two professional texts written by Robin McKenzie OBE, FNZSP (HONS), FCSP, MNZMTA, a member of the International Society for the study of Lumbar Spine and an acknowledged authority in this field.

## THE CERVICAL SPINE & THORACIC SPINE MECHANICAL DIAGNOSIS & THERAPY

and its companion publication

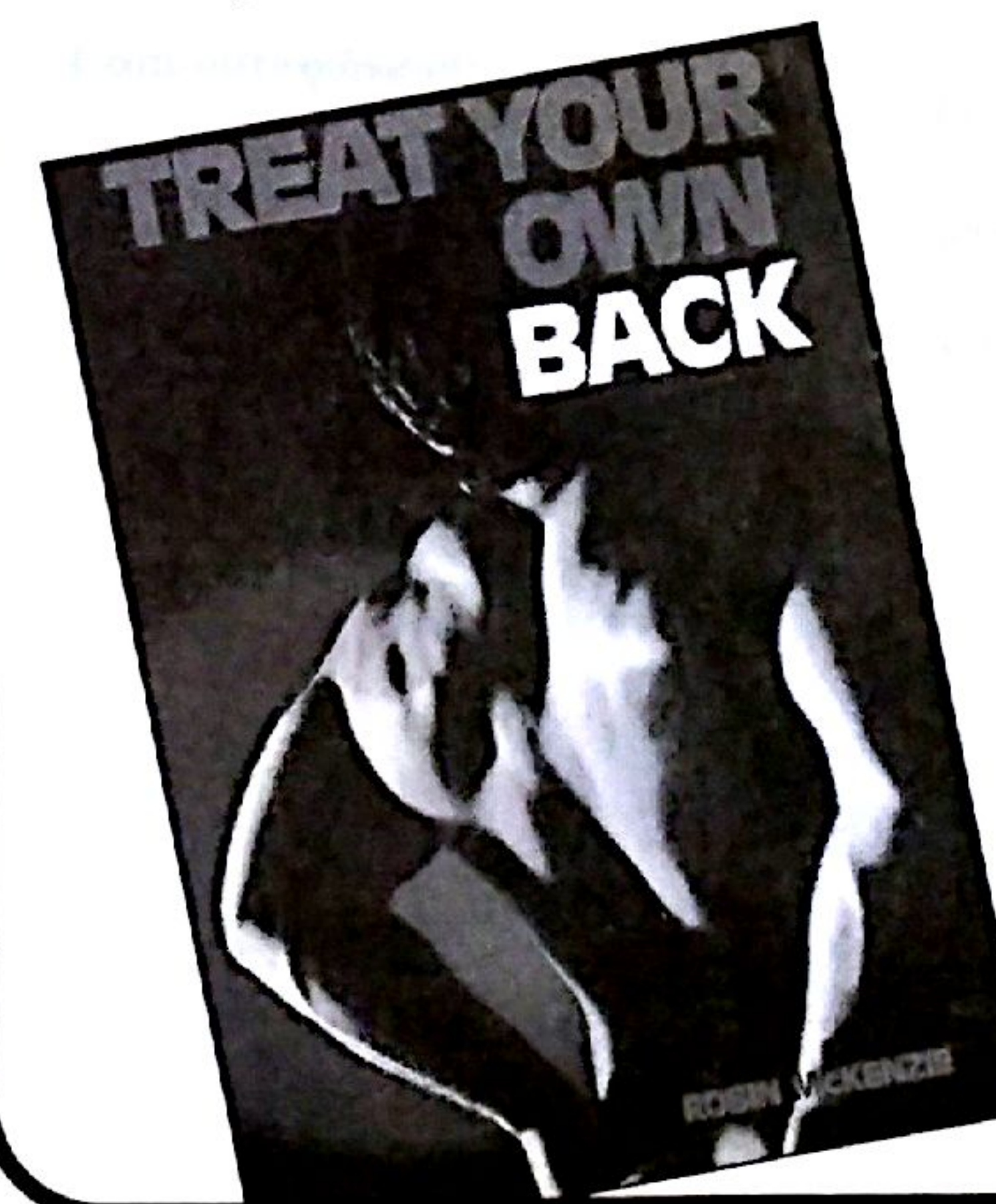
## THE LUMBAR SPINE MECHANICAL DIAGNOSIS & THERAPY

And two easy-to-understand patient handbooks that will assist sufferers to achieve independence through self care.

## TREAT YOUR OWN BACK & TREAT YOUR OWN NECK (pictured)

Practical tests to aid back and neck sufferers, the well illustrated, step by step remedial exercises compliment professional therapy and provide ideal prophylaxis advice and care for your patients.

**DESMAS PTY LTD**  
15 Oliver Street  
INVERELL NSW 2369



For further information please return this coupon to:

**DESMAS PTY LTD**  
PO BOX 85 INVERELL NSW 2360

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

\_\_\_\_\_ P/code \_\_\_\_\_





## MAIL BAG Letters to the editor

*"I had written him a letter....."*



Dear Sir,

As the incoming President of the New Zealand Association of Musculoskeletal Medicine, I would like to affirm our continuing close and friendly relationship with our Australian counterparts.

At our recent Annual Conference, we were privileged to have Professor Nik Bogduk and Dr. Les Barnsley as our principal speakers. Both of them enthralled and enchanted us with the clarity and perceptiveness of their talks, and Professor Bogduk, as is his custom, stimulated a lively discussion. The Conference has been pronounced a resounding success and was thoroughly enjoyed by the attenders.

The Bulletin is valued here for the quality of its articles. Discussions are presently being undertaken by the Secretaries of both the Australian and New Zealand Associations to work out a way in which the Bulletin can be promulgated among the New Zealand members. The Bulletin would then be the obvious avenue for publication of musculoskeletal articles originating in New Zealand.

Another matter to be explored by the Association is the possibility of a combined Annual Meeting. It has been customary in New Zealand to invite overseas speakers to our Annual Conference and it would seem logical to combine both the New Zealand and Australian Annual Conferences so that members on both sides of the Tasman can take advantage of these visitors more economically. Preliminary discussions between the Secretaries are taking place at this time and hopefully in due course a resolution can be found.

Another suggestion has been that the teachers within both Associations and others who are skilled in musculoskeletal practice, should meet together for an advanced educational programme.

All these suggestions are highly laudable and it is pleasing to note that they indicate a move towards closer collaboration between the Australian and New Zealanders.

It is my sincere hope that during my two years as President further movements in this direction will result in closer ties and a continuing good relationship between our Associations.

Yours sincerely,

**Paul Quin**  
President



## N.Z.A.M.M. NEWS

### OFFICE-BEARERS OF THE N.Z.A.M.M., 1992

#### President

##### **Dr. Paul Quin**

P.O. Box 28 - 029, Remuera, 5, Auckland  
telephone (09) 520 4761, fax (09) 520 2316.

#### President-elect

##### **Dr. Angus Johnston**

126 Wade River Road, Whangaparaoa  
telephone (0942) 424 7912.

#### Secretary

##### **Dr. John Malloy**

201 Mt Eden Road, Auckland, 3.  
telephone (09) 631 5863

#### Treasurer

##### **Dr. Mark Johnston**

394 Main Road, Orewa  
telephone (0942) 65437

#### Education Convenor

##### **Dr. Jim Borowczyk**

79 Wilsons Road, St Martins, Christchurch.  
telephone (03) 337 0991

#### North Island Ed. Convenor

##### **Dr. Bill McIntyre**

29 Corinth Street, Auckland, 5.  
telephone (09) 521 5061

#### South Island Associate Treasurer

##### **Dr. Joe Brownlee**

21 Caledonian Road, Christchurch.  
telephone (03) 668 281, fax (03) 668 343

#### South Island Associate Secretary

##### **Dr. Bridget Loughnan**

79 Wilsons Road, St. Martins, Christchurch.  
telephone (03) 337 1470

#### Committee Members

##### **Dr. Charlie Ng**

105 Remuera Road, Remuera, 5.  
telephone (09) 524 4348

##### **Dr. Ruth Highet**

Wellington Sports Medical Clinic  
P.O. Box 7168, Wellington.  
telephone (04) 385 7420

##### **Dr. Peter Catt**

P.O. Box 434,  
New Plymouth.



**Auckland Association Business Sec. Dr. Christine Rodwell**  
20 Tahora Avenue, Remuera, 5.  
telephone (09) 524 8916, fax (09) 520 2316

**Academic Co-ordinator of  
Diplomas of M.M.,  
Past President**

**Dr. Barrie Tait**  
19 Stratford Street, Fendalton, Christchurch.  
telephone (03) 640 430, fax (03) 640 909



### N.Z. DIPLOMA IN MUSCULOSKELETAL MEDICINE

Applications for entry to the course in 1993 close on 1st December, 1992. Late applications may be accepted but a late registration fee will apply. Prospective candidates can obtain a course prospectus and enrolment form by contacting the Enrolment Officer, Distance Teaching Unit, Otago University Extension, P.O. Box 56, Dunedin.

The course has been offered for three years. It embraces nine papers and comprises on-campus and distance teaching instruction. The on-campus instruction concentrates on the teaching of clinical skills of diagnosis, some relevant therapeutic procedures and methods of pain control. The distance teaching programme covers most of the appropriate cognitive material. These home packages include project work and opportunities for interaction via the national teleconference network.

Aspects covered include:

- Clinical diagnosis
- Functional anatomy, physiology, pathophysiology and biomechanics
- Pain
- Regional disorders
- Prevention and Rehabilitation, validity and decision analysis
- Current therapeutics
- Clinical therapeutics

The course for the Postgraduate Diploma in Musculoskeletal Medicine is equivalent to one year's full time academic study. It can be completed over a four year period.



### DIPLOMA GRADUATES, 1990 - 1991

So far, twenty-three members have been successful in the postgraduate course offered by the University of Otago and have gained the Diploma in Musculoskeletal Medicine. Their names, addresses and year of graduation from the course are as follows.

**Dr. Richard Alexander**  
Te Waiora Medical Centre, 1 Ulrich Avenue,  
Hamilton.

1990

**Dr. Joan Allardyce** 1990  
P.O. Box 51,  
Cust,  
North Canterbury.

**Dr. Piers Anderson** 1990  
Howick House Surgery,  
43 Moore Street,  
Howick.

**Dr. Charlie Baycroft** 1990  
P.O. Box 6081,  
Upper Riccarton,  
Christchurch.

**Dr. Steve Bentley** 1991  
Student Health Service,  
University of Otago,  
P.O. Box 56,  
Dunedin.

**Dr. Jim Borowczyk** 1990  
79 Wilsons Road,  
Christchurch.

**Dr. Campbell Brebner** 1990  
95 Mountain Road,  
Epsom,  
Auckland.

**Dr. Peter Catt** 1990  
70 Vivian Street,  
New Plymouth.

**Dr. Hartley Ferrar** 1990  
117 West Belt,  
Rangiora.

**Dr. Mark Johnston** 1990  
394 Main Road,  
Orewa.

**Dr. Di Jones** 1990  
P.O. Box 224,  
Inglewood,  
New Plymouth.

**Dr. Shelley Louw** 1991  
4/14 Armagh Street,  
Christchurch.

**Dr. Mark McLaughlin** 1991  
141 Main South Road,  
Greymouth.

**Dr. Siri Nanayakkara** 1990  
P.O. Box 150,  
Gisborne.

**Dr. Paul Nicholson** 1991  
Main Methven Road,  
Rakaia,  
Mid Canterbury.

**Dr. Tom Ord** 1990  
64b Clyde Road,  
Browns Bay,  
Auckland.

**Dr. Robin Palmer** 1990  
P.O. Box 227,  
Kerikeri  
Northland.

**Dr. Donald Patterson** 1991  
92 Warwick Street,  
Wilton,  
Wellington.

**Dr. Janet Richardson** 1991  
P.O. Box 47,  
Motueka.

**Dr. Lindsay Strang** 1991  
P.O. Box 25115,  
Christchurch.

**Dr. Grant Thompson** 1990  
P.O. Box 690,  
Whangarei.

**Dr. Philip Watson** 1991  
Suit 26, McCullough Centre,  
Sunnybank,  
Queensland, 4109.

**Dr. Hammond Williamson** 1991  
P.O. Box 47,  
Waimate.



# General Practitioners' Perceptions About the Management of Back Pain

Alex Brown, Jodie Clarke, Bill Clough, Karyn Cuthbert, Fleur Occhilupo,  
Bron Robinson, Char Weeks, Lanka Wijesena  
Faculty of Medicine, The University of Newcastle, N.S.W., 2308

## ABSTRACT

*A cross-sectional survey of randomly selected general practitioners was conducted by mail to assess the doctors' perceptions about back pain, including their knowledge of its prevalence, severity and prognosis, their attitudes towards patients with back pain and their perceived roles in back pain management. The study also aimed to assess general practitioners' beliefs in various management options and the extent to which these are implemented.*

*The results showed that the general practitioners surveyed were uncertain about many aspects of back pain and its management. However, most demonstrated realistic perceptions about the prevalence of the problem and about its prognosis. Generally, they were empathetic towards back pain patients but many seemed confused about management strategies and a significant majority (87%) expressed needs for further education in this field.*

## INTRODUCTION

Back pain is one of the most underestimated health problems facing medicine today<sup>(1)</sup>. It is one of the most difficult conditions to manage and accounts for at least 5% of the problems seen in general practice<sup>(1)</sup>, with a lifetime prevalence of approximately 80%<sup>(2)</sup>.

Among conditions that limit activity, back problems are the most prevalent<sup>(2)</sup>. They are second only to the common cold as a cause of work time lost and are a major socioeconomic problem ranking foremost as a cause of disability in people younger than 45 years of age<sup>(2)</sup>.

As these are the most productive years of the average worker, the immense financial costs (in terms of lost workdays, increased utilisation of health care services, compensation payments, plus decreased work productivity) cannot be neglected. Thus, back pain not only causes personal suffering but further morbidity is encountered on a community scale. Fifty out of every thousand industrial workers in Britain have time off work each year because of back pain, accounting for 11.5 million working days lost per year<sup>(3)</sup>. In the United States, back pain accounts for about 20% of all dollars expended on health care<sup>(3,4)</sup>. Unfortunately, comparative data for Australia is not yet available.

In most cases, general practitioners are the first to be consulted by people with back pain. A New Zealand study of 120 patients with back pain reported that 93% consulted a General Practitioner (GP) first<sup>(5)</sup>. This would indicate that GPs have a fundamental role in the management of back pain. It is important that the GP

have an adequate knowledge and a confident approach to the management of back pain, so as to provide optimal care and maximal patient satisfaction. Therefore the aims of this study were to assess GPs' approach to the patient with back pain, their beliefs in the various management options and their perceived need for further information.

The GPs' approach to the patient with back pain is likely to be a critical determinant of patient satisfaction and treatment outcomes<sup>(6)</sup>. Research indicates that there is widespread patient dissatisfaction with respect to GPs' overall management of back pain<sup>(7)</sup>. One US study reported that patients with back pain were less satisfied with the standard of care they received from GPs compared to that from chiropractors<sup>(8)</sup>. The patients reported that they received more information about back pain and its course from the chiropractors and perceived that the chiropractors were more concerned about their wellbeing and more confident about dealing with their presenting problems<sup>(8)</sup>.

The first aim of this study was to assess GPs' overall approach to problems associated with back pain, including their knowledge of the prevalence, severity and prognosis of back pain, their attitudes towards patients with back pain and their perceived roles in management.

The second aim of the study was to assess GPs' beliefs in various management and referral options and the extent to which these are implemented. Fry (1983) stated that the GP's role is made difficult in that the true causation and pathology of back pain is often uncertain, precise diagnosis is difficult and treatment is poorly understood<sup>(9)</sup>. At present, there is no agreement as to

which forms of treatment are the most effective and the literature in this area is confusing and contradictory. It is highly likely that this confusion is reflected in the beliefs and practices of the doctors themselves. Practitioners often have little confidence in their ability to manage patients with back pain effectively and feel in need of further information.

Therefore a third aim was to assess GPs' level of confidence in their ability to manage back pain and their need for further information.

## METHODOLOGY

### Research Design

A mail-out cross-sectional survey of randomly selected GPs in the Hunter Region of New South Wales was undertaken. Although the authors recognised that mail-out surveys are often associated with poor consent rates, several general practitioner surveys conducted in New South Wales have elicited adequate response rates.

In their study of GPs and their knowledge, attitudes and behaviour about the management of HIV infection and AIDS, the Commonwealth AIDS Research Grants Committee Working Party (1990) achieved a 74% response rate to a newly developed questionnaire<sup>(10)</sup>. Similarly, 73.5% of participants responded to Bowman, Redman, Reid and Sanson-Fisher's 1990 study of knowledge and attitudes in relation to the provision of Pap smear screening<sup>(11)</sup>.

A mail-out questionnaire was considered the most appropriate research tool for this project for several reasons. Firstly, the success of the two research studies cited above indicated that high response rates were attainable. Secondly, the authors' concern was to impinge minimally on the selected GPs' time. It was felt that a telephone survey of GPs would have been difficult for the following reasons:

- Unavailability on first or subsequent contact.
- Issues associated with interrater reliability.
- Budget limitations would have restricted the sample size of a telephone survey, given that some of the selected GPs were practising in rural areas which would necessitate STD telephone calls.

### Reference Population and Study Population

The reference population was all GPs in New South Wales. The source population was all GPs in the Hunter Region of New South Wales. The sample was randomly

selected from the Hunter Postgraduate Institute's mailing list of all medical practitioners in the Region. This list includes all GPs in the region, regardless of place of qualification, and is continually updated by returned mail, medical representatives reporting locality changes etc.

After consultation with a biostatistician it was concluded that a sample size of 67 GPs would be sufficient to estimate the true prevalence of the chosen variables concerning GPs and back pain, with a standard error of  $\pm 12\%$  when given the worst case scenario of 50% prevalence for any given item ( $=0.05$ ). Assuming a response rate of around 70%, contact was needed with at least 100 GPs. Questionnaires were sent to 102.

### Questionnaire

The questionnaire was designed to assess:

1. GPs' approach to the patient with back pain:
  - perceptions of the prevalence, severity and prognosis of back pain
  - attitudes towards patients with back pain
  - perceived role in patient management
2. Belief in management options:
  - belief in the value of various management options
  - performance of various management options
  - referral practices
3. Need for further information:
  - confidence in ability to manage back pain effectively
  - desire for further information
  - current information source

These areas were developed from review of the literature following an extensive Medline search inclusive of the years 1985-1991 using "backache", and the variables: "attitude to health", "knowledge", "perception", "family physician", "general practitioners" and "beliefs". Specific items were developed in consultation with academic general practitioners and specialists involved in the treatment of back pain. The questionnaire was then reviewed by a number of GPs for clarity of expression and relevance of the items, and modified accordingly.

The questionnaire, with accompanying covering letter and a reply paid envelope, was mailed to the study sample. Two weeks later a reminder letter was sent to all GPs who had not yet replied. Finally a telephone call was made to the non-responders after a further two weeks.

Data was coded and entered onto the mainframe computer and analysed using the SAS statistical package.



## RESULTS

### Demographics

The sample size of this study was 102 GPs. Fifteen were not contactable due to presumed change of address and four were no longer GPs. Of the 83 remaining GPs sixty nine consented to participate in the survey (consent rate 83%). The fourteen who did not participate were all contacted by telephone; seven declined to participate and seven expressed a willingness to do so on the phone, however their completed questionnaires were never received.

The characteristics of the respondents are presented in Table 1.

Where available, data from a study conducted of all GPs in New South Wales was used for comparison<sup>(12)</sup>. There were no appreciable differences in gender distribution or whether GPs were engaged in solo or group practice. However, for years in practice, the respondents had a higher population in the less than ten year bracket (51% as compared to 27%). This finding could indicate a response bias or illustrate a lower mean age of the Hunter Regions GPs. Almost half the GPs had postgraduate qualifications and nearly half had been to a back pain workshop in the last 15 years (see Figure 1 and Table 2).

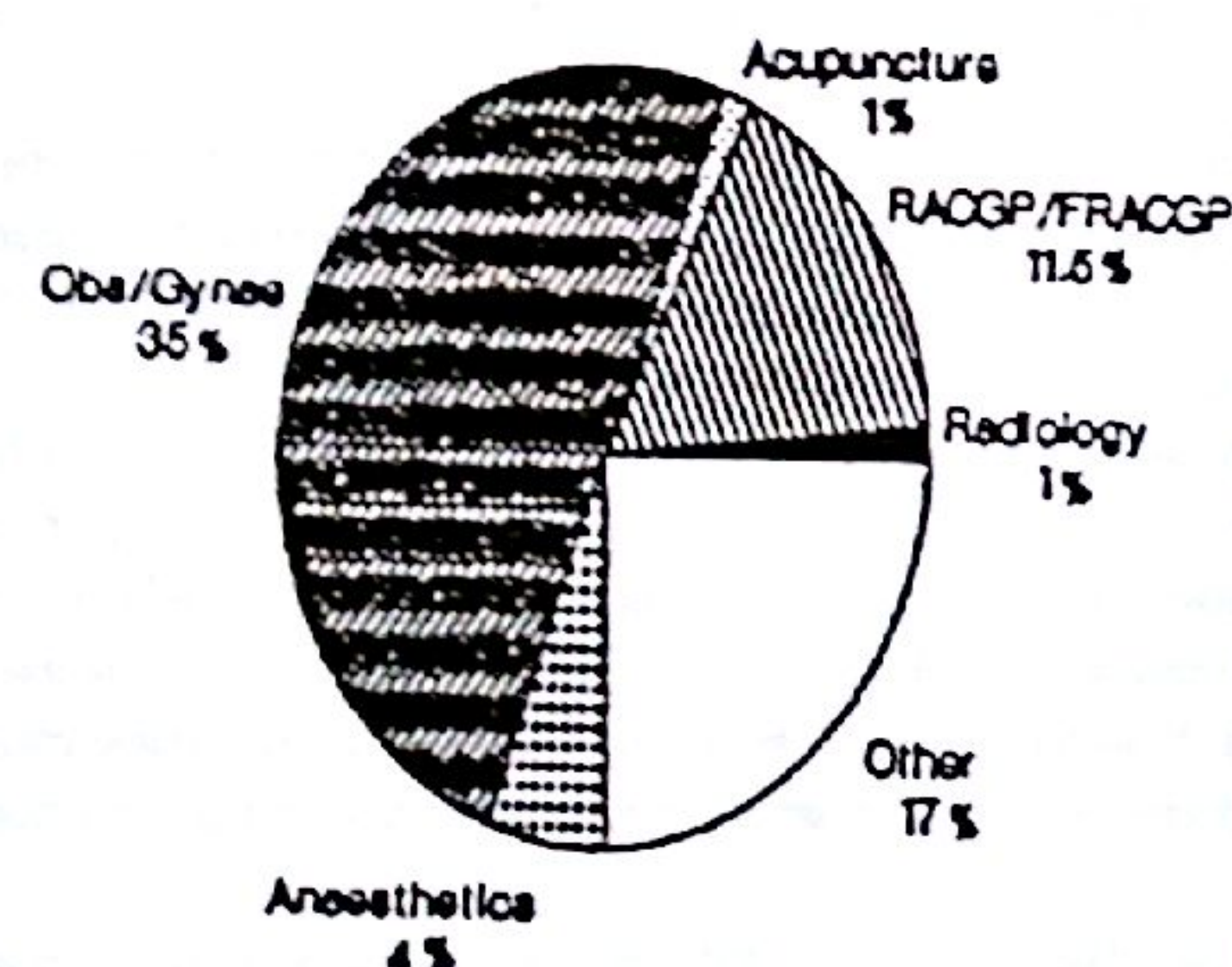


Fig. 1 Postgraduate Qualifications

### General Practitioners' Perceptions of the Prevalence of Back Pain

The GPs' perceptions of back pain are presented in Table 3. 56% indicated that back pain is underestimated as a community health issue and 75% indicated that more than 60% of people will experience back pain at some time in their lives. With reference to the prognosis

of back pain, the majority of GPs (70%) estimated that 60% to 90% of patients will recover in three months.

In our survey, over 90% indicated that less than 10% of back pain patients would require surgery, which correlates with published data<sup>(9)</sup>. However, 34% of GPs underestimated the proportion that would require surgery. Only three GPs overestimated the proportion requiring surgery. These comparisons will be explained in the discussion.

49% of GPs indicated that 0-19% of patients require no medication. Most GPs felt that narcotics were not necessary, preferring NSAIDs and simple analgesia in the management of back pain. 81% of GPs felt that less than 20% of the patients required narcotics, while 35% and 82% felt that more than 20% of patients required NSAIDs and simple analgesia, respectively.

### Attitudes Towards Patients

As shown in Table 4, 62% of the GPs believed that people with back pain always or often have diminished quality of life. 88% of GPs felt that patients always or often are genuinely in pain, while 35% felt that patients are always or often subject to unnecessary criticism.

On the other hand, 45% of GPs thought that patients often or sometimes only want to receive workers' compensation, and 30% felt that sometimes they only want a certificate for work or sickness benefits. 41% of the GPs believed that patients are often or sometimes neurotic. 26% felt that sometimes patients are seeking narcotics. Overall then, GPs appear to be largely sympathetic towards patients with back pain.

### General Practitioners' Roles

Table 5 shows that 39% of GPs felt that one of their main roles was to refer patients, however the majority felt that their main role was to provide some form of treatment, with 75% indicating that they should provide initial care or treatment and 82% stating that their main role was to provide shared care. Only 43% felt that their major role was to provide treatment from start to finish.

Over 80% stated that they consider providing pain relief as an important part of their role.

### Belief in the Value of Various Management Options

The alternate therapies to pharmacological treatment of back pain, presented to the GPs in the questionnaire, are shown in Table 6. Appreciable percentages were not sure of the worth of some alternate therapies, especially hypnosis (41%) and acupuncture (39%). There was little support for herbalism, 48% felt that it was of

no use and no practitioners felt that it was very worthwhile. There was good support for massage, manipulation, and relaxation as 72%, 59% and 68% respectively felt that these were worthwhile or very worthwhile.

Appreciable percentages of practitioners indicated that they did not perform any of these alternate therapies (Table 7). Only 23% offer relaxation techniques, 19% perform manipulation and 14% perform massage.

### Referral

The most common professions to which GPs often or always referred were physiotherapy (72%), rehabilitation (24%) and orthopaedic surgery (24%). The GPs, in general, rarely or never referred to herbalists, naturopaths, homeopaths, general surgeons, psychiatrists or osteopaths for the treatment of back pain, which is what we would expect given the GPs' views on the treatment options provided by these practitioners. The other options, including chiropractors, were rated largely under "sometimes" or "rarely", perhaps reflecting that the use of these options is limited to specific causations of back pain such as arthritis (for which they may refer to rheumatologists).

GPs were asked for reasons for referral to the most commonly referred professions. Table 9 shows that for most of these professions, management and/or treatment was the most likely reason for referral with 37% referring to an orthopaedic surgeon, 30% referring to rehabilitation and 65% to physiotherapy for this reason. Few referred on patients' request or for workers' compensation reasons, with non referring to osteopaths, physiotherapy or acupuncture for these reasons.

### Confidence of Management and Need for Further Information

68% agreed or strongly agreed that available treatment allows them to manage back pain adequately. However, the proportion that did not believe current methods allowed adequate treatment was still notable: 0-13% disagreed or strongly disagreed (Table 10).

In general, GPs were confident about their success rates even though they show marked uncertainty about other treatment options: 56% felt that they managed more than 70% of cases of back pain effectively.

87% of GPs indicated that they would like more information about back pain. 78% indicated that they would attend a course, 59% only if it did not encroach on practice time. No-one indicated that they wanted an incentive to do so.

The main sources of information about back pain for these doctors are journals (82%), colleagues (58%) and postgraduate education (58%). The least used source was audio-visual (11%) and only 20% indicated that their undergraduate education was a source of back pain information.

## DISCUSSION

This study was designed to assess:

- GPs' perceptions of the prevalence and prognosis of back pain.
- their attitudes towards patients with back pain.
- their definition of their role in the treatment of back pain.
- their belief in and use of various treatment options.
- their willingness to refer to various health care providers.
- GPs' confidence in the treatment of back pain.
- GPs' perceived need for further information about back pain and its treatment.

The results of this study indicate that Hunter GPs in general have a realistic view of the problem of back pain and at the very least may provide an empathic focus for possible further intervention.

It is not possible to draw any conclusions about the efficacy or non-efficacy of GPs in relation to the management of back pain on the basis of this study. This would require further assessments.

One of the strengths of the study was that a high consent rate was achieved. It is likely that the study respondents are representative of the study sample. However, generalisability of the study findings may be limited by the fact that the study respondents tended to be in practice for fewer years when compared to all New South Wales general practitioners<sup>(12)</sup>. This may be due to response bias, in which less experienced GPs were more likely to respond, a sampling bias, in which less experienced GPs were selected, or a bias in the study population from which the participants were sampled. The sample was selected from the Hunter Postgraduate Institute list which, in theory, includes all GPs in the Hunter Region. Whilst the list is regularly updated, the results indicated that this process was imperfect, given that four of the sample selected were no longer GPs and another fifteen were not contactable. It is possible that the list is more accurate for recently graduated GPs and these had a higher probability of being contacted.



Another potential bias in these results is the problem of self-report. Study participants may either under or overestimate their behaviour in order to provide a perceived desired response. The data reported must be interpreted in the light of these possible biases.

The GPs surveyed showed realistic perceptions in regards to the prevalence and prognosis of back pain. 75% of GPs indicated that more than 60% of people will experience back pain at some time in their lives. This is consistent with published data which indicates that the majority of the population will experience back pain at some time<sup>(2)</sup>. The majority of GPs (70%) also estimated that between 60% and 90% of patients will recover in three months after the onset of back pain. Available data suggests that this information is correct; the literature shows that between 70% and 95% will recover in three months<sup>(13)</sup>.

The majority of the studied GPs had reasonable perceptions of the role of surgery in the management of back pain. 90% of the GPs indicated that less than 10% of patients with back pain would require surgery and it is estimated elsewhere that between 8% and 10% of patients will require surgery<sup>(3)</sup>. Of the GPs who indicated that less than 10% would require surgery however, only 10% were close to the given rate of 8% to 10%; the remainder underestimated those who would require surgery as being between 1% and 5%. One GP estimated that 30% of people would require surgery at some stage of their illness. This is of some concern and coupled with the percentage underestimating the need for surgery, suggests that there is a need for more information in this regard.

In general, the GPs in this study showed favourable attitudes towards the patient with back pain. 62% believed that people with back pain always or often have a diminished quality of life and 88% felt that patients with back pain are always or often genuinely in pain.

This however may highlight discrepancies between what the patient perceives and how the GP actually feels towards such patients. For example, one study presented data suggesting that patients perceive GPs as showing less empathy than chiropractors<sup>(8)</sup>. This area must be addressed if patients are to feel totally confident with their doctors and the management strategies they offer.

The studied GPs believed that they had a role to play in the management of back pain. However, the results of our study indicate that there remains some confusion about the definition of this role. As this portion of the questionnaire involved questions that were not mutually exclusive, interpretive powers may be reduced. However, 58% believed that referral was not their role. A similar trend was apparent in regards to providing treatment from start to finish. 43% believed treatment was their

primary role, while 54% believed it was not. These figures support the opinion of Fry (1983) who suggested that GPs' roles are poorly understood<sup>(9)</sup>.

These figures may also be of importance in regard to the management of back pain. As data suggests that the majority of back pain cases will resolve within three months of onset, the 54% who did not think that their role was to provide care from start to finish may be further accentuating the health care over-utilisation associated with back pain<sup>(14,15)</sup>.

Pleasingly, 81% of GPs believed their role was one of shared care. This is consistent with data which suggests that a multi-disciplinary approach to back pain is the most effective<sup>(15)</sup>.

GPs' beliefs about the value of drug treatment options showed some support for simple analgesics and alternative therapies, with only limited use of narcotic analgesics.

Most GPs felt that simple analgesics gave adequate pain relief for the majority of patients. Also, most felt that only a minority required narcotic analgesics. This is encouraging, since existing data indicates that in the treatment of back pain, narcotics may delay recovery, provide pain reinforcement and possibly begin a cycle of addiction<sup>(15)</sup>.

In regards to non-drug therapies GPs showed support for massage, spinal manipulation and relaxation. These were also the therapies most performed by GPs themselves. Studies on the effectiveness of these treatments have not shown any real long-term benefits in regards to back pain. However, they do have immediate effects in reducing levels of pain<sup>(16)</sup>. In addition to this, these treatments have been shown to decrease work absenteeism and to enable earlier return to work<sup>(16)</sup>. This has positive effects in reducing the burden of back pain on society.

Our study showed that only 24% of the GPs believed that acupuncture was worthwhile or very worthwhile, while 39% were unsure of its efficacy. It is thought that acupuncture has an established role in the treatment of back pain. In one randomised controlled trial, 50% of the experimental group had decreased levels of pain following acupuncture compared to no change in pain for any of the control group<sup>(17)</sup>. This reflects a need for education of GPs about the role of acupuncture and its efficacy in the management of back pain. Again, the need for education, and the GPs' confusion about the management of back pain, were highlighted when GPs were unsure about the efficacy of other treatments (hypnosis 41%, herbalism 24%). However, data has yet to establish the effectiveness of these modalities, so the focus there is not so much on educating the GP as on investigating the treatments themselves.

GPs most commonly referred to physiotherapists (72%), rehabilitation (24%), and orthopaedic surgeons (24%), and offered treatment and/or management as their reasons for doing so. Most GPs rarely or never referred to herbalists, naturopaths or osteopaths. Although data is as yet unavailable to validate such therapies, it is suggested that GPs are unwilling to accept some alternative therapies in managing back pain and this was a consistent response from the sample GPs.

The data has shown that patients perceive that GPs express less confidence than chiropractors in relation to the management of back pain. Most of the studied GPs believed that they were managing back pain adequately, yet there remained 13% who thought that they were not doing so and a further 32% of GPs did not know whether they were or not. In the light of these figures it is difficult to see how a patient can perceive a GP as confident in treating back pain when a significant proportion are either unsure or do not believe they are doing an adequate job.

87% of GPs also highlighted a need for further information. This figure indicates that GPs are confused about their roles in management, and about the efficacy of various options, and realise that their knowledge about back pain is not adequate. In addition a high percentage are willing to attend a seminar on back pain without incentive.

Interestingly, many GPs placed little value on their undergraduate education as a source of information on back pain. This may have implications for future educational strategies.

## CONCLUSION

In summary, this survey has shown that GPs are somewhat confused about their roles in the management of back pain and about the efficacy of various treatment options. However, before issues of GP education can be addressed, uncertainties about the pathophysiology of back pain must be clarified and little headway can be made until causative mechanisms are more clearly defined.

The study also found that GPs are at the very least empathetic towards patients with back pain. In addition, GPs hold an important position in relation to the management of back pain and are patients' main focus for treatment strategies. They seem to maintain this position in patients' perceptions despite their own confusion about their effectiveness in the treatment of back pain and their own perceived needs for further information and education at all levels of practice.

**TABLE 1**  
**Comparison of studied group with RACGP Members**

	Studied Group		RACGP
Gender	Male (53)	76.8%	82.3%
	Female (16)	23.2%	16.5%
Practice	F/T (59)	85.5%	-
	P/T (10)	14.5%	-
	Solo (20)	29.0%	36.5%
	Group (49)	71.0%	63.7%
Years in Practice	1-10 (35)	50.7%	27.0%
	>10 (34)	49.3%	73.0%



**TABLE 2**  
**Other characteristics of studied group**

Other members of group practice	Specialist	(5)	7.2%
	Nurse	(13)	18.8%
	Acupuncturist	(4)	5.8%
	Physiotherapist	(3)	4.3%
Post-graduate qualifications	Yes	(36)	52.2%
	No	(32)	46.3%
Attended a backpain workshop in last five years.	Yes	(29)	42.0%
	No	(39)	56.5%

**TABLE 3**  
**General Practitioner's Perceptions of Back Pain**

Percentage of the adult population affected by back pain	0-39%	(6)	8.7%	
	40-59%	(10)	14.5%	
	60-79%	(31)	45%	
	80-99%	(21)	30%	
Percentage of back pain which will resolve within three months of onset	0.39%	(11)	15.9%	
	40-59%	(8)	11.6%	
	60-99%	(48)	69.6%	
Percentage of people with back pain who will require surgery	1%	(25)	36.2%	
	2%	(5)	7.2%	
	3%	(3)	4.3%	
	4%	(1)	1.4%	
	5%	(23)	33.3%	
	10%	(7)	10.1%	
	20%	(2)	2.9%	
	80%	(1)	1.4%	
Percentage of patients requiring	0.19%	20-39%	40-59%	60-99%
No medication	(34) 49.3%	(13) 18.8%	(13) 18.8%	(3) 43.0%
Simple Analgesia	(9) 13.0%	(29) 13.0%	(18) 26.1%	(10) 14.4%
Narcotic analgesia	(56) 81.2%	(8) 11.6%	-	-
NSAIDs	(7) 10.1%	(31) 44.9%	(15) 21.7%	(13) 18.8%

**TABLE 4**  
**General Practitioner's Attitudes Towards Patients**

	ALWAYS/OFTEN		SOMETIMES		RARELY/NEVER	
	(n)	%	(n)	%	(n)	%
People with back pain:						
Have a diminished quality of life	(43)	62.3	(22)	31.9	(2)	2.9
Only want a certificate for work/sickness benefit	(0)	0.0	(26)	37.7	(41)	59.4
Are genuinely in pain	(61)	88.4	(5)	7.2	(0)	0.0
Only want to receive workers' compensation	(1)	1.4	(30)	43.5	(35)	50.7
Are seeking narcotics	(18)	26.1	(48)	69.6	(0)	0.0
Are subject to unnecessary criticism	(24)	34.7	(41)	59.4	(2)	2.9
Are neurotic	(1)	1.4	(27)	39.1	(39)	56.5

**TABLE 5**  
**General Practitioner's Main Roles**

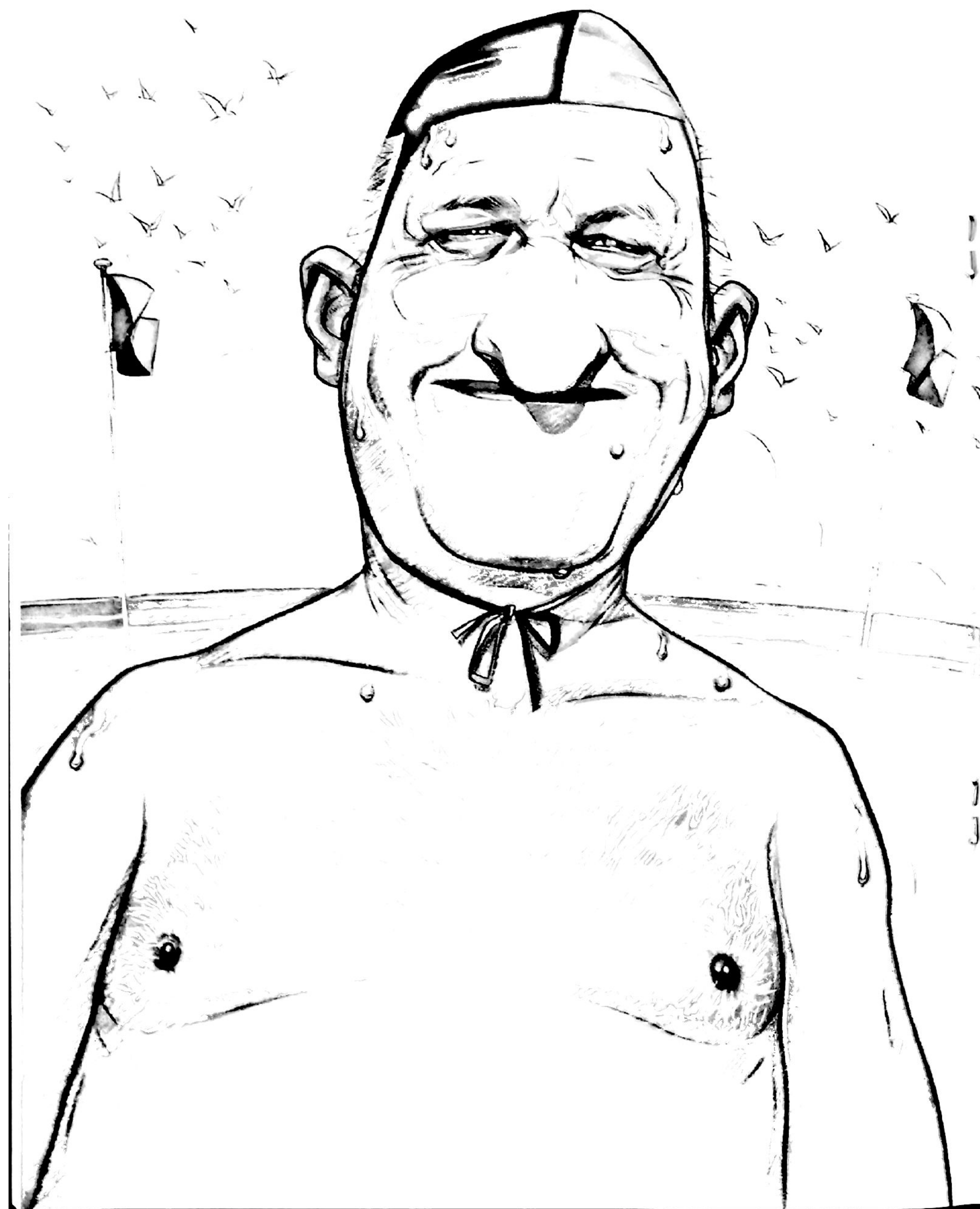
	YES		NO	
	(n)	%	(n)	%
To refer	(27)	39.1%	(40)	58%
To provide treatment from start to finish	(30)	43.5%	(37)	53.6%
For initial care/treatment	(52)	75.4%	(15)	21.7%
To provide shared care	(56)	81.2%	(11)	15.9%
To provide pain relief	(57)	82.6%	(10)	14.5%
Other	(11)	15.9%	(55)	79.7%

**TABLE 6**  
**Belief in the various management options**

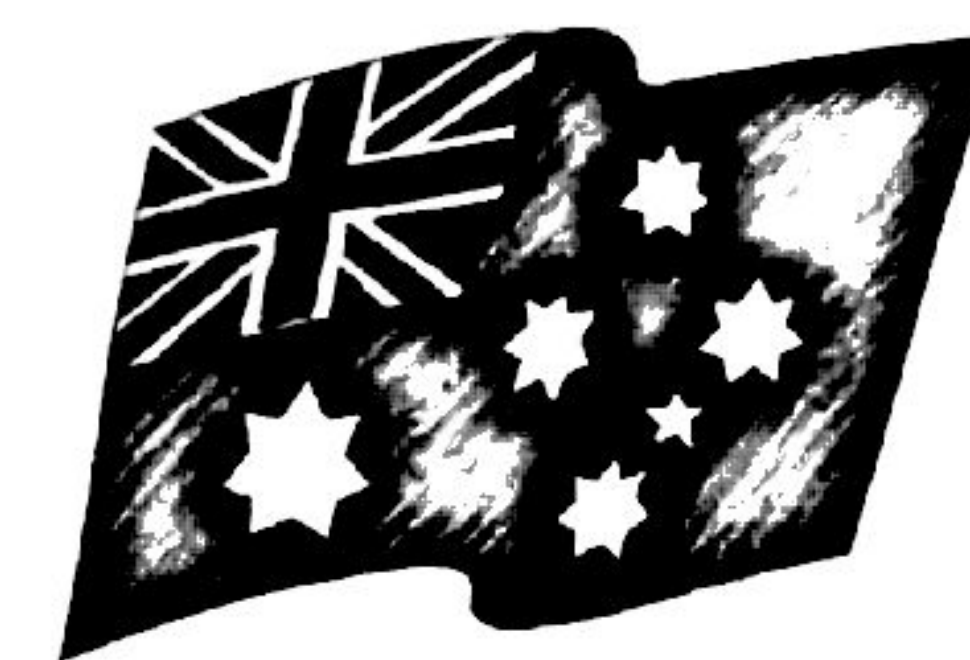
(V.WORTH = Very worthwhile; WORTH = Worthwhile; NOT VERY = Not very worthwhile)

	V.WORTH		WORTH		NOT SURE		NOT VERY		NO USE	
	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%
Acupuncture	(1)	1.4%	(16)	23.2%	(27)	39.1%	(17)	24.6%	(4)	5.8%
Manipulation	(4)	5.8%	(37)	53.6%	(13)	18.8%	(6)	8.7%	(5)	7.2%
Massage	(13)	18.8%	(37)	53.6%	(11)	15.9%	(4)	5.8%	(1)	1.4%
Hypnosis	(0)	0.0%	(9)	13%	(28)	40.6%	(17)	24.6%	(11)	15.9%
Relaxation	(7)	10.1%	(40)	58%	(10)	14.5%	(8)	11.6%	(1)	1.4%
Herbalism	(0)	0.0%	(1)	1.4%	(17)	24.6%	(14)	20.3%	(33)	47.8%





Before prescribing, please review Product Information. In this publication, Product Information can be found by referring to the Advertisers' Index.



# The blokes think it's beaut.

*Voltaren*  
diclofenac sodium

The world's most popular anti-inflammatory.



For more information, contact your local Voltaren distributor. In Australia, contact your local distributor. In the UK, contact your local distributor. In the USA, contact your local distributor.

Registered trademark of Novartis AG





**TABLE 7**  
**Performance of Alternate Therapies**

	YES	NO
Acupuncture	(4) 5.8%	(63) 91.3%
Manipulation	(13) 18.9%	(54) 78.3%
Massage	(10) 14.5%	(57) 82.6%
Hypnosis	(2) 2.9%	(65) 94.2%
Relaxation	(16) 23.2%	(51) 73.9%
Other	(21) 30.4%	-

**TABLE 8**  
**General Practitioner's Referral Patterns**

	ALWAYS	OFTEN	SOMETIMES	RARELY	NEVER
Orthopaedic Surgeon	(3) 4.3%	(14) 20.3%	(41) 59.4%	(10) 14.5%	(0) .0%
General Surgeon	(0) .0%	(0) .0%	(2) 2.9%	(15) 21.7%	(47) 68.1%
Chiropractor	(0) .0%	(1) 1.4%	(18) 26.1%	(18) 26.1%	(27) 39.1%
Osteopath	(0) .0%	(0) .0%	(7) 10.1%	(14) 20.3%	(43) 62.3%
Homeopath	(0) .0%	(0) .0%	(1) 1.4%	(3) 4.3%	(60) 87.0%
Naturopath	(0) .0%	(1) 1.4%	(0) .0%	(6) 8.7%	(57) 82.6%
Herbalist	(0) .0%	(0) .0%	(0) .0%	(4) 5.8%	(59) 85.5%
Rehabilitation	(1) 1.4%	(16) 23.2%	(42) 60.9%	(7) 10.1%	(0) .0%
Physiotherapist	(3) 4.3%	(46) 66.7%	(17) 24.6%	(1) 1.4%	(0) .0%
Acupuncturist	(0) .0%	(0) .0%	(13) 18.8%	(34) 49.3%	(17) 24.6%
Psychiatrist	(0) .0%	(0) .0%	(7) 10.1%	(41) 59.4%	(17) 24.6%
Pain Clinic	(0) .0%	(1) 1.4%	(34) 49.3%	(28) 40.6%	(3) 4.3%
Rheumatologist	(0) .0%	(1) 1.4%	(42) 60.9%	(23) 33.3%	(1) 1.4%
Other	(1) 1.4%	(5) 7.2%	(7) 10.1%	(3) 4.3%	(10) 14.5%

**TABLE 9**  
**Reasons for Referral**

	ASSESS/2nd	Mx/Rx	PT REQUEST	A,B&C	WORK COMP
Orthopaedic Surgeon	(14) 20.2%	(26) 37.5%	(1) 1.4%	(16) 23.1%	(1) 1.4%
Chiropractor	(0) .0%	(11) 15.8%	(3) 4.3%	(1) 1.4%	(0) .0%
Osteopath	(0) .0%	(2) 2.8%	(0) .0%	(1) 1.4%	(0) .0%
Rehabilitation	(8) 11.5%	(21) 30.3%	(1) 1.4%	(9) 12.9%	(5) 7.2%
Physiotherapist	(0) .0%	(45) 65.1%	(0) .0%	(5) 7.1%	(0) .0%
Acupuncturist	(0) .0%	(10) 14.4%	(0) .0%	(2) 2.9%	(0) .0%
Pain Clinic	(1) 1.4%	(32) 31.8%	(1) 1.4%	(3) 4.3%	(1) 1.4%
Rheumatologist	(14) 20.2%	(11) 15.9%	(0) .0%	(8) 11.5%	(0) .0%
Other	(3) 4.2%	(3) 4.2%	(0) .0%	(3) 4.3%	(0) .0%

A: ASSESS/2nd = Assessment/Second Opinion

B: Mx/Rx = Management/Treatment

C: PT REQUEST = Patient Request

WORK COMP = Workers' Compensation

**TABLE 10**  
**Confidence in Management and Need for Further Information**

		(n)	%
Available treatment options	Strongly Agree	(5)	7.2
allow G P's to manage	Yes, Agree	(42)	60.9
back pain adequately	Don't Know	(11)	59.9
	Disagree	(8)	11.6
	Strongly Disagree	(1)	1.4
Percentage of back pain	0-49%	(16)	23.2
able to manage effectively	50-69%	(15)	21.7
	70-89%	(25)	36.2
	90+%	(14)	20.3
Would like more knowledge	Yes	(60)	87
	No	(7)	10.1
Prepared to attend a course	Yes, prepared to give up time	(13)	18.8
	Yes, if not encroaching on time	(41)	59.4
	No	(7)	10.1
Main sources of information		YES	NO
	Journals	(57) 82.0%	(11) 15.9%
	Colleagues	(40) 58.0%	(28) 40.6%
	Seminars/Workshops	(25) 36.2%	(43) 62.0%
	Books	(25) 36.2%	(43) 62.0%
	Audio Visuals	(8) 11.6%	(60) 87.0%
	Undergraduate	(14) 20.0%	(54) 78.3%
	Postgraduate	(40) 58.0%	(28) 40.6%
	Other	(3) 4.3%	(63) 91.3%

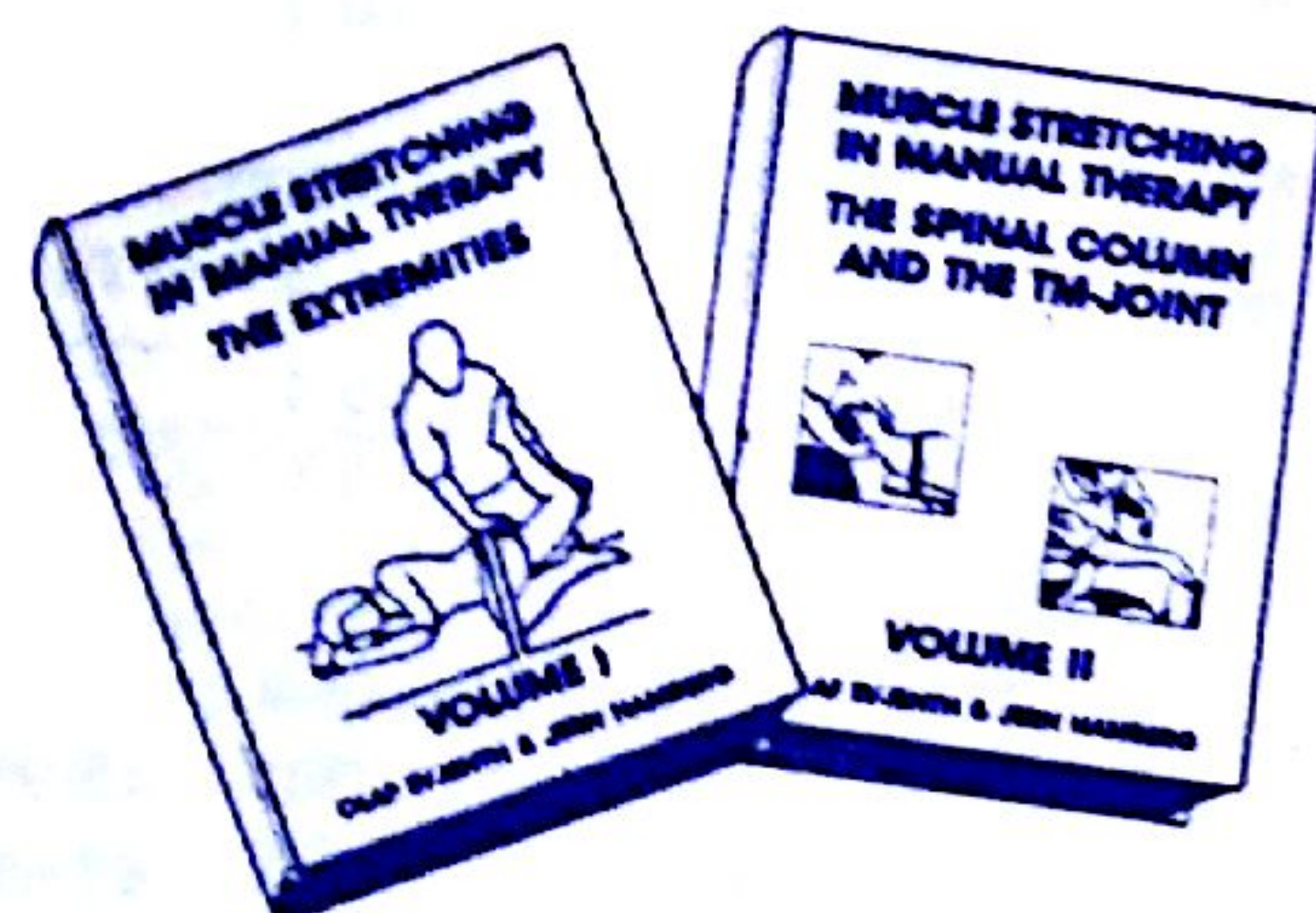
## References

1. Murtagh J, Findlay D, Kenna C. Low back pain. *Australian Family Physician* 14:11;1214-1223. 1985.
2. Boachie-Adjei O. Evaluation of the patient with low back pain. *Post Graduate Medicine* 84:3; 127-132, 1988.
3. Collier JAE & Longmore JM. *The oxford handbook of clinical specialties*. (2nd Ed.) Oxford University Press, 1989.
4. Phaasant HC. Backache. Its nature incidence and cost. *West J Med.* 125:330-332
5. Berry-Hugh J. Compensated back injury in N.Z. *N.Z. J Med.* 101:542-4, 1988.
6. Felletti G, Firmen J, Sanson-Fisher R. Patient satisfaction with primary care consultations. *J of Behavioural Med.* 9:4;389-399, 1986.
7. Barker M E. Classification of backpain in general practice. *Practitioner Jan*:231;109-112, 1987.



8. Cherkin D C & MacCornack F A. Patient evaluations of low back pain care from family physician and chiropractors. *West Med J.* Mar 150:3,351-5, 1989.
9. Fry J. *Common diseases - their nature, incidence and care.* (3rd Ed.) Sydney: ADIS Health Science Press, 1983.
10. Commonwealth AIDS Research Grant Committee Working Party. Attitudes, knowledge and behaviour of general practitioners in relation to HIV infection and AIDS. *MJA* 153:5-11, 1990.
11. Bowman J, Redman S, Reid A, Sanson-Fisher R. General practice and the provision of papanicolaou smear tests: Current practice, knowledge and attitudes. *MJA* 152:4,178-183, 1990.
12. Personal communication: Heleni Britt, Community Medicine, University of Sydney, 1991.
13. Henderson I. Low back pain and sciatica. Evaluation and surgical management. *Aust Family Phys.* 14:11:1149-1159, 1985.
14. Tanner J T. *Beating back pain.* Melbourne: Lothian Publishing Co. 1988.
15. Cheneba J, Boache-Adje O. Corrective Management of low back pain. *Post Grad Med* 84:3:127-132, 1988.
16. Lewith G T, Turner G M T. Retrospective analysis of management of low back pain. *The Practitioner* 226:1814-1818, 1982.
17. Frank A. Therapies for back pain. *The Practitioner*, p234, 1990.

## NOW AVAILABLE



### MUSCLE STRETCHING IN MANUAL THERAPY A CLINICAL MANUAL

By Olaf Evjenth & Jern Hamberg

**VOLUME I** The Extremities  
**VOLUME II** The Spinal Column and the TM-Joint

A comprehensive text on muscle stretching for the spine and extremities. Beautifully illustrated with over 500 colour photographs. Highly recommended to all practitioners of musculoskeletal medicine.

Also available:

- Sequence Exercise book by Gunnari, Evjenth and BraJy.
- Mobilisation of the Extremity Joints book by Kaltenborn.
- Belts, wedges, etc. for manual therapy.
- Flexible plastic spine models.
- Flexible plastic joint models.
- Fully articulated plastic skeletons.
- Other anatomic models.
- Anatomic wall charts.
- Masolet treatment tables.

Please send ..... copies of Volume I @ \$90.00  
..... copies of Volume II @ \$90.00  
..... copies of Sequence Exercise @ \$18.00 each

NAME .....

ADDRESS .....

Postcode .....

Please forward order to:  
Mr. B.W. Atkinson,  
33 King Street,  
Rockdale. 2216

All orders prepaid.  
Add \$3.50 for postage and  
handling in N.S.W.  
Interstate \$5.00

## Services Used By Patients With Chronic Back Pain

Beth Bateman, Trish Ferguson, Aileen Liu, Craig Russell, Merryn Sofield,  
Lila Stephens, Lisa Tooby, Dawson Warren, Mark Wenitong

Faculty of Medicine, The University of Newcastle, N.S.W., 2308

### ABSTRACT

100 consecutive patients who attended the Royal Newcastle Hospital Combined Back Pain Clinic were invited to participate in a cross-sectional study to ascertain the number and types of health services utilised by chronic back pain patients and to examine associations between the number of health services utilised, severity of pain and satisfaction with treatment. 51 agreed to complete a questionnaire.

The mean duration of respondents' pain was 15 years and only 13 of the respondents (25%) were in full time employment. No strong association was found between number of health services utilised and satisfaction with treatment. Likewise, there was no strong association found between the number of health services used and pain severity. However, there was a strong association between severity of pain and perceived control over treatment.

Patients had seen an average of 10 different types of practitioner before arrival at the back pain clinic and satisfaction with most treatment options was low. Earlier referral to a chronic back pain clinic may be indicated in many cases. Satisfaction with most of their treatment options is low. Earlier referral to a chronic back pain clinic may be indicated in many cases.

### INTRODUCTION

Patients with chronic back pain have been held to present a significant health problem in all countries of the world<sup>(1)</sup>. Milhaus et al. state that back pain is the most common single musculoskeletal complaint<sup>(2)</sup>. It has been considered second only to the common cold as a cause of lost workforce productivity<sup>(3)</sup>. Fast states that back pain will be experienced by 80% of adults at some time in their lives. He further estimates that 7 - 10% of these adults go on to suffer chronic back pain and 1% of the general population is considered by him to be totally disabled by back problems<sup>(4)</sup>.

Unlike acute pain, chronic pain is rarely associated with ongoing tissue injury and serves no biologic use<sup>(5,6)</sup>. Chronic pain often becomes the disease itself, negatively affecting all areas of the patient's life<sup>(5,6)</sup>.

It is clear that chronic back pain imposes an enormous burden of illness upon individuals and society.

The economic implications of chronic back pain are staggering: costs for medical and surgical treatment, litigation, compensation, long-term disability, Social Security payments and time lost from work<sup>(7)</sup> amount to \$16,000,000,000 annually in the U.S.A<sup>(8)</sup>. The total cost to the Accident Compensation Corporation in New Zealand was \$14,000,000 for 12,940 individuals receiving compensation for back injury in 1983<sup>(9)</sup>.

Furthermore, these patients consume about 80% of the money spent on low back pain<sup>(4)</sup> and utilise health care resources at a rate twice that of individuals without chronic back pain or other functional impairments<sup>(5)</sup>.

In addition to the physical suffering imposed by chronic back pain, the lives of sufferers and their families may become severely disrupted by associated psychosocial problems, including depression, disability, vocational difficulties, financial strain, difficulty in interpersonal relationships and loss of productivity<sup>(6)</sup>.

Arenoff and McAlary believe that the current multidisciplinary pain centre approach has arisen as a result of the failure of technological progress in medicine to provide relief for chronic back pain sufferers. They feel that the pain clinic setting offers a wider choice of treatment and that not only medical, but social and psychological issues can be addressed at the same time<sup>(6)</sup>.

Fast declares that early evaluation and aggressive attempts at rehabilitation should be the standard practice of physicians caring for back pain patients and that patients should return to work as soon as possible<sup>(4)</sup>. This is because the chance of rehabilitation declines with longer periods of absenteeism. Patients with unresolved back problems, whose lives continue to be severely disrupted by pain and psychosocial problems, need a multidisciplinary approach<sup>(6)</sup>.



It appears that, in the U.S.A. at least, before referral to a specialised clinic chronic back pain sufferers have consulted numerous specialists to no avail<sup>(1)</sup>. Furthermore, when so called "traditional" therapies fail, patients often seek non-traditional treatments such as acupuncture, chiropractic treatment, float tanks and so forth<sup>(9)</sup>.

Also in the U.S.A. it is felt by some writers<sup>(10,11)</sup> that patients' arrival at a back pain clinic is often too late for anything other than palliative treatment. It has been argued by these writers that one reason for this may be professional reluctance to admit to being ineffective and the belief that referral is "a slur on their professional integrity"<sup>(11)</sup>.

Fler and Turk argue that disregard for psychosocial factors as both determinants and consequences of chronic back pain, and lack of efficacy of conventional medical treatment approaches, have "forced many patients into . . . a career with changing physicians, growing medical records, disability, depression and over-utilisation of the health care system without appropriate relief"<sup>(11)</sup>.

The literature on chronic back pain patients in Australia does not seem to contain details of the above issues and this prompted the current study to investigate whether circumstances were similar for chronic back pain sufferers in Newcastle.

## OBJECTIVES

As mentioned above, it seems that there has been no descriptive study of the number and type of health services used by chronic back pain sufferers in Australia. Hence, the characteristics of Australian back pain patients have not clearly been identified. This study was designed to address this lack by attempting:

- to identify a group of chronic back pain patients in Australia;
- to describe the sample;
- to quantify the number and type of health services used;
- to estimate the perceived usefulness of the services used;
- to compare the degree of pain at onset with the degree of pain after attending the Combined Back Pain Clinic;
- to find out whether patients would have liked to have been referred earlier to the clinic; and
- to find out how much control or "say" they felt they had over their treatment.

Data for the U.K., U.S.A. and New Zealand shows that chronic back pain patients use multiple health care

services in those countries. The information would make interesting comparisons with any demonstrated pattern of usage in Australia.

## QUESTIONS AND HYPOTHESES

The main research questions were: "How many and what type of health services were seen by our sample, and what was their perceived usefulness?"

Hypotheses to be tested included:

- that greater than four health services were seen by patients before they were referred to the chronic back pain clinic.
- that the increased utilisation of services is associated with dissatisfaction with health services.
- that the increased utilisation of services is associated with more severe pain.
- that feelings of "control" or "say" over treatment are associated with pain.
- that desire for earlier referral to the back pain clinic was associated with number of practitioners seen.
- that duration of pain was related to severity of pain
  - at the time of study, and
  - at pain's onset.

## METHODS

### Study Subjects

The sample comprised one hundred subjects, selected chronologically (the last one hundred patients) from the records of the Royal Newcastle Hospital Combined Back Pain Clinic (C.B.P.C.) in May, 1991.

Ethical approval for the study was obtained from the Hunter Area Health Ethics Committee and the Newcastle University Ethics Committee.

A letter from the doctor in charge of the C.B.P.C. was first forwarded to the subjects informing them of the study and requesting participation in it.

One hundred copies of the questionnaire were sent by a group of second year medical students to subjects selected in May, 1991. Reminders were posted out in July, 1991.

### Questionnaire

The questionnaire consisted of fourteen questions including the age, sex, employment status, duration of back pain and when the participant first attended the C.B.P.C.

The questionnaire also listed fourteen different kinds of practitioner (traditional and alternative) and three programmes used by C.B.P.C. patients.

This was done:

- to define the scope of the study.
- to provide prompts for patients who may have forgotten which health services they had used.
- to present an accurate picture of both traditional and alternative health services.

Participants were asked to rate the helpfulness or otherwise of the health care services which they had used, using a scale of 1 to 7 (1 = not helpful, 7 = very helpful). Data was then converted to a three point scale (by methods shown in Appendix 4), because the sample was too small for the larger scale to provide interpretable results.

Questions were also asked about the severity of pain (assessed in a similar way to the "helpfulness" scale, i.e. rating 1 to 7, collapsing to a 3 point scale), as were questions regarding "say" over treatment and desire for earlier referral to the C.B.P.C. The respondents were also asked to identify which practitioner had referred them to the clinic.

Patients were not asked about their perceptions of the C.B.P.C. or the treatment offered there as it was felt that patients may not feel able to talk candidly about treatment they were currently receiving.

The readability and comprehensibility of the questionnaire was assessed by a senior tutor. However, the questionnaire was not subjected to tests of validity or repeatability. The problems which this raised are addressed in the discussion section.

## DATA ANALYSIS

Chi-square tests of association were performed on variables of interest. Descriptive statistics were performed on responses to appropriate questions.

## RESULTS

One hundred questionnaires were sent out and a total of fifty one replies were received (51%). Forty three were received on the first posting and eight after sending a follow-up request. Of the forty-nine who did not reply, ten had changed addresses and could not be traced, four declined to participate because they felt that the back pain clinic had been of no help, and two wrote back to say that they had never had back pain. This leaves thirty three of the surveyed population unaccounted for and raises questions about the representativeness of our sample. A corrected response rate, taking into account the twelve people who could not have replied due to address change or who did not have back pain, is 58%.

## BASIC CHARACTERISTICS OF THE SAMPLE

The respondents consisted of twenty-seven males and twenty-four females. Their average age was forty nine (SD=15). The youngest was seventeen and the oldest seventy-eight. The mean duration of their chronic pain was fifteen years (n=37, SD=15) and the range was four months to sixty-eight years. Thirteen of the respondents were employed full time and thirty-eight referred to themselves as unemployed. Most of the patients had their first appointment at the C.B.P.C. within two years of filling out the questionnaire.

The mean length of time before consulting a practitioner for back pain was 4.2 years after its onset (n=47, SD = 11 years). However, this value is misleading because the modal length of time before contacting a practitioner was within one month of pain onset (twenty one cases) and twenty out of these contacted a practitioner within the first week.

## PATIENT-PRACTITIONER CONTACT

### First Contact

Forty out of forty one subjects who responded to this question consulted their G.P.s first. The only subject not to do so consulted a chiropractor.

### Number of Practitioners Consulted

The mean number of different practitioners seen by individual patients was ten (SD=5). The least seen was three and the most thirty-two. In total, these fifty one patients saw five hundred and eighteen practitioners (Table 1). Each patient saw at least one G.P. (mean = 1, SD = 1, n = 51). The next most visited modality was physiotherapy (mean = 1, n = 43).

Contrary to our predictions, there were no strong associations between:

- number of practitioners seen and desire for earlier referral to the back pain clinic (Table 2, Chi-square = 1, df = 2, p = 0.5)
- number of practitioners seen and severity of pain at onset (Table 3, chi-square = 0.7, df = 2, p = 0.5).
- number of practitioners seen and severity of pain at the time the questionnaire was completed (Table 4, chi-square = 3, df = 2, p = 0.25).



## USEFULNESS OF PRACTITIONERS

Orthopaedic surgeons are ranked most highly. On the other hand marked dissatisfaction seemed to occur with Naturopaths, Float Tanks, Psychiatrists, Psychologists, Acupuncturists, Rheumatologists and Chiropractors (Tables 5 and 5A).

## PROGRESS DURING TREATMENT

Subjects were asked to rate their pain at onset, and at the present time. Figure 1 shows that the percentage of people who initially rated their pain as severe is reduced, the percentage of those who say they were in mild pain remains almost the same and the percentage of patients in the moderate pain group increases. It may be that these are the people who were initially in the severe pain group but it must be remembered that this figure does not give any information about any individuals' pain progress.

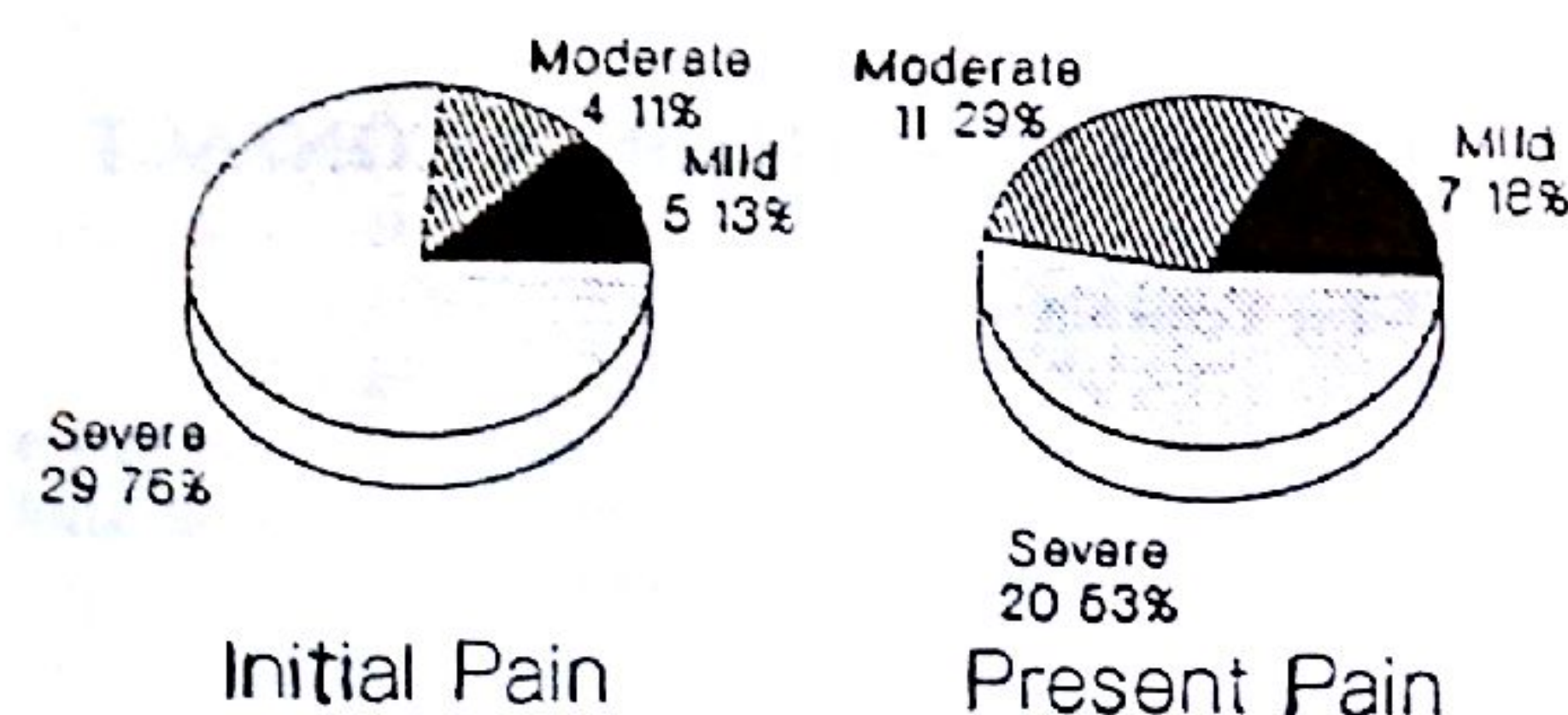


Fig. 1 Change in Patients Pain During Treatment

76% of respondents described their pain as initially severe; of these, 23% said that their pain had moderated. This leaves 53% who described their pain as still severe.

There was not a strong association between duration of pain and severity of pain at onset (Table 6, chi-square = 2, df = 2, p = 0.25). Neither was there a strong association between duration of pain and pain severity now (Table 7, chi-square = 2, df = 2, p = 0.25).

## CONTROL OVER TREATMENT

44% of patients felt that they had enough "say" over their treatment options. 27% felt they had no "say" and 29% were undecided. A chi-square test of association between severity of pain now and "say" over treatment showed a strong association (Table 8, chi-square = 11, df = 4, p = 0.25).

That is to say, patients with severe pain were more likely to be dissatisfied with their control over treatment. However, there was no relationship found between duration of pain and "say" over treatment.

## DESIRE FOR EARLIER REFERRAL TO THE BACK PAIN CLINIC

70% of the sample wanted to be referred to the back pain clinic earlier. 18% were unsure and 12% did not desire earlier referral. Over 90% of the patients who wanted earlier referral would have preferred it within two years of their pain onset.

## DISCUSSION

The major findings of the study were as follows.

Patients saw an average of 10 different types of practitioner.

Over 50% of respondents rated their present level of pain as severe.

The patients found little help from most of the services and not one service was found to be helpful by over fifty percent of respondents.

A majority of patients desired earlier referral to the C.B.P.C.

These findings must be interpreted cautiously and only in relation to chronic back pain sufferers who attend chronic back pain clinics. This is because it has been shown by Deyo in the U.S.A.<sup>(4)</sup> that chronic back pain patients not at a pain clinic have different characteristics and use different types and numbers of health services.

The study's general application is also limited by several other important factors which are discussed briefly below.

### Response Rate

Originally it was intended to administer the questionnaire in person; however only a small percentage of patients of the pain clinic lived within the Newcastle district. As a result, we decided on a postal questionnaire.

A 51% response rate was achieved after reminder letters were sent out. The subjects who did not want to participate were asked their reasons for non-response. Of the 49% who did not reply, 19% had changed their addresses and were untraceable, 14% declined to participate because they felt that the C.B.P.C. had been of no use, and 2% stated that they had never had back pain. Therefore, the sample should only be eighty eight (taking away the people who were uncontactable and those who had never had back pain) so the corrected response rate was higher (58%). This leaves a large number of patients unaccounted for. An attempt to sample the non-responders in order to see if they

TABLE 1  
Total Number of Practitioners Contacted by  
Chronic Back Pain Questionnaire Respondents

TREATMENT MODALITY	PATIENT CONTACTS	% OF PATIENTS WHO USED MODALITY
G.P.	99 (n=51*)	100
Physiotherapists	78 (n=43)	84
Ortho. Surgeons	77 (n=39)	76
Chiropractor	36 (n=23)	45
Spinal Operation	36 (n=23)	45
Rehab. Specialist	35 (n=23)	54
Occup. Therapist	21 (n=28)	33
Aqua Aerobics	20 (n=17)	29
Rheumatologist	18 (n=15)	25
Osteopath	17 (n=13)	25
Other	16 (n=13)	31
Acupuncture	15 (n=16)	23
Counsellor	14 (n=12)	25
Naturopath	12 (n=13)	12
Psych/Psychol.	10 (n=10)	19
Float Tank	8 (n=6)	15
Hypnotherapist	6 (n=5)	10

where n = number of practitioners. In total there were 518 practitioners seen by our sample of patients.

TABLE 2  
Chi-square Table for the Relationship Between Number of Practitioners Seen  
and Desire For Earlier Referral to the Back Pain Clinic

NO. OF PRACTITIONERS SEEN	DESIRE FOR EARLIER REFERRAL			
	YES	UNSURE	NO	TOTAL
<10	6	2	0	8
>10	29	7	6	42
TOTAL	35	9	6	50



<b>TABLE 3</b> <b>Chi-square Table for Number of Practitioners Seen and Severity of Pain at Onset</b>					
NO. OF PRACTITIONERS SEEN	SEVERITY OF PAIN AT ONSET				
		MILD	MODERATE	SEVERE	TOTAL
	<10	4	3	18	25
	>10	1	1	11	13
	TOTAL	5	4	29	38

<b>TABLE 4</b> <b>Chi-square Table for Number of Practitioners Seen and Severity of Pain at the Present Time</b>					
NO. OF PRACTITIONERS SEEN	SEVERITY OF PAIN AT THE PRESENT TIME				
		MILD	MODERATE	SEVERE	TOTAL
	<10	5	5	14	24
	>10	1	6	6	13
	TOTAL	6	11	20	37

<b>TABLE 5</b> <b>Usefulness Of Practitioners As Rated By Patients * (1, 2)</b>					
TREATMENT MODE	NOT HELPFUL %	AVERAGE %	VERY HELPFUL	n	TOTAL %
G.P.	35	17	48	48	100
Physiotherapy	49	31	20	33	100
Orth. Surgeon	36	31	33	21	100
Rehab. Specialist	41	18	41	29	100
Chiropractor	83	13	4	23	100
Spinal Operations	41	18	41	22	100
Occup. Therapy	53	29	18	17	100
Other	67	6	27	15	100
Aqua Aerobics	40	27	33	15	100
Rheumatologist	77	15	8	13	100
Counsellor	21	36	43	14	100
Osteopath	50	25	25	12	100
Acupuncture	79	14	7	14	100
Psychologist	62	23	15	13	100
Float Tank	60	20	20	10	100
Naturopath	78	11	11	9	100
Hypnotherapy	71	0	29	7	100

\*1) Numbers in this table are smaller than in Table 1 because some respondents failed to answer these questions.

\*2) See Appendix 6 for 95% confidence intervals for this data.

<b>TABLE 6</b> <b>Chi-square for Duration of Back Pain and Severity of Pain at Onset</b>				
MONTHS OF PAIN	SEVERITY OF PAIN AT ONSET			
		MILD	MODERATE	SEVERE
	<100	2	1	18
	>100	2	3	10
	TOTAL	4	4	28

<b>TABLE 7</b> <b>Chi-square Table for Duration of Pain and Severity of Pain at the Present Time</b>				
MONTHS OF PAIN	SEVERITY OF PAIN AT PRESENT TIME			
		MILD	MODERATE	SEVERE
	<100	3	8	9
	>100	2	3	10
	TOTAL	5	11	19

<b>TABLE 8</b> <b>Chi-Square Table for the Relationship Between "Say" Over Treatment and Severity of Pain at the Present Time.</b>				
"SAY" OVER TREATMENT	SEVERITY OF PAIN NOW			
		MILD	MODERATE	SEVERE
	NO SAY	3	7	9
	NOT SURE	0	2	10
	EN'GH SAY	3	2	1

TOTAL 6 11 20 37



differed in any material respect from the responders was unsuccessful, mainly due to a poor response rate from them.

Possible reasons for the poor response rate include an inability to read or write English, dissatisfaction with treatment from the Combined Back Pain Clinic and dissatisfaction with treatment by other health professionals. However, these are simply speculations.

It is felt that a personally administered questionnaire would have achieved a better response rate, although perhaps at the expense of less candid responses. Also, a personally administered questionnaire would have helped to prevent the ambiguous answers received for many questions and the fact that many questions were left unanswered.

#### Validity and Reliability

The limitations of the questionnaire have already been mentioned. It may have been better to have tested the questionnaire before using it on patients at the C.B.P.C. As this was not done, it cannot be asserted that the questionnaire was either valid or reliable and this is a serious limitation. The main reason for not doing so was that at the time it seemed impossible to find a convenient and similar group of subjects who were not patients of the Combined Back Pain Clinic. However, it is possible that this questionnaire and the answers to it could be used as a pilot study for further research with other chronic back pain sufferers.

#### Type and Aetiology of Back Pain

Data was not collected on aetiology or type of back pain because that was not the point of the study; the only requirement was that the pain was chronic. This does however mean that the sample was heterogeneous as far as cause of pain goes and it may be the case that only certain causes of back pain were represented.

#### Sample Size

It would have been interesting to compare the people who got better with those who did not, to ascertain if there were any significant differences in their treatments. However, the numbers were too small for meaningful analysis of this aspect.

Likewise, the number of respondents was too small to assess if there was an association between number of

health services used and dissatisfaction with services, and between number of health services used and severity of pain.

#### Recall Bias

The study was affected by recall bias. Many patients do not keep records of their appointments and some do not have an accurate recollection of the onset of their pain or its duration.

#### Difficulty in Quantifying Pain

It is difficult to assess the severity of a subject's pain. A rating scale was used in this study but it is well known that individuals vary in both their stoicism and in their pain thresholds.

In spite of the points above, the sample seemed to compare quite well with other studies. The demographic characteristics of the sample (age, sex and mean duration of back pain) were in accordance with studies of patients at Chronic Lower Back Pain Clinics in the Netherlands<sup>(1)</sup> and U.S.A.<sup>(2)</sup>. Health care practitioner contacts were also in accord with the results of a study of chronic back pain clinic patients in New Zealand<sup>(3)</sup>.

#### CONCLUSION

The results of the study, in spite of its drawbacks, raise important points about the experience of chronic back pain sufferers who attend the Combined Back Pain Clinic at Newcastle. It seems that even after a lengthy course of treatment by an average of ten practitioners (usually of a varied nature) the chronic back pain sufferer is still in moderate to severe pain by the time of referral to the C.B.P.C. Boachie-Arjet<sup>(4)</sup> advocates that patients with back pain should receive prompt acute care to prevent chronic disability. After two or three practitioners have been consulted, to no avail, it may be more appropriate to refer a patient straight to a chronic pain clinic than to participate in a seemingly endless round of referrals and counter referrals, as would appear to have been the case with the patient group studied.

The study did not attempt to assess the effectiveness of the C.B.P.C.; the patients themselves, however, voted overwhelmingly for an earlier referral to the clinic. It seems that health care professionals need to become aware of the benefits of such a multidisciplinary approach both in terms of patient satisfaction and, presumably, reducing the strain on the health care budget.

#### REFERENCES

1. Rossi U & Pernak J. *Low Back Pain. The facet syndrome in: Lipton S, Tunks E, Zoppi M, (editors) The Pain Clinic, New York: Raven Press 1990.*
2. Milhaus PL, et al. *Determinants of Vocational Disability in Patients with Low Back Pain. Arch. Phys. Med. Rehabil. 70:8. 589-593, 1989.*
3. Boachie-Arjet C. *Conservative Management of Low Back Pain. An Evaluation of Current Methods. Postgraduate Medicine 84:9, 127-133, 1988.*
4. Fast A. *Low Back Disorders. Arch. Phys. Med. Rehabil. 69:3. 880-883, 1988.*
5. Deyo RA, Bass JE, Walsh NE, Schoenfeld LS, Ramamurthy S. *Prognostic Variability Among Chronic Pain Patients: Implications for Study Design, Interpretation and Reporting. Arch. Phys. Med. Rehabil. 69:3. 174-178, 1988.*
6. Arenoff GM, McAlary PW. *Multidisciplinary Treatment of Intractable Pain Syndromes in: The Pain Clinic, New York, Raven Press, 267-273, 1990.*
7. Wigley RB, Carter N, Woods J, Ahiya M, Couchman KG. *Rehabilitation in Chronic Back Pain: Employment Status After Four Years. New Zealand Medical Journal. 24 Jan. 9-11, 1990.*
8. Resser KA, Grain KD. *Medically Incongruent Chronic Back Pain: Physical Limitations, Suffering and Ineffective Coping. Pain 32: 35-45, 1988.*
9. Shvartsman P, Abelson A. *Complications of Chiropractic Treatment for Back Pain. Postgraduate Medicine, 15 May, 1988.*
10. Lipton S. *Pain: An Update in: Lipton S, Tunks E, Zoppi M (Editors), The Pain Clinic, New York: Raven Press, 1990.*
11. Fler H, Turk DC. *Etiological Theories and Treatments for Chronic Back Pain: Somatic Models and Interventions. Pain 19: 105-121, 1984.*

See you at . . .

### Australian Association of Musculoskeletal Medicine 22nd Annual Scientific Meeting

### "The Shoulder"

October 10 & 11th, 1992

Charles Gairdner Hospital,  
Nedlands,  
Western Australia

Conference Convenor: **Dr Ian Hewett**

For further information contact

The Conference Secretariat,  
5/25 Preston Street,  
Como,  
Western Australia, 6152.  
telephone (09) 367 9778 or (09) 474 2627



# Fibromyalgia: A Literature Review

Philip Watson

Suite 26, 259 McCullough Street, Sunnybank, Qld., 4109

## ABSTRACT

**Fibromyalgia has emerged from a confused background of terminology and descriptions of musculoskeletal symptoms. The combination of widespread body pain and tender points has enabled a syndrome to be defined and tested. The syndrome should be recognised in general as well as specialist medical practices. This review of the current literature is aimed at providing practitioners (and, through them, patients) with information about a relatively common but often unrecognised condition.**

## INTRODUCTION

Numerous terms have been used to describe muscle pain, e.g. muscular rheumatism, fibrositis, myogelosis, myalgia, myofascial pain, non articular rheumatism etc. These have described either localised or generalised pain and tenderness in the muscles, particularly in the literature before 1975<sup>(1)</sup>. In 1977 Smythe and Moldofsky redefined fibrositis in terms of widespread pain and multiple tender points, which now forms the basis of the current description of fibromyalgia. International organisations concerned with musculoskeletal pain have accepted fibromyalgia as the most appropriate term for a systemic muscle pain syndrome. There are other syndromes describing aspects of muscle pain (see Table 1).

TABLE 1

New or redefined terms since 1975 (1)

TERM	SOURCE
Fibrositis	Smythe & Moldofsky, 1977 (49) (a)
Fibromyalgia	Yunus et al., 1981 (48)
Repetitive Motion	Morse, 1986 (50)
Musculoskeletal Problems	Ireland, 1986 (51);
Repetitive Strain Injury	Sikorski, 1988, (52)
Overuse (Injury) Syndrome	Fry, 1986 (53);
	Dennett & Fry 1988 (54)
Osteochondrosis	Popellanski, 1987 (55)
Chronic Fatigue Syndrome	Holmes et al., 1988 (56)
Work-related	
Chronic Myalgia	Larsson et al., 1988 (57)
Occupational Muscle Pain	Edwards, 1988 (58)

(a) references refer to original article.

How these various syndromes relate to each other, and to fibromyalgia in particular, awaits further research. Clearly many of them have similarities in terms of symptoms and signs. Quantification of fibromyalgia has been improved since the inclusion of tender points into the diagnosis. The introduction of a minimum number of tender points into the definition by Smythe and

Moldofsky has been modified by several researchers since.

This has culminated in the publication in 1990, of a report by the Multi-Centre Criteria Committee: "Criteria for the Classification of Fibromyalgia" for The American College of Rheumatology<sup>(2)</sup>. This committee's recommendations are now generally accepted as the diagnostic criteria for fibromyalgia.

## DIAGNOSTIC CRITERIA

For classification purposes patients are said to have fibromyalgia if two criteria are satisfied, viz. widespread pain and widespread muscular tenderness. The combination of the two criteria give a sensitivity of 88.6% and a specificity of 81.1%. The terms primary and secondary fibromyalgia are no longer used as pain level, psychological functioning, diagnostic and prognostic values are similar in both. However the presence of a second clinical disorder does not exclude the diagnosis of fibromyalgia also occurring. The use of the term concomitant fibromyalgia is acceptable in this circumstance<sup>(3)</sup>.

TABLE 2

New criteria proposed for fibromyalgia

- A. Widespread Pain** - widespread defined as axial, upper and lower, right and left sides of body.
  - B. Tenderness** in at least 11 of the following 18 bilateral locations (as illustrated in Fig. 1).
1. Occiput: Bilateral, at the suboccipital muscle insertions.
  2. Low cervical: bilateral, at the anterior aspects of intertransverses at C5-7.
  3. Trapezius: bilateral at the midpoint of the upper border.
  4. Supraspinus: bilateral, at origins, above the scapula spine near the medial border.
  5. Second rib: bilateral, actually at the second costochondral junctions, maximum just lateral to the junctions on upper surfaces.
  6. Lateral epicondyle: bilateral, 2 cm distal to the epicondyle.
  7. Gluteal: bilateral, in upper outer quadrants of buttocks in anterior fold of muscle.
  8. Greater trochanter: bilateral, posterior to the trochanteric prominence.
  9. Knees: bilateral, at the medial fat pad proximal to the joint line.

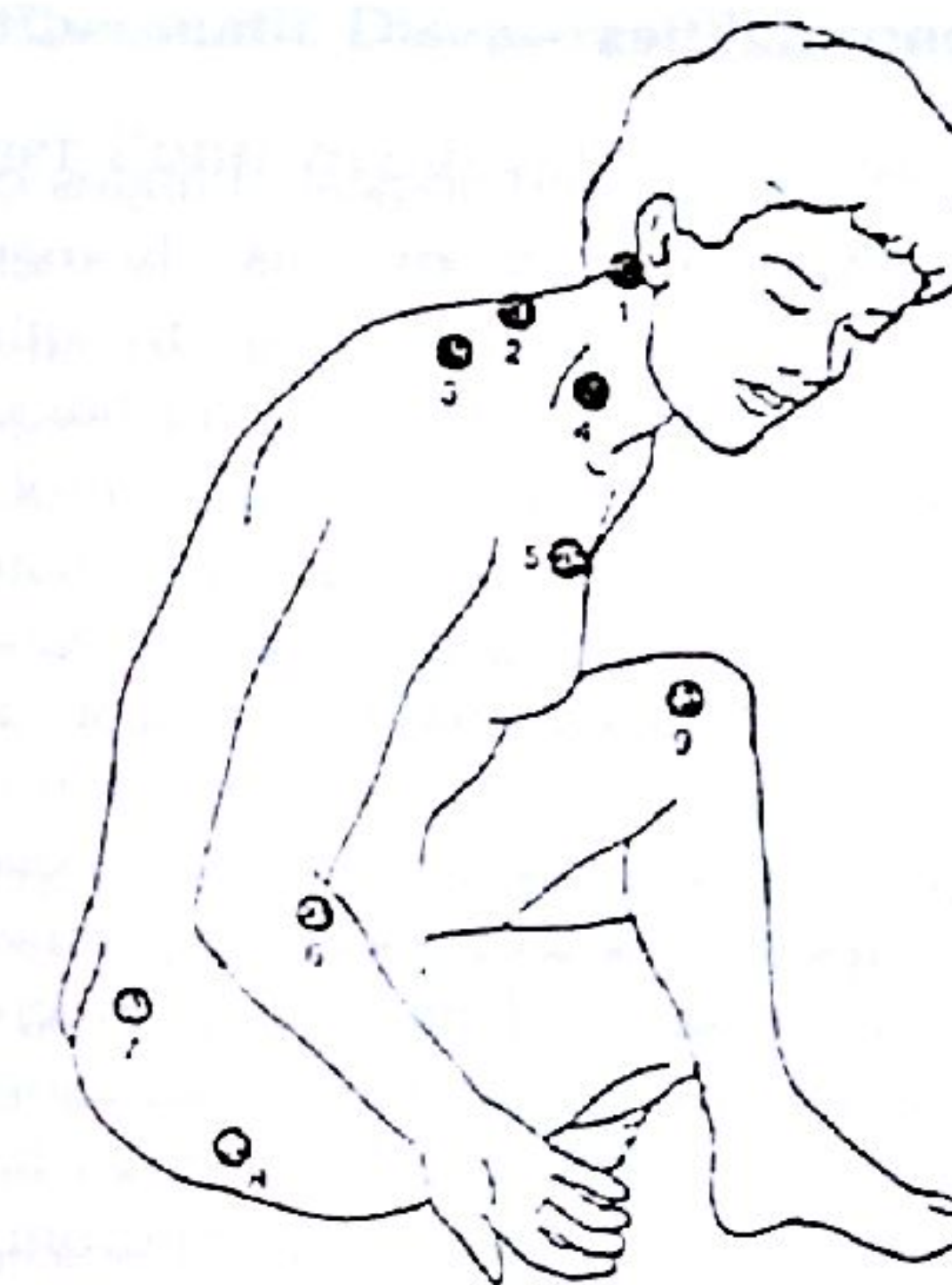


Fig. 1 Sites of Examination for tenderness in the new criteria for Fibromyalgia as described in Table 2<sup>(4)</sup>.

## CLINICAL FEATURES

In addition to the two diagnostic criteria, there are a number of features characteristic of fibromyalgia.

### Generalised Fatigue

Patients with fibromyalgia could only perform standardised work tasks at a rate 40% below that of normal subjects, which was similar to patients with rheumatoid arthritis. A similar figure was also found for patients performing household tasks. To remain employed, fibromyalgia patients have to accept appreciable associated physical and economic costs<sup>(6,7)</sup>.

### Pain Complaints

The pain is widespread and occurs in both the trunk and the limbs. In one study, 97.5% of fibromyalgia patients complained of widespread pain, compared to 71.1% of chronic pain controls expressing a similar complaint<sup>(2)</sup>. Fibromyalgia patients are found to have exquisite pain on palpation of the tender points; this can be confirmed by the use of a dolorimeter<sup>(8,9)</sup>. Also, fibromyalgia patients appear to have low thresholds for clinical pain. Using visual analogue scales and numerical rating scales it was found that fibromyalgia patients rate their pain greater than corresponding rheumatoid arthritis patients. This was also found in other studies comparing fibromyalgia, normal controls and other chronic pain groups<sup>(10)</sup>.

### Sleep Disturbance

The sleep disturbance is best described as "waking unrefreshed". This non-restorative sleep has been

reported in 80-100% of fibromyalgia patients<sup>(11)</sup>. Sleep is reported as light or restless and patients are more likely to be easily disturbed or to have dreams. On waking, apart from feeling physically exhausted and unrefreshed, there is a generalised morning stiffness and aching, lasting more than 15 minutes, of significance when compared to normal controls<sup>(12)</sup>. On the rare occasions that deep sleep is experienced, patients report their physical symptoms are less the following day<sup>(13)</sup>. Sleep disturbance, pain severity and disability are associated<sup>(14)</sup>.

### Other Symptoms

Paraesthesias, headaches and anxiety are reported in 45-69% of patients, while irritable bowel syndrome, sicca symptoms and Raynaud's phenomena, urinary urgency and dysmenorrhea occur in less than 35%<sup>(2)</sup>.

### Modulating Factors

Patients with fibromyalgia report that their symptoms are aggravated by factors such as noise, cold, poor sleep, anxiety, humidity, stress, fatigue, weather change or warmth. These factors were described by 60-79% of patients but were reported somewhat less often by controls<sup>(2)</sup>.

## AETIOLOGY

The aetiology of fibromyalgia is unknown. It is likely to be multifactorial. Research is continuing to define the exact roles of abnormal sleep pattern disturbances, muscle pain mechanisms and micro-trauma, fatigue and psychological factors.

## COURSE & PROGNOSIS

There have been no long-term prospective research studies of fibromyalgia. In retrospective studies the majority of patients report that their symptoms began gradually and unexpectedly in adulthood, although a significant number reported that the symptoms commenced in childhood. Although most did not recall any event precipitating their symptoms, 24% attributed their symptoms to trauma and 14% to psychological factors, e.g. stress, emotions, family change<sup>(15)</sup>. Others have associated infections with the onset of their symptoms.

It is postulated that fibromyalgia follows one of three courses<sup>(7)</sup>:

- (a) Remitting - intermittent, in which symptoms either disappear or frequently reappear after initial onset.
- (b) Fluctuating, in which symptoms may periodically abate, although they never completely disappear.
- (c) Progressive, in which symptoms become persistent and more intensive in time.



The various factors which enable one to predict which course a fibromyalgia patient may take are presently unknown. However, there is agreement on some features prognostic. Firstly, it seems that fibromyalgia symptoms are likely to persist to some degree over the course of a patient's life. Secondly, although fibromyalgia can be extremely painful and debilitating, articular manifestations are absent. Thirdly, the profound fatigue, stiffness, paraesthesia and subjective muscle tension are of a chronic nature<sup>(7)</sup>.

The long-term natural history of fibromyalgia is unknown. In one 24 month study, the majority of patients continued to have active symptoms throughout the follow-up period. Generally those that did well at the beginning also fared better overall, as did the younger patients<sup>(16)</sup>.

## PREVALENCE

It is often thought that fibromyalgia has been under-diagnosed. In a primary care setting the prevalence was described as about 9%<sup>(18)</sup>. In a general medical clinic it was 5.7% of all admissions, whilst in a rheumatology clinic up to 30% of patients were thought to have fibromyalgia<sup>(19)</sup>. 89% of patients are women<sup>(2)</sup>. The age of onset of clinical symptoms varies from 12 years to 45 years, but in one clinical series the common age of presentation was 40 to 55 years and was rarely after 60 years. Often the symptoms have been present many years before presentation<sup>(17)</sup>.

## PATHOPHYSIOLOGY

### Sleep Disturbance

A specific sleep pattern disorder has been shown to occur in fibromyalgia patients. Intrusion into the delta wave (0.5-2Hz) of slow wave sleep by a faster alpha rhythm (7.5-11Hz) has been termed the "Alpha E.E.G. N.R.E.M. Sleep Anomaly". Fibromyalgia patients have 60% of their non-R.E.M. sleep occupied by the anomaly, compared to 25% of normal subjects. Insomniacs and other chronic pain patients have a sleep pattern disturbance distinct from fibromyalgia patients. The onset of the "Alpha E.E.G. N.R.E.M. Anomaly" often coincides with a major stressful life situation, such as a motor vehicle or industrial accident, domestic difficulties, environmental noise or other painful conditions (e.g. rheumatoid arthritis). The sleep pattern disturbance correlates with fatigue and pain. Aerobic exercise appears to modulate the effect of the sleep disturbance by reducing these symptoms. The sleep disturbance may effect neurotransmitters, such as serotonin, endorphins, substance P and peptides involved in the pain, immune and sleep arousal mechanisms<sup>(13, 19)</sup>.

## Muscle Abnormalities

Both functional and histological changes occur in muscles of patients with fibromyalgia. Isometric and isokinetic maximal voluntary muscle strengths have been found to be significantly lower in fibromyalgia patients (up to 50%) compared with controls. The intensity of the subjective symptoms and number of tender points is correlated with a greater reduction in muscle strength. Studies have shown that disturbed micro-circulation, mitochondrial damage and reduced high energy phosphates occur in fibromyalgia. This indicates an apparent energy deficiency state in the resting painful muscles<sup>(20)</sup>. Fibromyalgia patients were unable to deplete muscle phospho-creatinine below 30% of resting values<sup>(21)</sup>. E.M.G. studies have not revealed convincing evidence of neuromuscular transmission defects. Morphological changes in the muscles which are distinct from trophic and degenerative conditions are related to the muscle activity changes. It is postulated that these changes occur in conjunction with muscle overload and sympathetic nervous system effects, compromise the energy supplies, impair oxygen flow to muscle fibres and release substances which sensitise nociceptive nerve endings, leading to the sensation of pain<sup>(22)</sup>.

Patients with fibromyalgia are markedly less fit than the American average<sup>(23, 7)</sup>. Fit individuals seem resistant to the artificial induction of Alpha E.E.G. N.R.E.M. sleep pattern in the laboratory situation. Fibromyalgia patients report accentuations of muscle pain after exercise. This could lead to the deconditioning of the muscles, making them more prone to microtrauma, hence pain occurs at low levels of exertion and has a negative effect on the cardio-respiratory system and peripheral circulation. "Unless the cycle of inactivity, fatigue, pain and inactivity is broken, the patient is likely to experience a progressive deterioration in functional capabilities and quality of life."<sup>(24)</sup>

## DIFFERENTIAL DIAGNOSIS

Fibromyalgia is now recognised more readily as a discrete clinical disorder which has unique symptoms and signs distinguishable from other pain syndromes<sup>(7)</sup>. Although the differential diagnosis may be difficult it is important to consider fibromyalgia as a possibility so that the consequences of pursuing unnecessary investigation and inappropriate treatment can be avoided. The differential diagnosis includes non-rheumatic and rheumatic disease.

## Non Rheumatic Diseases

### Trigger Point Syndrome (Tr.P.S.)

The distinction between fibromyalgia and Tr.P.S. (formerly known as "myofascial pain syndrome") is important clinically as Tr.P.S. is treated differently and has a better prognosis. Fibromyalgia and Tr.P.S. do have similarities and may be at the ends of the same spectrum. The comparisons between fibromyalgia and Tr.P.S., summarised by Simons<sup>(1)</sup>, are as follows:

- (1) Trigger point syndrome is primarily a dysfunction of one or more specific muscles. Each muscle generates characteristic patterns of referred phenomena and the severity may be modulated by mechanical and systemic factors. Evidence is rapidly mounting that fibromyalgia is fundamentally a total-body systemic disease that involves multiple organ systems.
- (2) Patients with Tr.P.S. have trigger points (TrPs); patients with fibromyalgia have tender points (TePs). TrPs refer pain and tenderness, on palpation they are found to lie in taut bands and with adequate stimulation they evince local twitch responses. None of these phenomena is attributed to TePs.
- (3) Patients with Tr.P.S. are approximately equally divided between male and female. Most patients with fibromyalgia are female.
- (4) A Tr.P.S. typically begins with an acute muscle sprain or chronic overuse of a specific group of muscles. Fibromyalgia usually begins insidiously and the patient complains of generalised pain and often of muscular fatigue.
- (5) Weakness in patients with Tr.P.S. is limited to the specific muscles that have TrPs. It is widespread in fibromyalgia.
- (6) Patients with Tr.P.S. characteristically have unilateral pain in one or several regions of the body. Patients with fibromyalgia commonly complain of symmetrical bilateral pain.
- (7) The pain in Tr.P.S. can be traced to myofascial TrPs in specific muscles. The pain of fibromyalgia has no such identifiable origin.
- (8) The TrPs of trigger point syndromes respond to specific therapies directed to affected muscles; effective modalities include injection, spray and stretch, postisometric relaxation and massage. Medication is often of little value. Fibromyalgia is treated by systemic medication and by educating the patient that it is neither life-threatening nor imaginary. The effectiveness of physical therapeutic measures differs between individual patients.

A subset of patients with Tr.P.S. who will develop fibromyalgia is partially predetermined by factors such as a genetic predisposition, Alpha E.E.G. N.R.E.M. Sleep Anomaly, poor level of aerobic fitness, exaggerated responses to stress in terms of sympathetic overactivity and a predilection to develop depressive illness<sup>(25)</sup>.

### Chronic Fatigue Syndrome (C.F.S.)

Some patients with fibromyalgia may also share the features of C.F.S., i.e. headache, muscular weakness and sleep disorder. However, C.F.S. is characterised by its chronic debilitating fatigue and does not include pain like that of fibromyalgia patients.

### Psychological Pain

A psychological cause for the patient's symptoms, tender points and negative laboratory findings may be entertained by practitioners unfamiliar with fibromyalgia. However, fibromyalgia patients describe their symptoms in a predictable and persistent manner, with diurnal and weather induced variation, and have a more consistent response to pressure over the tender areas, whereas patients with psychological dysfunction will have inconsistencies in the clinical descriptions of their pain, its distribution and palpation findings.

### Other non-rheumatic diseases

These include hypothyroidism, metastatic malignancy, multiple myeloma, early Parkinson's disease and chronic brucellosis.

### Rheumatic Diseases (Connective Tissue Diseases)

Fibromyalgia does not have articular manifestations but may be concomitant with rheumatic disease. Polymyalgia rheumatica patients will have an elevated E.S.R. and similarly rheumatoid arthritis patients will have an elevated E.S.R. and rheumatoid factors. Polymyositis or dermatomyositis are accompanied by progressive weakness in muscle, characteristic muscle biopsies, E.M.G. findings and elevated serum muscle enzymes, which are not seen in fibromyalgia. Early Systemic Lupus Erythematosus, Ankylosing Spondylitis, osteomalacia and Diffuse Idiopathic Skeletal Hyperostosis are rarer causes of muscle pain. There are characteristically no abnormalities on routine blood examination in fibromyalgia. This however may change if laboratory measurements of the muscle pathologies identified in fibromyalgia can be quantified<sup>(26)</sup>. To exclude other conditions in the differential diagnosis, a complete blood count and E.S.R., anti-nuclear antigens, rheumatoid factor and thyroid function tests may be warranted. Many rheumatologists would observe a patient with fibromyalgia for three to six months before being convinced of the diagnosis<sup>(28)</sup>.



## DOLORIMETRY

The quantitative evaluation of tender points (TePs) in fibromyalgia or of trigger points (TrPs) in trigger point syndromes is possible using pressure sensitive instruments. The pressure threshold is the minimum pressure that causes pain or discomfort. Pocket sized dolorimeters (algometers) that can measure the pressure threshold are available and can be used to document physical findings, to assist in the differential diagnosis and to monitor the effects of various treatments. Normal values have been established<sup>(8,9)</sup>.

## PSYCHOLOGICAL ASPECTS

A considerable amount of research suggests that psychological disturbances are associated with fibromyalgia. At present it is not clear which of the specific psychological disorders are important. It is also unclear whether the psychological disturbance is an aetiological factor of a specific chronic pain syndrome, e.g. fibromyalgia, or whether it is as a result of the chronic pain experienced. Although the peripheral mechanisms of fibromyalgia have been explained by muscle abnormalities, a partly central mechanism is suggested, involving lack of motivation due to the effects of pain with negative feedback on motor recruitment and therefore reduced muscle function<sup>(21)</sup>. It is also suggested that fibromyalgia is a disorder of pain modulation (i.e., of the nociceptive stimulation) and that when this occurs, a significant psychological component is always present<sup>(26,27)</sup>. "It may be more profitable to consider psychological malaise as an integral consequence of the fibromyalgia experience, rather than as a concomitant mark of fibromyalgia."<sup>(28)</sup>

## MANAGEMENT

Treatment for fibromyalgia must include long term strategies, as the natural history of fibromyalgia is likely to be one of continuing and unremitting pain. Many non-medicinal and medicinal treatments are used, although their efficacies have not been determined in clinical trials.

As the first step, it is important to make a correct diagnosis. Widespread musculoskeletal pain of more than three months' duration generally excludes transient myalgias and arthralgias associated with febrile conditions. A thorough medical history and physical examination with simple laboratory screening test would be appropriate.

### Non-Medicinal Treatments

The manifestations of fibromyalgia vary with each affected individual and so therapy needs to be individualised. It should be explained that the treatment

for fibromyalgia is aimed at reducing the severity of symptoms and at adapting a lifestyle appropriate to the patterns of remission and exacerbation. Realistic goals for both the individual and therapists are then set, so that unnecessary investigation and inappropriate treatments can be avoided. Fibromyalgia needs explaining carefully so that the patient can understand what is known about it. The practitioner should point out that a great deal of research is being done in this area of medicine and that new information is continually being added to the existing, though sparse, knowledge of the condition.

A list of non-medicinal treatments is given in Table 3<sup>(28)</sup>.

**TABLE 3**  
Proposed non-medicinal treatments for fibromyalgia syndrome<sup>(28)</sup>

Treatment	Current Status
Cardiovascular fitness training	Effective (31) a
Electromyographic biofeedback training	Effective (32)
Transcutaneous electrical nerve stimulation	Not determined
Interferential current stimulation	Not Determined
Acupuncture analgesia	Not Determined
Local Injection of tender points	Not Determined
Postisometric relaxation	Not Determined
Ice/heat range-of-motion exercise	Not Determined
Laser therapy	Not Determined
Massage	Not Determined
Hypnosis	Not Determined
Cognitive behavioural therapy	Not Determined

a. references refer to original article.

Pain threshold measurement over tender points were improved in patients on a cardiovascular fitness programme compared to a flexibility exercise programme<sup>(29)</sup>. However, there was no difference in pain intensity scores (measured by visual analog scale), percentage of total body area involved or improvement in sleep. The relationship between the lack of fitness and muscle abnormalities can be explained to the patients. Another small study indicated that E.M.G. biofeedback training may give sustained improvement as measured by visual analog pain scores, morning stiffness and the number of tender points<sup>(30)</sup>.

The rational use of nociceptive stimulating nodalities (i.e. most of the manual and physical therapies) must take into account an understanding of the pain pattern seen in this condition. As fibromyalgia is a systemic disorder, with the patients characterising their pain as generalised body pain (often of a great intensity), these treatment modalities may have only a limited place. Cognitive-behavioural therapy for fibromyalgia has not been assessed critically but a treatment programme based on it has been described<sup>(31)</sup>.

## Medicinal Therapies

Medicinal treatments that have been tried are listed in Table 4<sup>(28)</sup>; only some have been proved beneficial. Tricyclic antidepressants, especially amitriptyline in low dose (10-20mg) and cyclobenzaprine were found to improve the quality of sleep and global assessment scores. Amitriptyline is a competitive antagonist of the serotonin-reuptake by neurones in certain parts of the brain, while cyclobenzaprine modulates muscle tension at a supra-spinal level by reducing gamma efferent activity.

**TABLE 4**  
Proposed medicinal treatments for fibromyalgia syndrome<sup>(28)</sup>

Class	Treatment Agent	Current Status
Tricyclic antidepressant	Amitriptyline	Effective (2,3)b
	Cyclobenzaprine	Effective (4-6)
	Dothlamin	Possibly effective (7)
	Imipramine	Not effective (8)
	Chlorpromazine	Possibly effective (9)
Major tranquilizer	L-Tryptophan	Not effective (10)
Serotonin precursor	Alprazolam	Effective (11)
Benzodiazepine	Temazepam	Not determined
NSAIDs	Naproxen	Not effective (3)
Corticosteroid	Prednisone	Not effective (12)
Other	Regional	Possibly effective (13)
	Sympathetic blockade	
	S-adenosylmethionine	Possibly effective (14)
	(SAME)	

A Nonsteroidal anti-inflammatory drug  
B references refer to original article

Amitriptyline was shown to be superior to placebo and/or naproxen<sup>(28)</sup>. Phenothiazines have limited usefulness in terms of restoring and improving the abnormal sleep pattern but they are associated with an unacceptable incidence of side effects. Although medicinal therapy has been shown to be beneficial, the overall effectiveness in most patients has not been impressive.

Nutritional factors which seem to be important in restoring muscle health and function include adequate Vitamin C, B1, B6, B12 and folic acid. It is also important to correct thyroid or oestrogen deficiency states.

The lack of optimal health may be associated with vitamin levels at the low end of the normal range, although rarely with gross deficiencies<sup>(34)</sup>. Correcting only one vitamin (e.g. tryptophan which is involving in the serotonin metabolic pathway) may cause critical deficiencies in others<sup>(35)</sup>.

## DISCUSSION

Fibromyalgia is currently the subject of much interest and ongoing research around the world, particularly in Scandinavia, Germany, Czechoslovakia, U.S.A. and Canada. Two symposia dedicated to Fibromyalgia were held in 1988 and the first International Symposium on Myofascial Pain and Fibromyalgia was held in 1989. A second is planned for 1992 in Denmark.

There are three theoretical approaches to fibromyalgia<sup>(36)</sup>.

The first holds that fibromyalgia is non-organic and that the pain is non-nociceptive, possibly psychogenic and associated with no pathological laboratory findings. There is lessening evidence for this. The second premise is that the clinical criteria of generalised muscle pain and widespread tender points constitute a recognisable syndrome. However, it is felt by some authors that the definition of TePs, intra-observer error and patient reactions are variables that are difficult to standardise. The third approach is based on the laboratory diagnosis of muscle abnormalities and suggests that the pain is nociceptive in origin.

The effect of fibromyalgia on a patient's life can be assessed by using a Fibromyalgia Impact Questionnaire<sup>(37)</sup>. This is similar to the Health Assessment Questionnaire and the Arthritis Impact Measurement Scales. Factors such as physical functioning, work status, depression, anxiety, sleep, back pain, stiffness, fatigue and well-being are analysed. More research is needed to enable this questionnaire to be used for improving treatment programmes and predicting prognosis. However, a measure of the incapacity at presentation gives the patient, the family and the doctor a better understanding of the disease and its impact on the patient's life.

The effect of poor posture in causing musculoskeletal pain has been mentioned by several authors<sup>(38)</sup>. If the flexed posture of a sitting patient with fibromyalgia can be improved in an elastic and painless manner, when pressure was applied to the fifth thoracic vertebra in a posterior to anterior direction, postural training could improve the TePs. If the flexed posture can not be corrected easily or painlessly in this manner, correcting the posture is unlikely to benefit the patient.

There does not appear to be any mention in the literature of fibromyalgia occurring in post-natal patients. However, the proposed pre-requisites of deconditioned muscles, stress and anxiety, sleep disturbance, fatigue and sometimes depression are present to some degree in the year or so following childbirth.

It has been suggested that the approaches to the treatment of fibromyalgia have been unduly conservative



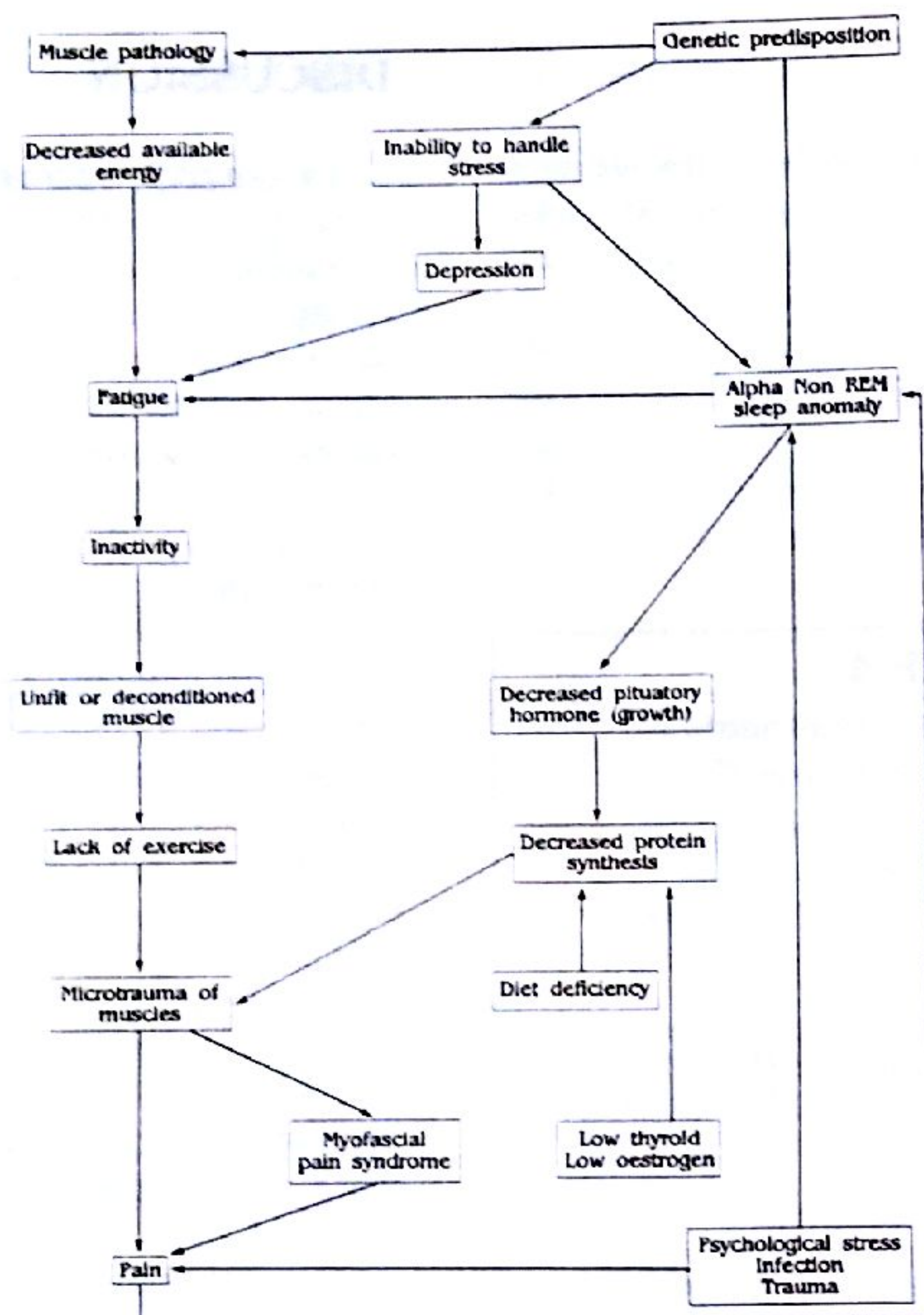


Fig. 2. Interaction of Factors Associated with Fibromyalgia

when compared to that of rheumatoid arthritis. This may be because rheumatoid arthritis is recognised as an aggressive, destructive disease with sufficient disabling potential to justify the use of stronger, relatively toxic drugs. Further research into fibromyalgia may well show that it also merits use of medications that are more powerful, more expensive and even those which carry some risk of side effects<sup>(16)</sup>.

In North America, medico-legal difficulties have been experienced in determining disability in fibromyalgia patients. To minimise these problems, it is suggested that:

- 1) Assessment methods be developed and standardised.
- 2) Standard criteria for diagnosis be recognised.
- 3) Objective measures be utilised.
- 4) Effective rehabilitation programmes be developed<sup>(39)</sup>.

## REFERENCES

1. Simons D. Muscular Pain Syndromes. *Advances in Pain Research & Therapy*. 1975; 17 : 142
2. Wolfe F, Smythe H A, Yunus M B et al. The American College of Rheumatology 1990 criteria for the classification of fibromyalgia. Report of the Multi-Centre Criteria Committee. *Arthritis Rheum*. 1990 ; 33 : 160-172
3. McCain G A and Scudds R A. The concept of primary fibromyalgia (fibrositis): clinical value, relation and significance to other musculoskeletal pain syndromes. *Pain*, 33 (1988) : 273-287
4. Goldenberg D L. Clinical features of fibromyalgia. *Advances on Pain Research and Therapy*. 17 : 139-146
5. Bennett R M, Fibrositis. In : Kelley W N, Harris E D, Ruddy S, Sledge D B (eds) *Textbook of Rheumatology*. Saunders, Philadelphia Tokyo. (1989) : 541-553
6. Cathey M A, Wolfe F, Kleinheksel B M and Hawley D J. Socioeconomic impact of fibrositis. A study of 81 patients with primary fibrositis. *Am J Med*. 81, Suppl. 3A 1986 : 78-84
7. Boissevain M D, McCain G A. Towards an integrated understanding of fibromyalgia syndrome I. Medical and pathophysiological aspects. *Pain* 45 (1991) : 227-238
8. Fischer A A. Application of pressure algometry in manual medicine. *J. of Man. Med*. Vol. 5 No. 4 (1990) : 145-150
9. Fischer A A. Differential diagnosis of muscle tenderness and pain. *Pain Management*. Jan/Feb 1991 : 30-36
10. Scudds R A, Rollman G D, Harth M and McCain G A. Pain perception and personality measures of discrimination in the classification of fibrositis. *J. Rheumatol*. 14 (1987) : 563-568
11. Yunus M B, Masi A T. Juvenile primary fibromyalgia syndrome *Arthr. Rheum*. 28 (1985) : 138-145
12. Wolfe F, Smythe H A, Yunus M B et. al. *Arthr. Rheum*. (In Press)
13. Moldofsky H. The contribution of sleep-wake physiology to fibromyalgia. *Advances in Pain Research and Therapy* Vol. 17. P227-240
14. Pilowsky F, Crettenden I, Townley M. Sleep disturbance in pain clinic patients *pain*; 23 (1985) : 27-33
15. Wolfe F, Hawley D J, Cathey M A. et. al. Fibrositis: symptoms, frequency and diagnosis *J. Rheum*; 12 (1985) : 1159-1163
16. Bennett R A. Myofascial pain syndromes and the fibromyalgia syndrome : A comparative analysis. *Advances in pain research and therapy*, Vol. 17 : 43-65
17. Felson D. Epidemiological research in fibromyalgia. *J. Rheum*. 1989; (Suppl. 19) 16 : 7-11
18. Hartz A & Kirchdoerfer E. Undetected fibrositis in primary care practice. *J. Family Practice* 25 (1987) : 365-369
19. Moldofsky H, Scarisbrick P, England R, and Smythe H. Musculoskeletal symptoms and non - REM sleep disturbance in patients with "Fibrositis Syndrome" and healthy subjects. *Psychosom. Med*; 37(1975) : 341-351
20. Bengtsson A, Henriksson K G. The muscle in fibromyalgia - A review of Swedish studies. *J. Rheum*. 1989; (Suppl. 19) 16 : 144-9
21. Jacobsen S, Danneskiold-Samsoe B. Muscle function in patients with primary fibromyalgia syndrome - an overview. *J. of Man. Med*. (1990) 5 : 155-157
22. Awad E A. Histopathological changes in fibrositis. *Advances in pain research and therapy*. Vol. 17. 1990
23. Bennett R M, Dana S N, Goldberg L. Aerobic fitness in the fibrositis syndrome: A controlled study of respiratory gas exchange and 133 xenon advance from exercising muscle. *Arth. & Rheum*. (In Press)
24. Bennett R. Physical fitness and muscle metabolism in the fibromyalgia syndrome. *J. Rheum*. 1989; (Suppl. 19) 16 : 58-61
25. Bennett R. Compounding features of the fibromyalgia syndrome. A comment perspective of differential diagnosis. *J. Rheum*. 1989; (Suppl. 19) 16 : 58-61
26. Boissevain M D, McCain G. Towards an integrated understanding of fibromyalgia syndrome. II psychological and phenomenological aspects. *Pain*, 45 (1991) 239-248
27. Goldbenberg D L. An overview of psychological studies in fibromyalgia. *J. Rheum*. 1989 (Suppl. 19) 16 : 12-14
28. McCain G A. Management of the fibromyalgia syndrome. *Advances in pain research and therapy*. Vol. 17 : 289-303
29. McCain B A, Bell D A, Mai F M, Halliday P D. A Controlled study of the effects of a supervised cardiovascular fitness training programme on the manifestations of primary fibromyalgia. *Arthr. Rheum.*, 1988; 31 : 1135-1141
30. Ferraccioli G G. et.al. E.M.G.-Biofeedback training in fibromyalgia syndrome. *J. Rheum*. 1987; 14 : 820-825
31. Bradley L A. Cognitive-behavioural therapy for primary fibromyalgia. *J. Rheum*. 1989; (Suppl. 19) 16 : 136
32. Goldenberg D L. A review of the role of tricyclic medications in the treatment of fibromyalgia syndrome. *J. Rheum*. 1989; (Suppl. 19) 16 : 137-9
33. Felson D T, Goldenberg D L. The natural history of fibromyalgia. *Arthr. Rheum*. 1986; 29 : 1522-6
34. Travell J, Simons D G. Myofascial pain and dysfunction : The trigger point manual. Baltimore: Williams and Wilkins, 1983; 63-158
35. Russell I J. et. al. Serum amino acids in fibrositis/fibromyalgia syndrome. *J. Rheum*. 1989; (Suppl. 19) 16 : 158-63
36. Henriksson K G, Bengtsson A. Muscular changes in fibromyalgia and their significance in diagnosis. *Advances in pain research & therapy*. Vol. 17 (1990) : 259-267
37. Burckhardt C S, Clark S R, Bennett R M. The fibromyalgia impact questionnaire: development & validation. *J. Rheum*. 1991; 18 : 778-33
38. Hiemeyer K, Lutz R, Menninger H. Dependence of tender points upon posture - A key to understanding fibromyalgia syndrome. *J. Man. Med*. (1990) 5 : 169-174
39. McCain G A, Cameron R, Kennedy J C. The problem of long term disability payments and litigation in primary fibromyalgia. The Canadian perspective. *J. Rheum*. 1989 ; (Suppl. 19) 16 : 174-6
40. Bennett R M. Beyond fibromyalgia: Ideas on aetiology and Treatment. *J. Rheum*. 1989; (Suppl. 19) 16 : 185-91.



# Clinical Biomechanics of the Sacroiliac Joint

Wade King

82 High Street, Taree, N.S.W., 2430

## ABSTRACT

**Biomechanical studies have demonstrated sacroiliac joint movements to be relatively small in amplitude, of the order of a few millimetres or a few degrees of angle. The directions of these movements are not around or along the cardinal biomechanical axes. Rather, they follow complex curved paths which may be described as the innominates moving in a rotatory fashion around axes which change according to the positions of the hip joints, the position of the lumbar spine and the relative loadings of all the structures involved. The greatest excursion of the sacroiliac joint has been demonstrated in a position of ipsilateral hip flexion with extension of both the contralateral hip and the lumbar spine. In these circumstances the innominate has been shown to rotate through a small range about an oblique axis running from the upper part of the pubic symphysis to the greater sciatic notch.**

**Movements of this quality and quantity are not likely to be elicited reliably by clinical tests in common usage, since they seek to determine movement in very small components of the demonstrated ranges. New clinical tests are suggested to assess the sacroiliac joints in the maximum ranges demonstrated experimentally. They involve rotatory techniques which may be useful to test for reproduction of symptoms and to provide some information about the quantity of movements present. Factors which may influence the sensitivity and specificity of these tests are discussed.**

## INTRODUCTION

The sacroiliac joint (SIJ) and its movements have been subjects of controversy for many years. Claims and counter claims have been made about the qualities and quantities of sacroiliac movements, how such movements are effected and controlled, and how they are related to the clinical phenomena of low back pain and dysfunction.

As commonly occurs when beliefs are not firmly founded on scientific facts, personal opinions have been substituted for knowledge and schools of thought have tended to become polarised. At one extreme are some proponents of the manipulative disciplines who claim that most SIJ problems are related to hypomobility and at the other extreme are some proponents of prolotherapy who argue that most SIJ problems are related to hypermobility. To say the least, all this is very confusing for those medical practitioners who try to maintain an unbiased view (and for many patients). In such a climate, much of the treatment of SIJ problems is undertaken on heuristic and empirical bases. This situation is unacceptable in a scientific medical context.

Questions arise as to what standards are available for the definition of physiological SIJ mobility and what methods are suitable for determining variations from the average ranges.

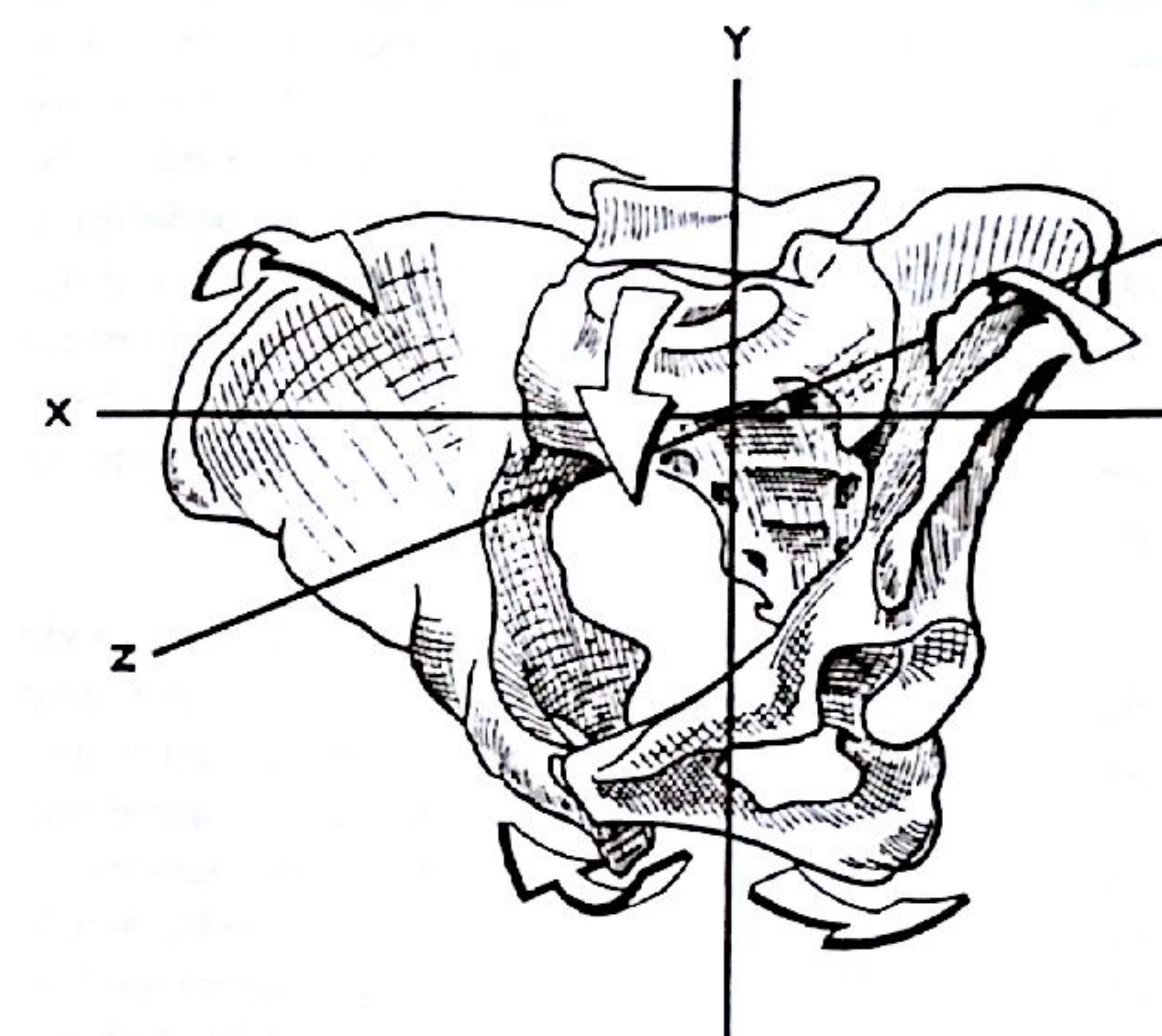
## SIJ MOVEMENTS

For many years the sacroiliac joints were considered not to move at all; they were considered to be synarthrodial. Sacroiliac movements were first described by Zaglas<sup>(1)</sup> in 1851 but the fact of SIJ movement was not generally accepted until quite recently; as late as the middle of the twentieth century major anatomic texts were describing the SIJs as immobile.

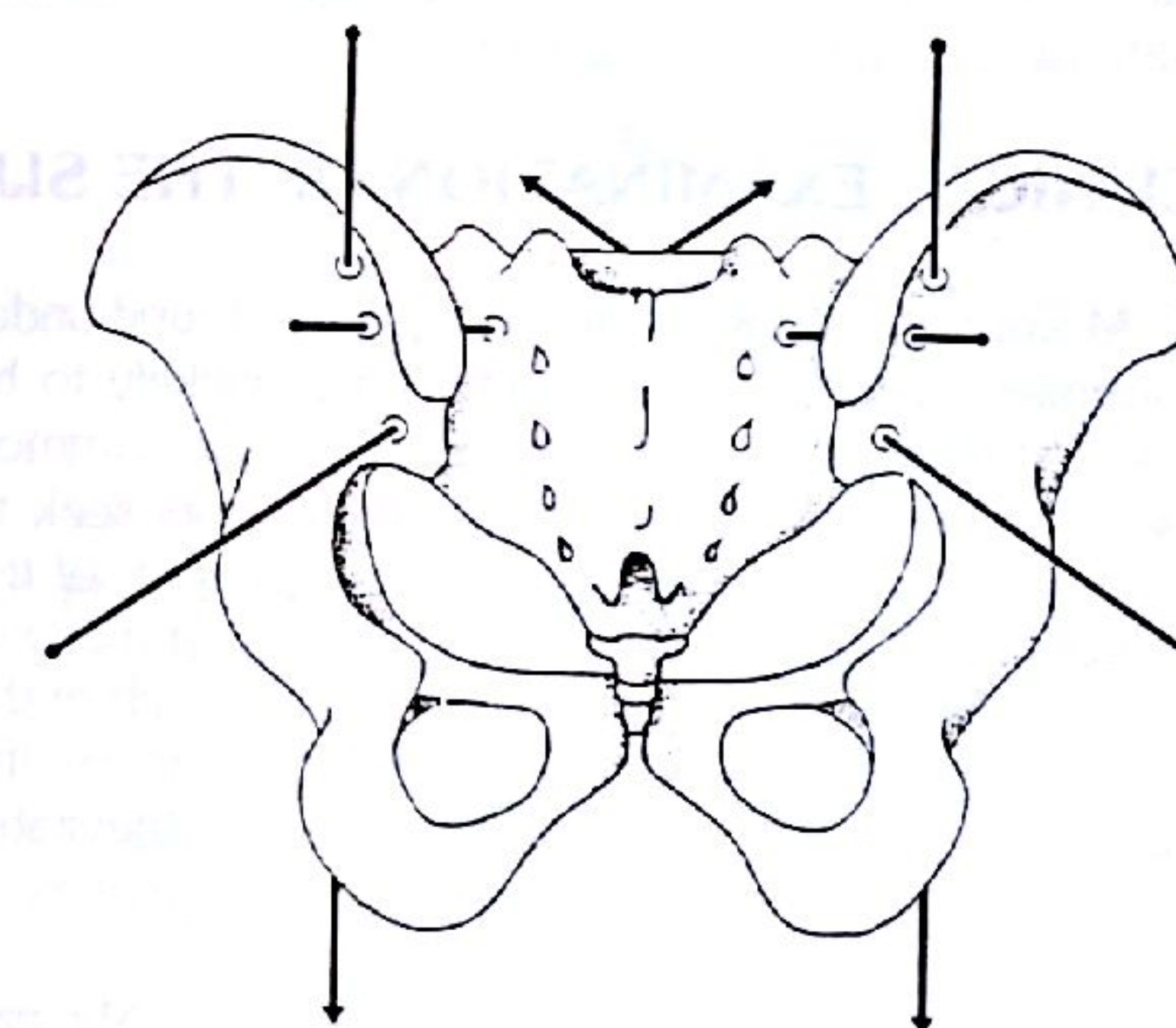
In recent years, it has become generally accepted that motion does occur at the sacroiliac joints but there has been a great deal of debate about the nature of that motion.

The main component of movement between the sacrum and the ilia is described in most current texts as nutation/counter nutation of the sacrum in the sagittal plane (around the biomechanical X axis). This is often described as being accompanied by rotation of the innominates around the biomechanical Z axis such that the iliac crests flare inwards on sacral nutation and outwards on sacral counter nutation<sup>(2)</sup>(Figure 1).

The precise axes of these movements have remained uncertain, with numerous theories being advanced. Perhaps the most popular theory involves three pairs of axes passing through or very close to the SIJs<sup>(3)</sup>(Figure 2).



**Fig. 1** The pelvis with the cardinal biomechanical axes marked X, Y and Z (after Sturesson) and the theory of nutation and flaring shown by the large arrows (after Kapandji).



**Fig. 2** The three pairs of axes of sacroiliac movements suggested by many authors (after Sutter and Duorak).

These rather simplistic notions of SIJ movements are predicated on the assumption of symmetric hip and spine positions. They fall far short of the complex sequence of events when hip and trunk movements are asymmetric, as in walking (especially on uneven or inclined surfaces). They also pay little heed to the effects of various loadings on the soft tissues which generate and control sacroiliac movements.

Much of the knowledge of SIJ movements has been derived from post mortem studies, using isolated pelvic specimens. Valid information is gained in this way about the physical properties of the various tissues and structures, but care must be exercised in relating such findings to the circumstances which pertain in vivo.

The technique of X-ray stereophotogrammetry has been used to obtain objective evidence of the quality and quantity of SIJ movements in living subjects. It was first used by Colachis et al.<sup>(4)</sup> in 1963; they placed Kirschner wires in the posterior superior iliac spines of twelve subjects (mostly healthy medical students) and studied the relative movements of the ilia in various postures.

More recent stereophotogrammetric studies, such as those of Egund et al.<sup>(5)</sup>, Lavignolle et al.<sup>(6)</sup> and Sturesson et al.<sup>(7)</sup>, using tantalum ball markers in bone and/or lead wire reference grids together with carefully controlled orthogonal X-ray techniques, have produced a great deal of useful information about the relative displacements of sacrum and ilia, the axes of SIJ movements and the direction and amplitude of the translation along and rotation around these axes.

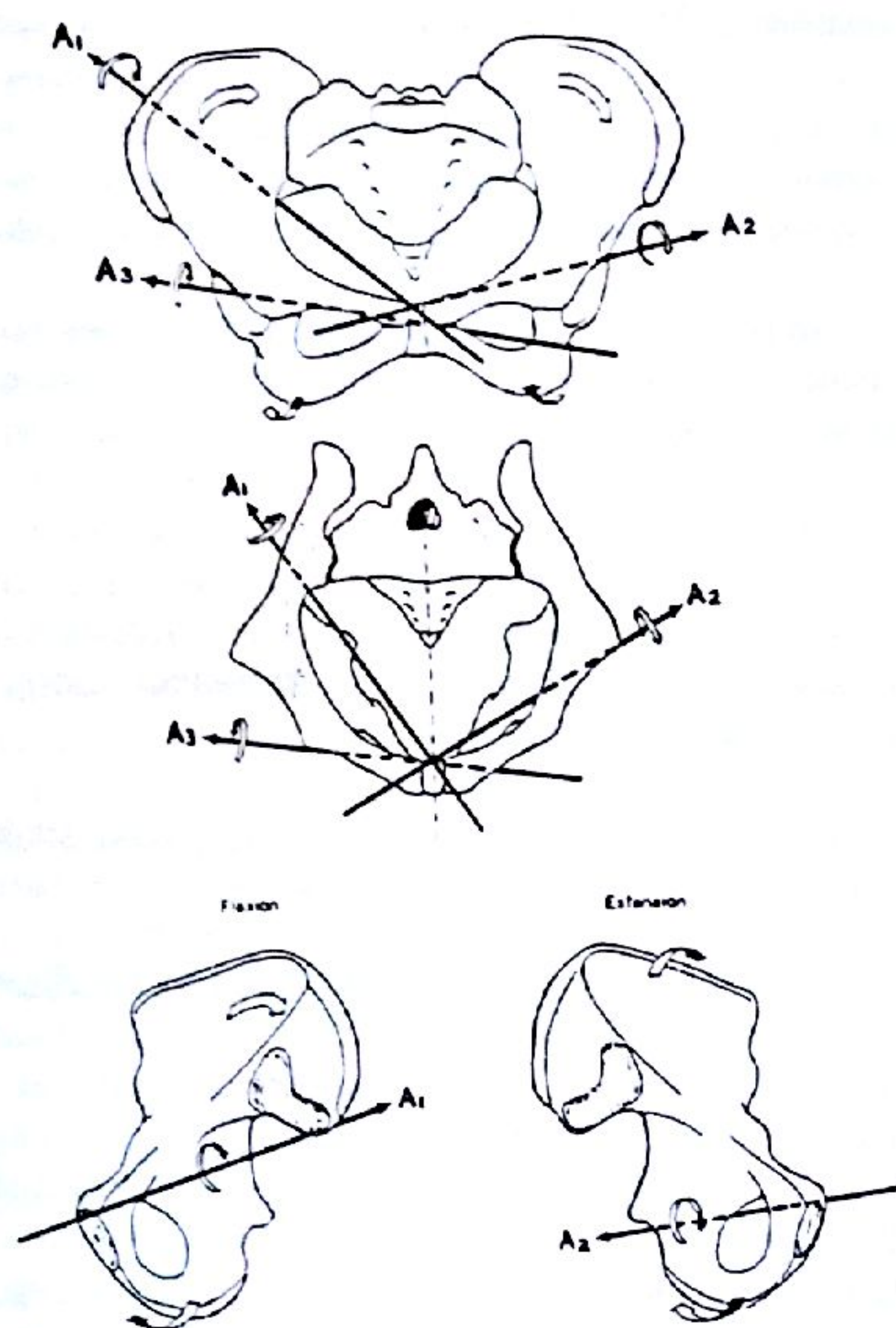
In particular, the study of healthy young adults by Lavignolle et al.<sup>(6)</sup> showed the complex movements of the SIJs associated with asymmetric movements of the hips. These SIJ movements were described as rotations of the innominates with respect to the sacrum, together with translations of the innominates along the axes of rotation, with phenomena of 'locking' and 'unlocking' of the joints being observed. The greatest excursions of the SIJs were found to occur in positions of ipsilateral hip flexion with extension of both the contralateral hip and the lumbar spine. In these circumstances anterior translation of the innominate seemed to follow 'unlocking' of the SIJ and the innominate was observed to rotate so that the ilium moved backwards and medially and the ischium forwards and laterally. Although there were slight differences between individual subjects, the axes of these rotations lay in a zone below and in front of the SIJs, with an oblique posterolateral orientation from the upper part of the pubic symphysis to the greater sciatic notch (Figure 3).

The amplitude of SIJ movements has also long been a subject of controversy. Claims have been made by some authors for movements of up to 26mm (8) but doubt has been expressed about the methods by which such figures were obtained. The carefully controlled study of Sturesson et al.<sup>(7)</sup> showed maximal rotations with a mean of 2.5° (range 0.8° to 3.9°) and translations with a mean of 0.7mm (range 0.1mm to 1.6mm). However, these movements were measured in relation to the cardinal biomechanical axes (X, Y and Z axes); also, the subjects were patients of a hospital orthopaedic department and were chosen because they had sacroiliac



symptoms. Similar ranges were reported by Egund et al.<sup>(6)</sup> in their study of symptomatic individuals and again they were expressed in relation to the X, Y and Z axes.

The study of Lavignolle et al.<sup>(6)</sup> was of asymptomatic young adults and measurements were made around and along the observed axes of movement rather than the cardinal reference axes.



**Fig. 3** Movements of the sacroiliac joints and their axes as demonstrated stereophotogrammetrically by Lavignolle et al. Note that the concomitant movements of the two SIJs are not symmetrical. As the right ilium moves with respect to the sacrum around the axis marked  $A_1$ , the left ilium moves with respect to the sacrum around the axis marked  $A_2$  and the right ilium also moves with respect to the left ilium around the axis marked  $A_3$ <sup>(6)</sup>.

Not surprisingly, these observations showed somewhat greater ranges of movement, with mean rotation about the  $A_1$  axis of  $12^\circ$  and mean anterior translation of the ilium along this axis of 6mm. These measurements have great significance in relation to the assessment of SIJ mobility in the clinical situation.

Before considering the clinical assessment of sacroiliac mobility it is important to have some appreciation of the factors which effect and control SIJ movements.

The anatomic structures which contribute to the generation of SIJ movements include all the muscles attached to the bony pelvis and, indirectly, all muscles acting on the lumbar spine and the femora. The kinematic relationships between these structures are complex but each has a role to play in what might be termed the lumbo-pelvic-femoral chain. Consideration of these roles is beyond the scope of this paper but the complexity of the relationships must be borne in mind when patients are assessed clinically and diagnostic formulations are made to describe the aetiology of problems manifest.

The structures which limit SIJ movements include the sacroiliac ligaments, the sacrospinous and sacrotuberous ligaments, the iliolumbar ligaments and all the connections of the pelvis, the lumbar spine and the femora. Again, the complexity of the kinematic relationships is more important than the individual role of any particular structure and the emphases placed by various authors must be interpreted in this light. Longer structures with direct attachments produce larger mechanical moments but pathogenetic roles cannot be predicted purely on the basis of anatomic site and size. Load-displacement studies such as those of Miller et al.<sup>(9)</sup> and Vleeming et al.<sup>(10)</sup> draw attention to both the relative stability of the SIJ and the dynamic influence of structures as distant as the long head of the biceps femoris, which exerts a limiting role on SIJ mobility through its connection with the sacrotuberous ligament.

## CLINICAL EXAMINATION OF THE SIJ

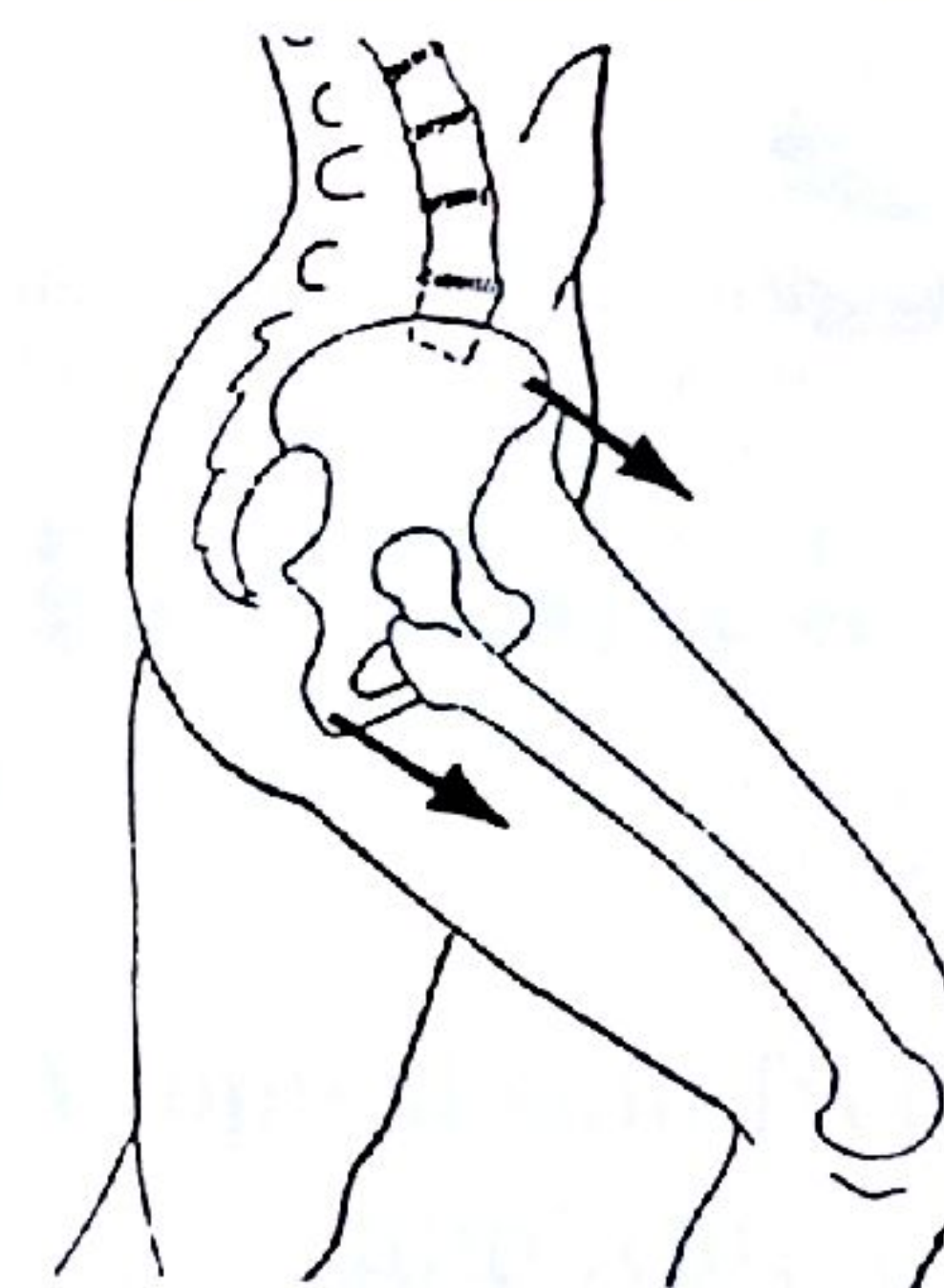
Movements of the quality and quantity found under controlled experimental conditions are unlikely to be detected reliably by any of the clinical tests in common use. One reason for this is that these tests seek to determine movement in very small components of the demonstrated ranges. Another reason is that many of the tests are indirect and non-specific, and much of the information resulting from them is obscured by the 'background noise' of soft tissue changes which inevitably accompany joint movements in the test procedures.

For example, the clinical tests suggested by Macnab in his widely-read text on backache<sup>(11)</sup> are all quite non-specific. No reliable diagnostic formulation could be made on the information gained from them and certainly no decision about management should be made on such a basis, although this undoubtedly does happen. To be fair, Macnab expresses doubts about the specificity of these tests but he does not suggest any more reliable methods.

The tests proposed by Corrigan and Maitland<sup>(12)</sup> are certainly more localised and they attempt to assess accessory movements of the SIJs as well as physiological ones. However, none of these tests provides much information about movement in the ranges described by

Lavignolle et al. The same can be said of the tests described by the thirty manual medicine experts of the F.I.M.M. scientific committee in the publication "Manual Medicine 1984"<sup>(13)</sup>.

New clinical tests are suggested as additions to, or even substitutes for, those currently in use. Based on the findings of Lavignolle et al., these tests attempt to assess sacroiliac movements along and around the oblique axis from the pubic symphysis to the greater sciatic notch. The tests are performed with the patient lying (on the opposite side to that being assessed) with lumbar spine extended, ipsilateral hip flexed to  $60^\circ$  and contralateral hip extended to  $15^\circ$ , so approximating as closely as possible the described position of greatest SIJ mobility. The examiner stands facing the patient and takes hold of the innominate bone of the side being tested, with one hand around the ischial tuberosity and the other around the anterior superior iliac spine. Two movements are assessed. Anterior translation of the innominate along the oblique axis is tested by a distraction force (Figure 4).



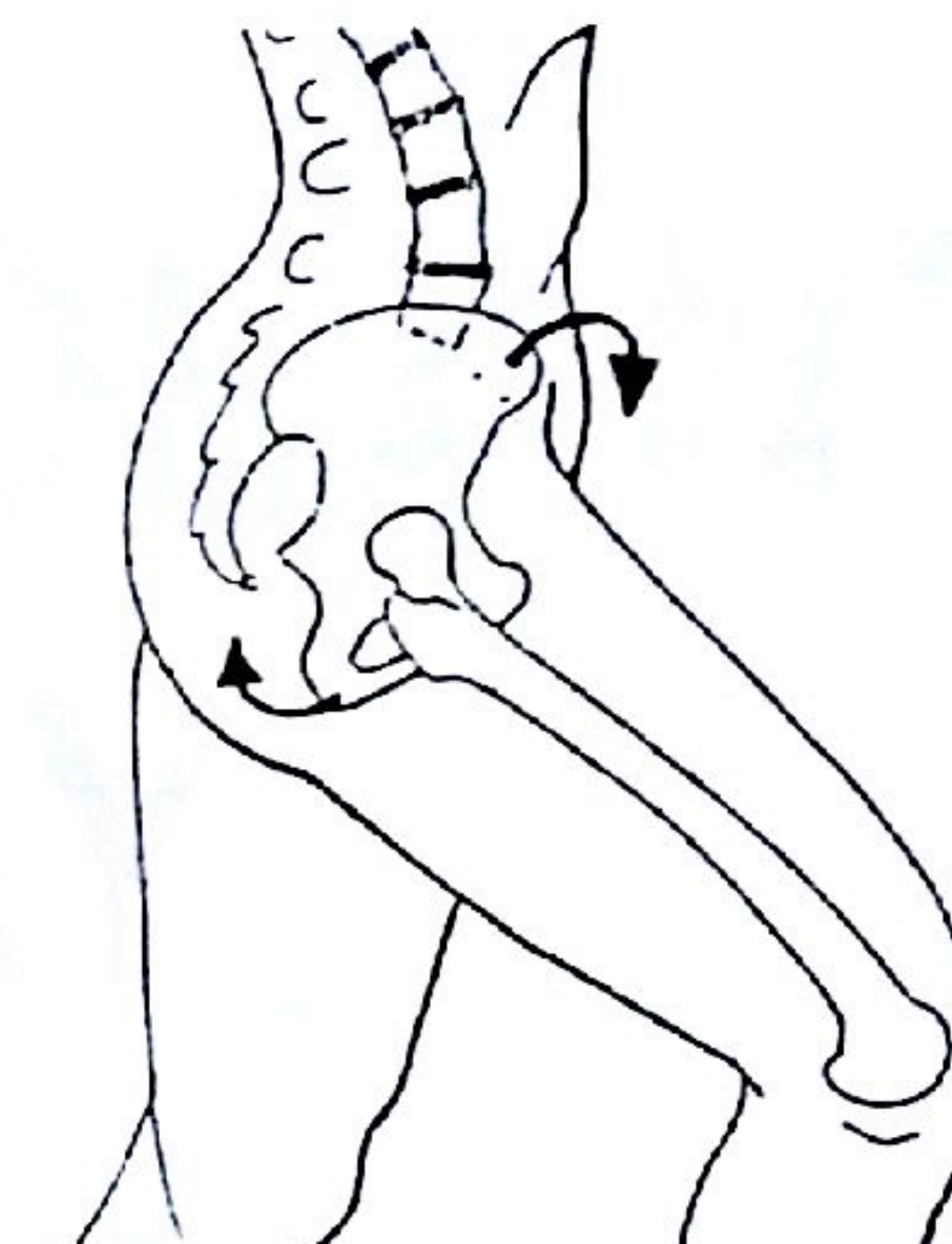
**Fig. 4** The first stage of the suggested method of clinical examination of the sacroiliac joint. The innominate is distracted along the axis of the greatest demonstrated range of movement (the motion described by some biomechanical researchers as "unlocking" the joint).

Rotation of the innominate around the oblique axis is tested by lifting the ischium and depressing the ilium with a rotatory action (Figure 5).

These tests attempt to assess the sacroiliac joints in the maximum ranges demonstrated experimentally. The techniques may be useful to test for reproduction of symptoms and to provide some information about the amplitude of movements present.

The sensitivity and specificity of these tests have not yet been determined by controlled experiments. It is considered that, when properly performed, the test

movements are fairly well localised to the sacroiliac region but not to the sacroiliac joints only. All soft tissues attached to the innominate will be affected by the test procedures, as will the ipsilateral hip joint. The tests are expected to have a high degree of sensitivity for sacroiliac dysfunction and false negative tests will probably be related mainly to poor technique. Specificity is expected to be lower and, if this proves to be true, the test results will need to be interpreted in the light of more specific tests of pelvic muscles and ligaments, and of the hip joint. Nonetheless, the tests are offered as additions to the assessment armamentarium, with the value of being based on established biomechanical data.



**Fig. 5** The second stage of the suggested method of clinical examination of the SIJ. The innominate is rotated around the axis of its greatest range of movement.

## DISCUSSION

The biomechanical studies have demonstrated sacroiliac joint movements to be relatively small in amplitude, of the order of a few millimetres or a few degrees of angle. The directions of these movements are not around or along the cardinal biomechanical axes of X (so-called 'nutration-counter nutation' in the sagittal plane), Y (craniocaudal translation) and Z (anteroposterior translation). Rather, they follow complex curved paths which may be described as the innominates moving in a rotatory fashion around axes which change according to the positions of the hip joints, the position of the lumbar spine and the relative loadings of all the structures involved. The greatest excursion of the sacroiliac joint has been demonstrated in circumstances corresponding to a position of ipsilateral hip flexion with extension of both the contralateral hip and the lumbar spine; then the innominate has been shown to rotate through a small range about an oblique axis running from the upper part of the pubic symphysis to the greater sciatic notch.



Appreciation of the biomechanics of the sacroiliac joints provides fresh insights into mechanisms of dysfunction involving these joints and into ways in which pain may be generated from the sacroiliac regions. It also raises questions about clinical assessment of sacroiliac joint function and interpretation of the information resulting from it. Currently applied clinical tests seem to have little correlation with biomechanical reality. Further, those tests are used in much the same ways by different practitioners to support diagnoses based more on doctrinaire assumptions than on clinical objectivity. The reproduction of symptoms by these tests is considered by some to be evidence of hypomobility and by others to be evidence of hypermobility, with quite different management strategies supposedly indicated by such diagnostic determinations. Controversies about the functions of the sacroiliac joints and their possible roles in pain generation and, in particular, arguments about the relative merits of increasing (by manipulative techniques) and reducing (by sclerosant injections) the ranges of the SIJs would be better laid aside until some consensus is reached on what is known about SIJ function and what can be done to assess it (either clinically or otherwise).

The new rotatory tests are offered as suggestions for ways in which the sacroiliac joint might be assessed clinically in the ranges demonstrated experimentally. Other, more definitive tests may and probably will evolve. Most likely, a number of such tests will be required for a reliable diagnosis. In this context, the details of the techniques do not really matter. What is important is that whatever methods are used in diagnosis,

the information derived from them must be consistent with the biomechanical data. Also, factors which may influence the sensitivity and specificity of any tests used must be precisely defined. Clearly, these criteria cannot yet be met in clinical assessment of the sacroiliac joint and further studies are required.

## CONCLUSION

A better understanding of sacroiliac joint function will not, of course, solve all clinical problems associated with it. Low back pain usually arises from a complex dysfunctional state involving several structures which are functionally integrated. The old convention of ascribing a single diagnostic entity to explain a patient's condition leads to inadequacies of understanding and of management, and is probably the biggest single factor in so-called "failures" of treatment. Diagnostic formulation which takes into account the inter-relationships of the various structures potentially involved, as well as the known functions of each, will more likely lead to an appreciation of the factors contributing to a particular patient's problem.

Understanding of the demonstrated nature of sacroiliac movements and the factors which influence them should lead to more rational interpretation of symptoms which seem related to the sacroiliac region. Investigating better methods of examining SIJ movements should result in more precise diagnostic formulation and more definitive management based on scientific principles rather than on heuristic beliefs.

## References

1. Zaglas D, in Gairdner and Barlow. Mechanism of the pelvic articulations. *Month J Med Sci* 1851; 21: 289.
2. Kapandji I A. *The Physiology of the Joints. Volume 3.* Churchill Livingstone, Edinburgh, 1974; p.65.
3. Dvorak J, Dvorak V. *Manual Medicine: Diagnostics.* Georg Thieme Verlag, Stuttgart, 1984; p.18.
4. Colachis SC, Warden RE et al. Movement of the sacroiliac joint in the adult male: a preliminary report. *Arch Phys Med Rehab* 1963; 44: 490-498.
5. Egund N, Olsson TH et al. Movements of the sacroiliac joints demonstrated with roentgen stereophotogrammetry. *Acta Radiol Diagn* 1978; 19: 833-846.
6. Lavignolle B, Vital JM et al. An approach to the functional anatomy of the sacroiliac joints in vivo. *Anat Clin* 1983; 5: 169-176.
7. Sturesson B, Selvik G, Uden A. Movements of the sacroiliac joints: a roentgen stereophotogrammetric analysis. *Spine* 1989; 14(2): 162-165.
8. Frigerio N, Stowe R, Howe J. Movement of the sacroiliac joint. *Clin Orthop Rel Res* 1974; 100: 370-377.
9. Miller JAA, Schultz AB, Andersson GB. Load-displacement behaviour of sacroiliac joints. *J Orthop Res* 1987; 5(1): 92-100.
10. Vleeming A, Stoockart R, Snijders CJ. The sacrotuberous ligament: a conceptual approach to its dynamic role in stabilising the sacroiliac joint. *Clin Biomech* 1989; 4(4): 201-203.
11. Macnab I. *Backache.* Williams and Wilkins, Baltimore 1990; pp. 66-67.
12. Corrigan B, Maitland GD. *Practical Orthopaedic Medicine.* Butterworths, Sydney, 1983; pp 326-331.
13. Dvorak J, Dvorak V, Schneider W (eds.) *Manual Medicine* 1984. Springer-Verlag, Berlin, 1984; pp. 188-191.



**EAGLE**  
PHARMACEUTICALS

*New!*

# VAPO COOLANT SPRAY

For Quick Temporary Freezing

• A topical skin freeze for external application

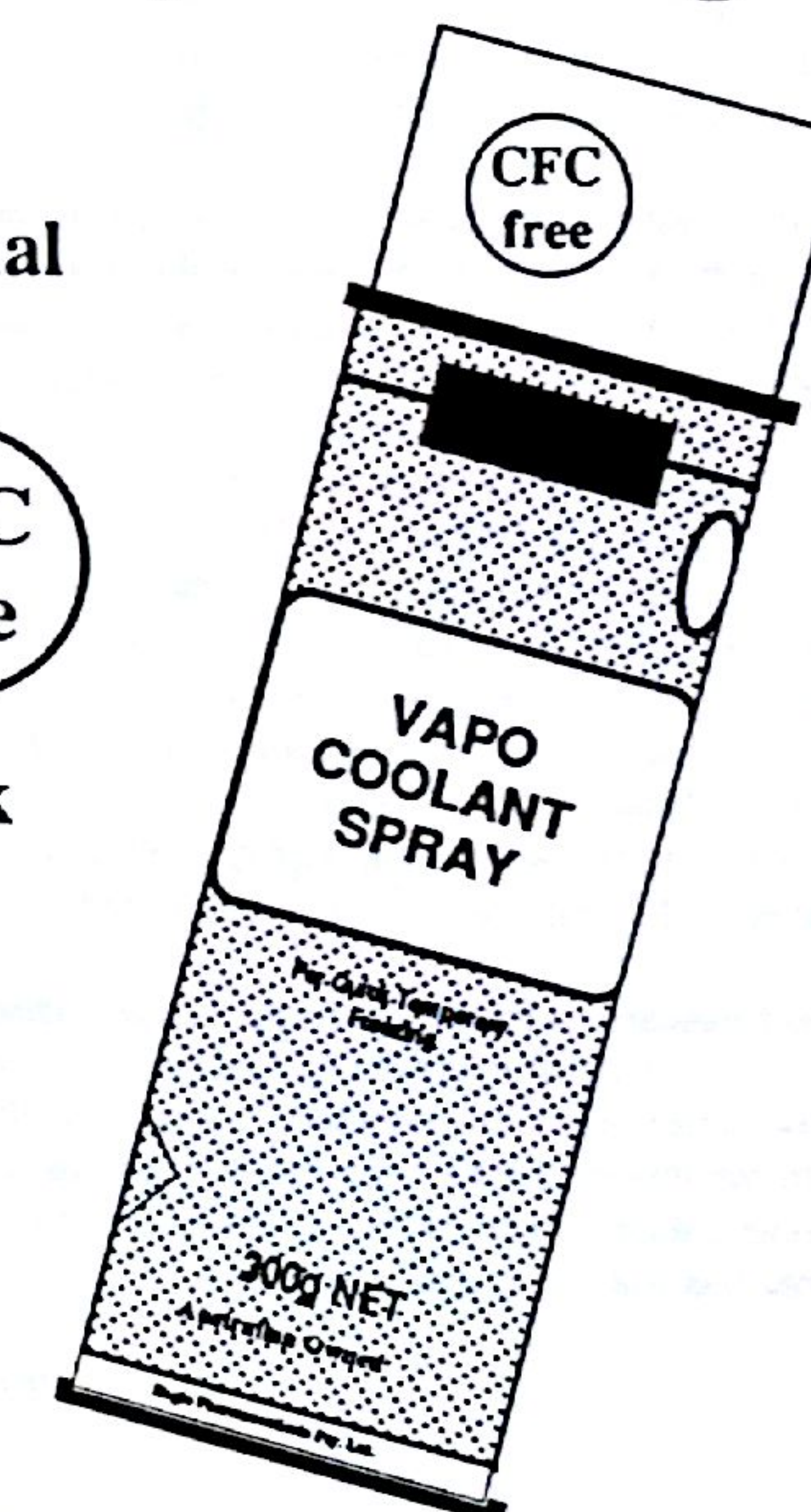
• Environmentally safe - CFC free

• Large 300g spray pack

• Australian manufactured and owned

Eagle Pharmaceuticals Pty. Ltd.

Ph (02) 634 3122





## BOOK REVIEW

### **Myofascial Pain and Dysfunction. The Trigger Point Manual. Volume 2. The Lower Extremities**

by Janet Travell, M.D. and David Simons, M.D.

Williams & Wilkins, Baltimore, 1992.

The first volume of Travell and Simons's monumental work led to a breakthrough in the understanding of muscular dysfunction when it was published in 1983. It was hailed around the world by authorities in associated fields for the explanations it provided for hitherto poorly understood musculoskeletal symptoms and their origins. Vague concepts of "soft tissue injuries" which were presumed to cause only mild and temporary symptoms were no longer scientifically legitimate. As John Basmajian says in his foreword to Volume 2: "Myofascial trigger points and their significance in painful conditions are no longer the rather controversial subject they were before Volume 1 appeared, nor are the treatment methods taught by Doctors Travell and Simons. These are firmly established and are increasingly being validated by once sceptical clinical investigators".

Volume 1 set out a perspective of the various types of muscular dysfunction and their places in the overall spectrum of musculoskeletal disorders. In particular, it demonstrated the significance of myofascial trigger points and provided well-founded explanations of their aetiology and pathophysiology. It went on to explain the many clinical phenomena, both subjective and objective, associated with them and established the importance of trigger point syndromes, understanding of which is fundamental to any interpretation of musculoskeletal symptomatology. That volume then exemplified the principles by relating them systematically to the various muscle groups of the head and neck, upper back, shoulder, arm and torso in a clearly-written and well-illustrated practical guide to the diagnosis and treatment of soft tissue pain occurring in those regions.

The long-awaited Volume 2 provides a lot more than the extension of the principles to the lower body and a practical guide to soft tissue pain in the lower limbs. It reviews the concepts set out in Volume 1 in the light of subsequent studies and points out aspects which have been clarified by more recent research. It also explores the inter-relationships between trigger point syndromes, fibromyalgia and somatic pain related to articular dysfunction. A useful section in the introductory chapters addresses the problem of taxonomy of conditions associated with soft tissue pain and provides concise notes on thirteen current terms to reduce the propensity for confusion between the various entities. The bulk of the volume is a systematic guide to the various muscle groups of the lower trunk and legs, set out as in Volume 1 in terms of associated pain patterns, relevant regional anatomy, neurology, functional considerations, clinical features, techniques of clinical assessment and treatment (including such modalities as intermittent cold with stretch, injection and stretch, and corrective exercises). The authors refer to some length to problems in obtaining supplies of vapocoolant spray for the spray and stretch techniques described in Volume 1, following the withdrawal from the U.S. market of those products which contain chlorinated fluorocarbons. Australian readers will know that suitable vapocoolant spray which does not contain C.F.C.s is readily available on the Australian market, so they can employ the spray and stretch techniques as originally described.

In his foreword to the first volume, Rene Cailliet stated that the work of Travell and Simons would become a classic for years to come; that prophecy has certainly been fulfilled. In a review of that first volume in an A.A.M.M. Bulletin of some years ago, the reviewer stated that the book deserved a place beside the examination couch of every practitioner involved in the treatment of soft tissue pain. He went on to say that few books have the capacity to improve the reader's skills in both clinical diagnosis and treatment. The *Trigger Point Manual*, now complete in its two volumes, certainly has that potential.

607pp. approx. \$180.00



## ADVERTISERS' INDEX

Atkinson	32
Ciba-Geigy	28, 29, 41, IBC
Eagle Pharmaceuticals	55
McKenzie Aids	15
Medtronic	2
Squibb	IFC

There is space on this list for many other companies with interests in the field of musculoskeletal medicine. The Bulletin welcomes advertisements for any products or services considered worthy of members' attention. Advertising managers are invited to contact the editor.

**Voltaren**<sup>®</sup>  
(diclofenac sodium)  
RELIEVES ARTHRITIC PAIN.



