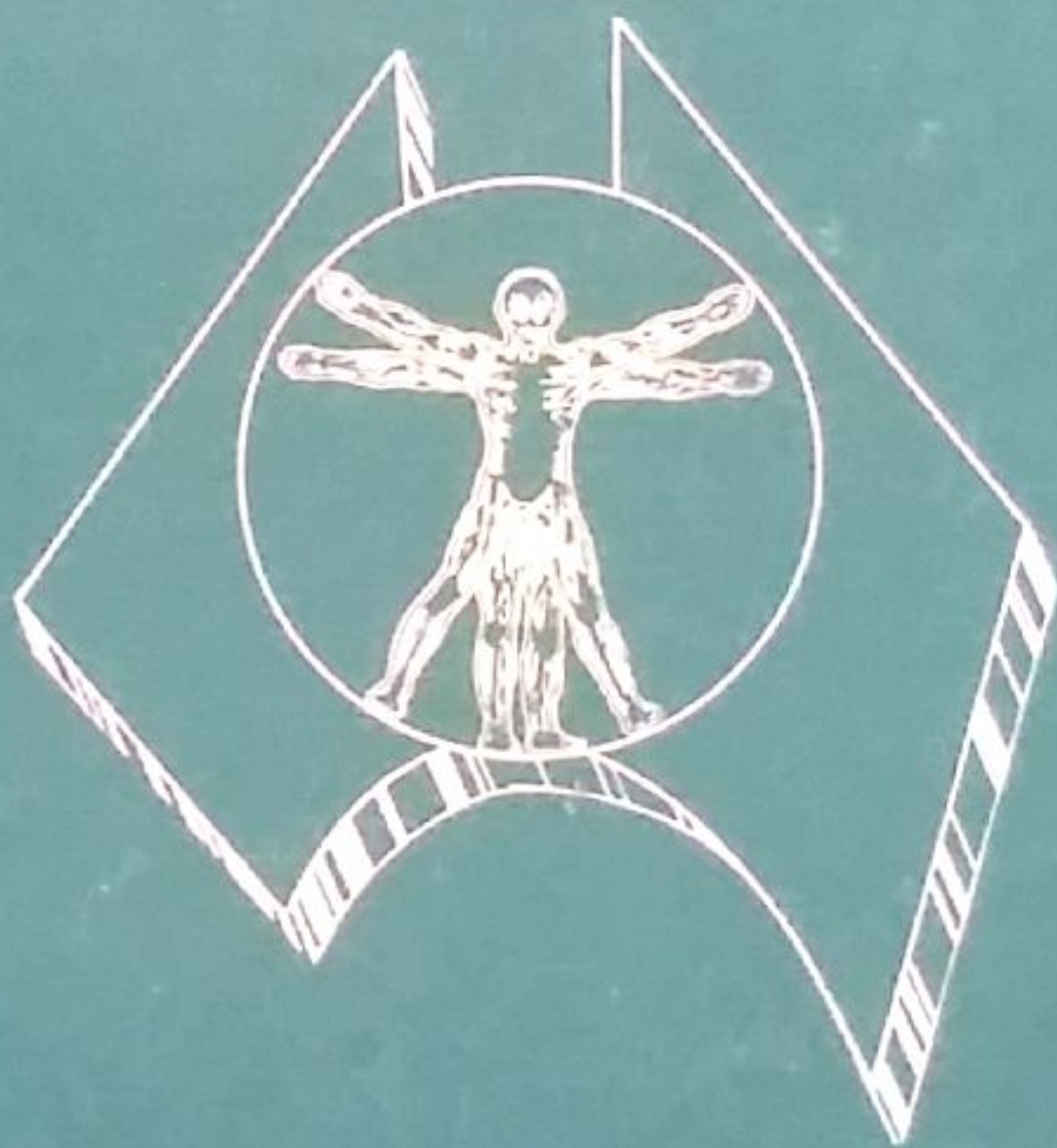


Australian Association of Musculoskeletal Medicine

Bulletin



Musculoskeletal Dysfunction - Protocol for Clinical Assessment

**Prevalence of Pain Complaints in a General Population:
An Australian Study**

Vol. 9 No. 3 December 1993

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Australian Association of Musculoskeletal Medicine

Bulletin

Vol.9 No.3

December 1993

CONTENTS

Office-bearers 1993	3
Editorial	4
President's Report	5
From the Hon. Secretary's Desk	7
A.A.M.M. News	8
N.Z.A.M.M. News	11
Clinical Assessment	12
Prevalence of Pain Complaints in a General Population: An Australian Study	54
<i>S Strauss, F Guthrie and Fred Nicolosi</i>	
Book Reviews	62

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 editor or the Association. Editorial comment may reflect the opinions of the editor alone. Contributions on any relevant topic are welcome for submission to the editor, 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.

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The following members were elected to office at the annual general meeting in Rotorua on 31st July, 1994.

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DipEd, DipRACOG, FRACGP

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Dr. Max de Clifford MB, BS, FAMAS, FRACGP, DROCG

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telephone (03) 873 2537



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Dr. Michael Creswick	Beecroft, N.S.W.	(02) 481 9585
Dr. Geoff Harding	Sandgate, Qld.	(07) 269 1842
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Dr. David McGrath	Deakin, A.C.T.	(06) 285 1833
Dr. Vic Wilk	Brighton, Vic.	(03) 596 7211

CO-OPTED MEMBERS:

Dr. Ron Palmer	Herston, Qld.	(07) 252 1128
Dr. David Vivian	Brighton, Vic.	(03) 596 7211

Editorial



Welcome to Clinical Assessment Mark II. In September, 1989 the Bulletin published the first Patient Assessment Protocol for musculoskeletal medicine. This appears to have been the first major work of its type ever to be formatted in print. A great deal of toil was expended in producing this work that provided the necessary basis of how to undertake a complete and systematically thorough physical examination. It would appear, from general observation, that few of those engaged in musculoskeletal medicine, paid little more than "lip service" to these principles.

A complete review of this work was undertaken at the combined meeting of Australian & New Zealand musculoskeletal teachers earlier this year. On Norfolk Island (see report in last Bulletin), a thorough review of the original work, together with a full review of the New Zealand Teaching Manuals was undertaken. Following the four day conference, the committee that was established to formalize the discussions, held a number of trans-Tasman tele-links. Finally the new Clinical Patient Assessment Protocol was written and is published in this edition of the Bulletin.

This now means that there is a **GOLD STANDARD** for all practising our specialty. All teaching should follow these outlines so that all students receive identical instruction. Of course individuals will do variations in their own consulting rooms, but for standardisation of teaching practices, all tutors should follow the guidelines. There has been a hitherto adhoc approach to student teaching that should now be a distant past in the evolution of our discipline. It is now up to each individual to become acquainted with these principles and adhere to them in teaching sessions. This will now be the accepted standard for both Diploma courses.

For several years there has been a number of requests for a return to more practical Annual Scientific meetings. The 1994 conference will be held in Brisbane and there will be emphasis on the more basic aspects of musculoskeletal medicine. You have asked for this, so it is now up to the members to support this conference.

It is not the place of an annual conference to teach members the basics of examination and techniques such as spinal manipulation. Every effort is made at either pre, or post conference workshops to accommodate a learning programme along these lines. In addition, the role of the Diploma courses at Flinders and Otago are especially designed to bring qualified doctors up to an acceptable theoretical and practical standard.

The true function of scientific meetings is precisely that . . . the advancement of scientific knowledge. In the seventies and early eighties we actually advanced very little in anatomical biomechanical and physiological understanding of musculoskeletal medicine. The influence of Nik Bogduk became quickly apparent with the evolution of true scientific meetings. By guiding the AAMM in this direction he was able to play a significant role in what is now arguably the fastest developing medical specialty. The years of Nik's presidency were a milestone, but to some, the movement forward may have been too rapid. The legacy of this period is twofold. First, we must continue with scientific meetings to advance our knowledge. Second, we must remain scientifically critical of anything that is presented to us. To question is to advance.

The AGM held at Rotarua saw changes to the committee of AAMM. New faces are essential so that stagnation of thought does not occur. Several committee members are also members of the "College of Physical Medicine" and it is pleasing to at last see co-operation between fragmented parties. There are not sufficient musculoskeletal practitioners to afford divisions. Further, it is political suicide to have factions arguing.

On behalf of AAMM this editorial would like to thank those immediate past committee members for their valuable time and for the positive input they made. To the new committee members, welcome, but like those before you, enthusiasm, dedication and hard work is not only expected, but demanded. Any organization can only be as strong as those steering the ship.



A word from the President

The Annual General Meeting of AAMM held in Rotorua in July elected me as President for the next twelve months. I am grateful to those who expressed confidence in the nomination and the voting and trust that the activities of AAMM in the next couple of years will reflect that confidence.

The discipline of musculoskeletal medicine has advanced considerably from the anecdotal means of arriving at a diagnosis. We are now thinking along more scientific lines that involve the principles of biomechanics to arrive at a functional diagnosis. However, we are still some way from being precisely scientific. Much in the world literature and especially that being produced in Australia is being channelled along the lines that will scientifically establish a discipline of musculoskeletal medicine in its own right in the years to come.

In the past, AAMM has offered courses for medical practitioners in the mobilising, diagnosing and treating of musculoskeletal dysfunction. We should continue to run workshops along these lines and to this end, the conference in Brisbane in October 1994, will have numerous half day workshops where small groups can update or learn aspects of treating musculoskeletal problems as may be experienced in their various practices.

In addition to running workshops, every state should have members eager to continue ongoing seminars, tutorials, etc. One way of doing this is to have a journal club which may meet quarterly, interspersed with a meeting to discuss difficult cases. This will enable members to keep abreast of what is in the literature as we now have many members able to use the medline research facility in medical libraries as well as having several academics appointed to medical faculties who have an interest in musculoskeletal teaching. Another area in which members should feel free to become involved in is the resurrection of the Certificate of Manual Medicine course which was ably executed through the efforts of John Murtagh and Clive Kenna. Due to numerous circumstances very little has been done in recent years. My suggestion is that this worthwhile course should be reinstituted along the lines in which it was originally taught, ie. weekend workshops with evening tutorials followed by a reasonably lengthy apprenticeship before final assessment of the clinical skills which have been learnt.

At the recent Annual General Meeting of the Royal Australian College of General Practitioners, I was very encouraged by the number of general practitioners wanting to learn more about injection techniques. Each workshop was filled to overflowing with an obvious need being demonstrated. As medical practice becomes more and more specialised there will be less and less for the general practitioner to do unless some additional skills are taught and learnt. The Certificate of Manual Medicine as well as the various workshops run by AAMM may go a long way in meeting such needs.

At present the ultimate standard for the practice of musculoskeletal medicine is the acquisition of the Diploma which is offered either by the Flinders University S.A. or the University of Otago, New Zealand. The Flinders University will see their first diplomats complete the course at the end of this year. Unfortunately, we can at this stage take no more than 8 - 10 entrants at any one time and this of course leaves a waiting list of people to do the course. I am most encouraged by those who have already participated in the course and feed back from these people is very positive even though the bulk of them have been engaged in considerable musculoskeletal medicine for many years.

It is obvious that musculoskeletal medicine is alive and well. We are developing a pool of expertise which must be increased if the discipline is to expand and not to be engulfed by other specialties or left to languish and wither.

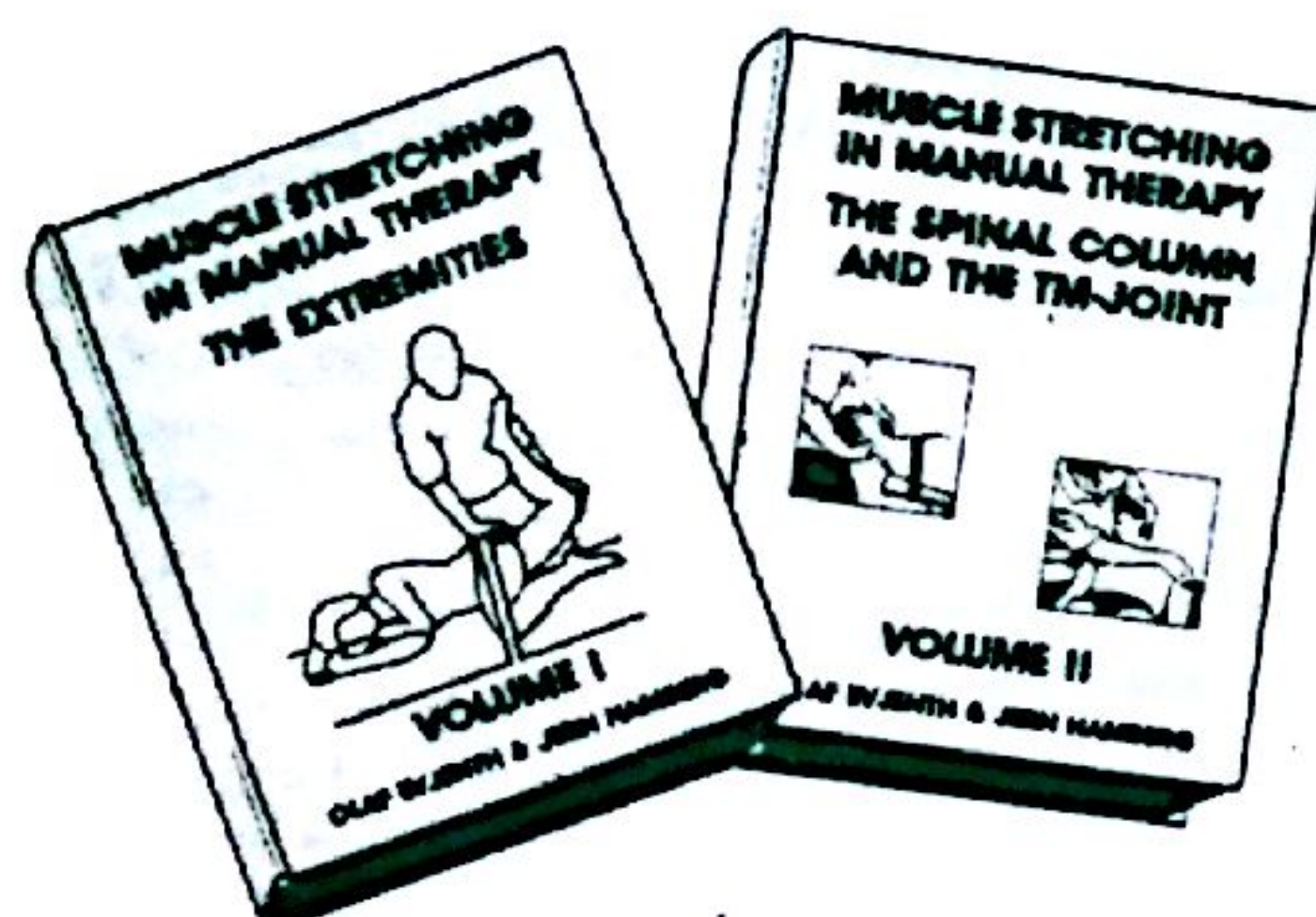
While the bulk of the work previously has been left to a few eager members of AAMM, the growth of musculoskeletal medicine can only be assured when there is a much wider participation by the membership at large. This will be enhanced with the appointment of people into musculoskeletal clinics in large public hospitals

as I have encouraged people to do so for quite some considerable time. It is not until we are established in large public hospitals that the concept of an Australian College of Musculoskeletal Medicine would become a viable entity. Thus we need a critical mass of members competent and practising full time in the area of musculoskeletal medicine before a college with fellows is contemplated. This does not mean that we should not wait until this critical mass arise before we work on the establishment of a college. Indeed I would see it as a priority in the next 12-24 months, that considerable effort be engaged in the establishment of a college and then work toward establishing fellows of such a college.

We already have a good working relationship with our counterpart in New Zealand and the formation of a Faculty of Teachers of Musculoskeletal Medicine at the Norfolk Island workshop is the first step in continuing the medical education of our discipline. This must be capitalised on a regional basis with a view to a trans-Tasman College of Musculoskeletal Medicine in the near future.

I trust you and your families enjoy a blessed Christmas and I look forward to being involved in advancing the skills, expertise and credibility of the discipline in the years to come.

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From the Hon. Secretary's Desk

Recently the first group of members completed the Flinders University course for the Diploma in Musculoskeletal Medicine. This marks another milestone in the development of the AAMM and of the discipline in Australia.

In the early years of the Association there was a great deal of discussion about what the discipline involved and how it related to other medical fields. There was not much doubt that it was a distinct field of interest with its own body of knowledge and particular clinical skills. How these might be defined was another matter. Viewpoints differed markedly and the field seemed bedevilled by the twin evils of assumed knowledge and self-appointed expertise. In the early 1970s, for example, it was enough for someone to present to a meeting an anecdotal series of clinical success stories, with no reference to outcome measures or statistical controls. The claimed results of such series were often accepted without question and less experienced members were encouraged to learn the secrets of the art so that they too, in time, could produce similar results.

The AGM at Tamworth in 1983 proved to be a turning point. Some will remember the discussion of issues raised by Jeffrey Phillips at that meeting. He spoke of prospects for wider recognition of the discipline as a specialised field and stated that it would depend upon the acceptance of scientific standards of practice. He also suggested the need for some form of objective assessment of knowledge and skill, such as academic qualifications awarded by universities or other educational bodies. These ideas seemed to challenge some strongly-held views and the debate which followed was lively. However, it led to general acceptance of the need for objective standards and a change of course in the development of the Association's affairs.

Over the next few years committees achieved the consolidation of the body of knowledge of musculoskeletal medicine in the form of the Association's syllabus in 1987 and the comprehensive protocol for the clinical assessment of patients in 1989. These documents set high standards for the discipline and were prepared in an atmosphere permeated with concepts of scientific validity and the "thought police" approach advocated by Nik Bogduk. In 1990 the Association developed the Licentiate programme as a first move towards objective assessment of members' expertise.

After much hard work by the current President, a postgraduate diploma course was established at the Flinders University in 1991. It was based firmly on the AAMM syllabus and gave practical expression to what many had seen as high-minded and possibly unattainable ideals. The first group of candidates began the course in 1991 and some of them completed it at the end of the 1993 academic year, to become the first to hold formal Australian qualifications in musculoskeletal medicine. It was ten years almost to the day after the ideas which had seemed so radical were first mooted.

Auspicious as these achievements may appear, they are really quite modest in the overall scheme of things and this is not the time for resting on laurels. The academic base of the discipline must be expanded and educational activity intensified. The Flinders course has blazed a path which others could follow. Clearly there is a thirst for knowledge in the field. More members must be encouraged to gain diplomas and more diploma courses provided for them. Those who reach that level should be encouraged to seek higher degrees through research-based Masters programmes and the like. Large numbers of hypotheses are waiting to be tested and development of the academic and research bases will enable them to be dealt with more quickly. It will also lead to firmer foundations for clinical practice in musculoskeletal medicine and higher standards of care for the patients whose needs the discipline seeks to serve.



The 1994 Scientific meeting and AGM will be held in Brisbane and on the Gold Coast in October. The programme will be in two separate segments, the formal conference in Brisbane and the workshop at the Coast. The theme of the conference is to be, "The Scientific Facts for the Acute Management of Musculoskeletal Problems".

Early intervention is the goal we should all seek in musculoskeletal medicine. This does not infer treatment of young people and our guest speaker has indicated that he will be including discussion on aging and spinal changes.

Our guest speaker will be Dr Jiri Dvorak, he is well known to our Kiwi colleagues, being associated with their Diploma course. For those unfamiliar with his background, he is based in Switzerland and travels extensively throughout the world lecturing on musculoskeletal topics.

He has written a number of text books related to the practice of musculoskeletal medicine. Two books of interest for pre-conference reading are companion editions which cover a number of subjects and include manipulation techniques. The title of these books are;

- a) Manual Medicine, Diagnostic (Ed 2);
- b) Manual Medicine, Therapy.

These are both available in Australia from D F Books & Journals, 649 Whitehorse Road, Mitcham, Victoria, 3132, telephone (03) 873 4411; facsimile (03) 873 5679.

Members wishing to present papers, or hold lecture sessions at the post conference workshops, are requested to contact Dr Philip Watson, Suite 26, McCullough Centre, 259 McCullough Street, Sunnybank, 4106, telephone (07) 344 1022, facsimile (07) 344 6688.

The Gold Coast workshop sessions are aimed at being the largest in both time and content that has been undertaken. Jiri Dvorak will be presenting some sessions and other sessions will be selected in keeping with the overall conference theme. There has been universal request for more practical 'hands on approach' and the organising committee has complied to your wishes. Therefore, in planning your trip to Brisbane, remember this is a full weeks conference, not a weekend one. Potential lecturers are reminded that several speakers can jointly share a venue. For example, one can speak on Anatomy and Biomechanics, another on pathological process and a third on treatment techniques. This also offers the advantage of the tutors for the practical session.



The fact that our Association still has a long way of making inroads into medical education is again underlined by the complete ignorance by the 'establishment'. In spite of initial representation by several of the AAMM teachers to the newly appointed professor of orthopaedic surgery in Queensland, a joint symposium between the Orthopaedic Department of the Queensland University and the Worker's Compensation board of Queensland on 'Low Back Pain', has completely bypassed any offer to our members to participate.

The topics for discussion are as follows:

- Epidemiology of low back pain
- Pathology of Disc Degeneration
- Radiology for low back pain
- Acute Low Back Pain in an Industrial Setting
- The Acute Disc Prolapse
- Surgery for Degenerative Disc Disease
- Spinal Stenosis
- Worker's Compensation Management of Back Pain

The list of speakers are in the main orthopaedic surgeons. While having little complaint at the quality of those speaking, it does appear to be a very naive and lopsided discussion when considering that the majority of patients presenting with early symptoms in fact will not be consulted by any surgeon. The basic fact remains that patients will in the main be seeing G.P.s and a very large number will be referred to Musculoskeletal Physicians. Of these patients, fortunately only a few will ever need to seek surgical intervention. On this basis, it would appear that exclusion of musculoskeletal physicians is unwarranted. The record of past surgical intervention does not have such a lily white hue that the exponents of conservative management should be so conveniently swept under the carpet.

The above observations are indeed interesting when compared to the comments made in the Editorial of 'The Journal of Orthopaedic Medicine', Vol. 15, 1993, No. 2 This Journal has world wide distribution and is produced in the UK. Several quotations from this Editorial are very pertinent.

'In the UK the 1990s promised to be a period of radical change in the delivery of care to people with pain and disability arising in the musculoskeletal system'.

'The established specialties increasingly acknowledged that many musculoskeletal presentations were not appropriate for referral to them...those with no surgical remedial condition ending up in orthopaedic clinics, or those without any inflammatory joint problem attending rheumatological clinics'.

The Editorial concludes with the sobering thought ...

'New medical specialties arise infrequently and usually by splitting off from one already established which often gives crucial initial institutional support. Musculoskeletal Medicine will leave no such launching pad and if it becomes a valued part of the UK spectrum of care, it will have achieved that status by recognising and adequately filling an important need of the community.'

No further comment needs to be expressed. Our road to recognition is going to be rough and resisted at all turns. Ignorance could be a factor, but then perhaps fence building is the unmentioned role.



The Queensland 'Musculoskeletal Medicine Journal Club' is up and running. The first meeting was held on October 20 and the second on December 1. The prime aim is to review journal articles of relevance to musculoskeletal medicine. By reviewing current literature and then objectively discussing the contents, it is hoped that the overall standard of knowledge of those partaking will improve. From this a more critical approach in everyday practice will result. This innovative approach to education is recommended for all State Committees to establish.



The first two year course for the Graduate Diploma of Musculoskeletal Medicine has been completed at Flinders Medical School. Results are not known at the time of going to print and a number of your anxious colleagues await sentencing. The graduation ceremony will be held in May 1994 and will make a milestone in Australian medicine. Twenty eight other members are currently actively involved in the course that is now firmly established.



A.A.M.M. ROLL OF HONOUR

The following members have held executive office in the Association since its formation in 1971:

PRESIDENTS:

Dr. Frank May	1971-73
Dr. Brian Corrigan	1974-76
Dr. Bunt Burnell	1977-78
Dr. Gordon Byth	1979
Dr. John Bosler	1980-84
Dr. Conrad Winer	1985-86
Dr. Nik Bogduk	1987-88
Dr. David Vivian	1989-91
Prof. Nik Bogduk	1992-93
Dr. Norm Broadhurst	1994-

HON. SECRETARIES:

Dr. Gordon Byth	1971-72
Dr. Murray Ingpen	1973
Dr. Conrad Winer	1974-84
Dr. David Vivian	1985-88
Dr. Norm Broadhurst	1989-93
Dr. Wade King	1994-

HON. TREASURERS:

Dr. John Livingston	1971-74
Dr. A. (Kitch) Kitchener-Smith	1975-76
Dr. M. (Toby) Arnold	1977-78
Dr. Alex Ganora	1979-86
Dr. Wade King	1987-92
Dr. Max de Clifford	1993-

A full list of present office-bearers is on Page 3.

N.Z.A.M.M. NEWS

Report on the Annual Conference of the New Zealand Association of Musculoskeletal Medicine, 1993 including the Pre-Conference Programme

The annual conference was held at the Kingsgate Hotel, Rotorua, on Saturday, 31 July, and Sunday, 1 August. The NZAMSM was very pleased to be host to the AAMM and we looked forward to its participation.

There was a pre-conference programme organised by the NZAMSM consisting to two days of workshops, one specifically set aside for the AAMM and NZAMSM members, and a second for non-medically registered practitioners. These were held on the Thursday and Friday before the conference proper. As happens with the best laid plans, there was a mix-up for several people who attended the wrong day but nothing was lost and both of these days were well attended. On the second workshop day the NZAMSM concurrently ran several revision workshops for its members and an introductory session for those who wanted to see what musculoskeletal medicine was about.

The title of the Conference was "Myofascial Trigger Points" and the principle speaker was Dr Robert Gerwin. Dr Gerwin is a neurologist in private practice in Maryland in the U.S.A. and also has an attachment to John Hopkins University as an Associate Professor of Neurology. Other invited speakers from outside the NZAMSM included Dr Wade King, Dr Susan Lord, Dr Norman Broadhurst, Dr Paul Friedman and Dr Mike Butler. Invited speakers from within the Association included Dr Joe Brownlee and Dr Syd Choy.

The Conference started on the Friday evening with a "Ciba-Geigy Happy Hour" which allowed the guests to mingle and introduce themselves to one another. During this time some trout fishing on Lake Rotorua was arranged.

Over the next two days Dr Gerwin Spoke on the Myofascial Pain Syndrome discussing its definition, symptomatology, diagnosis and management.

These talks provided some lively discussion and questions from the floor.

The invited speaker spoke on a variety of topics. Dr Joe Brownlee discussed the "Sacro-iliac Joint Syndrome" dwelling particularly on the movement of the joint during gait. Dr Wade King gave us an amusing sermon on the cervical facet joint with some serious points for examination of conscience. Dr Susan Lord, gave a dissertation on nociceptive pain transmission and melded well with Mr Mike Butler's evidence for the possibility of facilitation of central pain modulation. Dr Norman Broadhurst spoke on buttock pain and its relationship to the sacro-iliac joint and piriformis muscle. Dr Paul Friedman spoke on the result of a years work in a back unit, and Dr Syd Choy discussed and demonstrated strain-counterstrain techniques.

The conference dinner was well attended and the first course was rainbow trout with the compliments of the piscatorial division of the AAMM and NZAMSM. It suffices to say, a good time was had by all.

In summary, the Conference was a success. It was well attended by members of both AAMM and NZAMSM and allied musculoskeletal groups. This was the first exposure in New Zealand to first-hand information on the topic and it was well received. The feedback to the NZAMSM was overwhelmingly supportive and congratulatory.

We hope the Australian enjoyed their stay.

**Paul Quinn
President**

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Musculoskeletal Dysfunction - Protocol for Clinical Assessment

CONTENTS

Introduction
Diagnostic Formulation
History of Musculoskeletal Problems
Physical Examination of the Cervical Spine
Physical Examination of the Temporomandibular Region
Physical Examination of Upper Limb Neurology
Physical Examination of the Shoulder Complex
Physical Examination of the Elbow and Forearm
Physical Examination of the Wrist
Physical Examination of the Hand
Physical Examination of the Thoracic Spine
Physical Examination of the Lumbar Spine
Physical Examination of the Pelvis
Physical Examination of Lower Limb Neurology
Physical Examination of the Hip
Physical Examination of the Knee
Physical Examination of the Ankle and Lower Leg
Physical Examination of the Foot

Clinical Assessment of Patients with Musculoskeletal Problems

INTRODUCTION

Musculoskeletal medicine is that branch of medical science concerned with those functions and disorders of the musculoskeletal system. This will include muscles, aponeuroses, ligaments, joints and bones, and associated parts of the nervous system.

A medical practitioner must be able to assess the patient who presents with a musculoskeletal problem, make an accurate diagnosis and formulate a treatment plan. For this purpose an adjustable couch accessible from all sides is desirable.

A thorough musculoskeletal clinical assessment will often obviate the need for radiological investigation thus saving the expense and risks which such procedures entail. Appropriate investigations may be considered to be ancillary to the taking of an appropriate history and performing an adequate physical examination.

Clinical assessment of the musculoskeletal system requires standardisation. It is therefore important and the major objective of this report that an agreed assessment of musculoskeletal dysfunction be established. This protocol puts forth a workable compromise of the various alternatives based on the anatomy and biomechanics of the musculoskeletal system. Such an assessment is designed to produce maximum diagnostic information.

In establishing the protocol the committee has taken great care to maintain the balance which will yield the most clinical information with the most efficient use of time.

It is suggested that the history and examination follow a rational plan and that the findings should be set out systematically to maximise the efficiency of the assessment process.

As the musculoskeletal physician becomes more proficient in his or her field, reference to check lists will become less necessary.

The examination follows a rational plan which departs from the orthopaedic sequence because the order **LOOK MOVE FEEL** is more appropriate for musculoskeletal practice but not prescriptive. The movements for all joints should be thought of in principle in relation to the three biomechanical axes with rotation about and translation along each axis allowing 12 directions of movement.

Using this basic principle all possible movements are considered but some will have a zero amplitude in the normal state. Rotation movements are expressed in degrees with translation movements expressed in linear measure. Comparison should be made in the case of paired joints.

When testing active ranges of motion the following should be noted:-

- a range of movement
- b rhythm of movement
- c pain or symptom reproduction
- d crepitus

The same should be noted when testing passive and accessory range of movement with the addition of

- e asymmetry
- f end-feel
- g the amount of give or creep with repeated movements.

Palpation of structures should be executed in a systematic way to include skin, articular structures, bones, musculotendinous regions, fascia, subcutaneous tissue, nerves, blood vessels and lymph nodes.

General Considerations

- Reproduce the patient's pain - if possible by palpation and/or moving the part
- Adopt the **LOOK MOVE FEEL** dictum
- Think biomechanically
- Screening tests can help delineate pathology in the associated part, eg. neck and shoulder
- Compare the function on the opposite side
- Check the vascular status when dealing with peripheral joint pathology
- Remember to assess movement in relation to the 3 axes and associated planes
Sagittal, Coronal, Horizontal - in rotation and translation

This protocol covers what should be assessed not how the assessment should be done or in what order.

DIAGNOSTIC FORMULATION

The making of a diagnosis involves the deliberate evaluation of symptoms and signs (and of the results of ancillary investigations), both during and after the assessment process.

This type of diagnostic formulation can be approached in four stages:

- Stage 1: **integrate** structural and functional references during assessment to determine which tests are relevant to the particular patient.
- Stage 2: **collate** the positive findings (and relevant negatives) at the end of the assessment to determine pattern(s) of function.
- Stage 3: **relate** the results of assessment to the anatomic structures which could be involved.
- Stage 4: **correlate** the postulated structural and functional involvement with known pathological entities.

HISTORY OF MUSCULOSKELETAL PROBLEMS

Patient should be seated comfortably and rapport established

IDENTIFICATION AND SOCIAL HISTORY:

NAME

ADDRESS

TELEPHONE

SEX

DATE OF BIRTH

REFERRING or LOCAL MEDICAL OFFICER

DOMESTIC CIRCUMSTANCES

LATERALITY

OCCUPATION

PAST EDUCATION

SPORTING INTERESTS

HOBBIES AND OTHER LEISURE ACTIVITIES

PRESENT SYMPTOMS

NATURE

- Pain(s)
- Altered sensations
- Stiffness
- Deformity
- Loss of function
- Other

DESCRIPTION

- Site
- Radiation
- Quality
- Periodicity
- Duration
- Mode of onset
- Aggravating factors: (postural, activities)
- Relieving factors: (postural, activities)
- Effects on lifestyle
- Treatment to date
- Effects of treatment

MUSCULOSKELETAL PAST HISTORY

DETAILS OF ACCIDENT/INCIDENTS

PREVIOUS SIMILAR SYMPTOMS

OTHER MUSCULOSKELETAL PROBLEMS

GENERAL MEDICAL HISTORY

- Intercurrent
- Past
- Rheumatological scrren - iritis, urethritis, psoriasis, bowels

FAMILY MEDICAL HISTORY

- Father
- Mother
- Siblings
- Other

MEDICATION

Present

- Prescribed
- Proprietary
- Tobacco
- Alcohol
- Other

Past

- Prescribed
- Proprietary
- Tobacco
- Alcohol
- Other

ALLERGIES

RISK FACTORS IN ACTIVITIES OF DAILY LIVING

- Sporting interests
- Hobbies, leisure activities
- Daily living
- Bedding

RISK FACTORS AT WORK

- Job description
- Work place environment
- Compatibility with work place

PHYSICAL EXAMINATION OF THE CERVICAL SPINE

Begin with the patient standing in a comfortable position

INSPECTION:

APPEARANCE

build (description, body mass index $\frac{Wt \text{ in Kg}}{Ht \text{ in M}^2}$)

shape
contours
colour
surface - creases, scars, trophic changes
symmetry
deformities

STATIC POSTURE - viewed from front, back and side

position - compare anatomic stance
alignments - shoulder & pelvic heights
spinal curvatures - scoliosis, kyphosis, lordosis
contours - shoulder profiles, swelling, muscle contours

DYNAMIC POSTURE

walking
turning

Patient sits

MOVEMENTS:

THE CERVICAL SPINE AS A WHOLE

Physiological

upper cervical - nutation
- rotation

Lower Cervical

extension/flexion
left sidebending/right sidebending
left rotation/right rotation

Active Movements - in degrees or pain reduction

by observation: if range full
by observation: if ranges restricted
by goniometry: if full or restricted

Passive Movements - in degrees or pain reduction

by observation: if range full
by observation: if ranges restricted
by goniometry: if full or restricted

Pain Reproduction

active ranges - in degrees or pain reduction
active resisted - yes/no
passive ranges - in degrees

Rhythm of Movements - usual/unusual

upper cervical versus lower cervical participation

Crepitus - presence/absence

End-Feel - usual/unusual

Patient lies prone

PALPATION:

INTERVERTEBRAL JOINTS

Physiological Movements

extension/flexion
left sidebending/right sidebending
left rotation/right rotation

Passive Ranges - as relative amount
by manual assessment

Pain Reproduction - yes/no

Crepitus - presence/absence

End-Feel - usual/unusual

Accessory Movements

central postero-anterior
left transverse postero-anterior
right transverse postero-anterior
left lateral glide
right lateral glide

Passive Ranges - as relative amount
by manual assessment

Pain Reproduction - yes/no

Posterior Quadrant Compression

- symptom reproduction, other pain

Quadrant Provocation Tests

- negative/positive

These tests may be performed earlier in the examination sequence if there is any suggestion (either from the history or from other tests) of any vertebral artery problem.

Slump Test

- symptom reproduction, other pain, pain reinforcement
by neck flexion, pain reinforcement by leg extension

Brachial Plexus Tension Test

SKIN - temperature

BONE & BONEY LANDMARKS

spinous processes of C_2 & C_7
hyoid & Z-joints
thyroid & cricoid cartilages
anterior pillars

MUSCLES & TENDONS

sternomastoid
splenius capitis
splenius cervicis
longus capitis
longus cervicis
scalenes
semispinalis capitis
deep post-vertebral muscles
- symptom reproduction, tightness, tenderness, trigger points, weakness, wasting

OTHER

Articular - Pillar & Discs

Neural Tissues

theca
nerve roots
spinal cord

Sensory Modalities (see Neurology Section)

- intact, altered

Vertebral Arteries

Lymph Nodes

PHYSICAL EXAMINATION OF THE TEMPOROMANDIBULAR REGION

Patient may sit throughout this examination

INSPECTION: APPEARANCE

shape
contours
colour
surface - creases, scars, trophic changes
symmetry
deformities

STATIC POSTURE

position (c.f. anatomic)
contours - asymmetry, swelling, muscles, fractures
dental occlusion

ORAL CAVITY

dental health
gums
salivary glands
bite
tooth wear

MOVEMENTS: TEMPOROMANDIBULAR JOINT

Physiological

depression
elevation
protraction
retraction
lateral movement of chin
mouth opens to accommodate 3 knuckles

Accessory Movements

antero-posterior glide
lateral and medial glide
caudad distraction
cephalad compression
- full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, crepitus, unusual end-feel

SKIN - temperature

PALPATION: JOINTS - heat, swelling, pain, crepitus

MUSCLES

sternomastoid
trapezius
temporalis
masseter
medial pterygoid
lateral pterygoid
digastric
- symptom reproduction, pain on contraction, pain on stretching, tightness, tenderness, trigger points, weakness, wasting, impaired integrity

LIGAMENTS

capsular
lateral
- symptom reproduction, pain on stretching, tightness, tenderness, wasting, impaired integrity

BONES

temporal
mandible
- symptom reproduction, tenderness, deformity, positional variation, length variation, impaired integrity

ADENEXAE

- ears

UPPER LIMB NEUROLOGY - compare both sides

INSPECTION

- wasting - record at 15cm above and 10cm below medial epicondyle
fasciculation
abnormal movements
trophic changes in skin ie colour, temperature, sweaty, hair loss

TONE

wrist and elbow movement
increased or decreased
clasp-knife, cogwheel

POWER

- record grades
0 - No Movement
1 - flicker
2 - full range gravity eliminated
3 - full range against gravity
4 - full range against some resistance
5 - Normal

SEGMENTAL SCREEN

Shoulder - shrug C₃, C₄, abduct shoulder C₅, adduct C₆, ₇, ₈
Elbow - flexion C₅, C₆, extension C₇, ₈, abduction C₈, T₁
Wrist - flexion & extension C₆, ₇
Fingers - flexion & extensions C₇, ₈ abduction C₈, T₁

REFLEXES

Biceps C₅
Brachioradialis C₆
Triceps C₇
Finger jerk C₈

CO-ORDINATION

Finger - nose - look for intention tremor
- dysmetria, dysdiadochokinesis

SENSATION

Joint position, vibration,
two point discrimination - Dorsal column

Pin prick, temperature - Spinothalamic
Dermatome distribution

PERIPHERAL NERVES

Sensation - Axillary - insertion of deltoid
- Radial - dorsum first web space
- Ulnar - tip of little finger
- Median - tip of index finger

MUSCLE SCREEN

Shrug shoulder - dorsal scapular nerve
abduct shoulder axillary & suprascapular n.
flex elbow musculocutaneous n.
extend finger radial n.
abduct finger ulnar n.
abduct thumb median n.

PHYSICAL EXAMINATION OF THE SHOULDER COMPLEX

Begin with the patient standing in a comfortable position

INSPECTION:

APPEARANCE

shape
contours
colour
surface
symmetry
deformity

STATIC POSTURE - viewed front, back and side

position - c.f. anatomic
alignments - scapulae, clavicles
symmetry - scapular, clavicular
contours - muscle and contours, shoulder shape

SCREENING TEST

cervical movements to reproduce symptoms
shoulder - both arms together to reproduce symptoms
flexion, extension, abduction, adduction

MOVEMENTS:

Standing or Sitting

SCAPULOTHORACIC

Physiological

elevation/depression
protraction/retraction
upward rotation/downward rotation

Active Ranges

- full restricted, asymmetrical by observation

Passive Ranges

- as relative amount by manual assessment

PALPATION:

Pain Reproduction

- active ranges - amount
- active restricted - yes/no
- passive ranges - amount

Rhythm - quality, symmetry

End-Feel - usual/unusual

SKIN - temp. changes

JOINTS - pain, effusion, temp, synovium

BONEY LANDMARKS

- spinous processes
- scapula border & spine
- acromion
- coracoid process
- greater & lesser tuberosity
- bicipital groove

MUSCLES

- deltoid
- supraspinatus
- infraspinatus
- teres minor
- teres major
- subscapularis
- latissimus dorsi
- pectoralis major
- coracobrachialis
- biceps brachii - long & short
- triceps brachii
- symptom reproduction, pain on contraction, pain on stretching, tightness, tenderness, weakness, wasting, impaired integrity

TENDONS and ENTHESES - tenderness, trigger points and impaired integrity

LIGAMENTS

- acromio-clavicular
- coraco-clavicular
- coraco-acromial
- coraco-humeral
- gleno-humeral (3)
- transverse humeral
- symptom reproduction, pain on stretch, tightness, tenderness, laxity, impaired integrity

BONES

- humerous
- scapula
- clavicles
- symptom reproduction, tenderness, deformity, positional variation, length variation, impaired integrity

ADNEXAE OF JOINT

- subacromial bursa
- subcoracoid bursa
- biceps bursa
- symptom reproduction, tenderness, swelling

STERNOCLAVICULAR

Physiological

hinge joint - arm in full abduction and external rotation

Active Ranges

- relative amount by observation/manual assessment
- by palpation - also for pain

Accessory Range

- glides - antero-posterior, cephalic & caudal

Pain Reproduction - yes/no

Rhythm - quality, symmetry

Crepitus - presence/absence

End-Feel - usual/unusual

ACROMIO-CLAVICULAR JOINT

Physiological

complex rotation

Accessory

- anterior & posterior glide
- cephalic & caudal

GLENO-HUMERAL JOINT

Physiological

extension/flexion
abduction/adduction
horizontal extension/flexion
external rotation/internal rotation
external rotation/internal rotation at 90° of abduction

Active & Passive Ranges

- in degrees & pain reproduction
- abduction - with arm in 3 positions ie external, neutral & medial rotation

Resisted Ranges

- abduction with arm in 30° & 90° abduction
- external rotation - arm at side & 90° abduction, elbow 90°
- internal rotation - arm at side & 90° abduction, elbow 90°
- elbow flexion at 30° & 90°
- forearm - supination
- shoulder flexion and extension

Apprehension Test - Anterior Instability*Lying supine***Passive**

- external & internal rotation with 90° abducted & elbow at 90°
- abduction further in external rotation

Accessory

- antero-posterior, postero-anterior glide
- caudal cephalic glide
- lateral distraction compression glide

*Side lying***Scapula**

- passive movements

PHYSICAL EXAMINATION OF THE ELBOW AND FOREARM*Begin with patient standing in a comfortable position***INSPECTION:****APPEARANCE**

- shape
- contours
- colour
- surface - creases, scars, trophic changes
- symmetry
- deformities - amputation

STATIC POSTURE

- position - anatomic; note flexion deformity in arthritis
- carrying angle valgus, varus
- contours - asymmetry, swelling, nodules, muscles

MOVEMENTS:**ELBOW JOINT** considered as a whole**Physiological**

- elbows flexed
- extension/flexion
- supination/pronation

Active Ranges - in degrees or pain reproduction
by observation
by goniometry

Passive Ranges - in degrees or pain reproduction
by observation
by goniometry

Resisted - pain reproduction**Rhythm** - usual/unusual**Crepitus** - presence/absence**End-Feel** - usual/unusual*Patient now lies supine on couch***Accessory Movements**

- valgus-varus stress for collateral ligaments

Humero-Ulnar

- lateral glides
- caudad distraction

Humero-Radial

- antero-posterior glide
- caudal cephalic glides

Proximal & Distal Radio-Ulnar

- antero-posterior glide
- distraction & compression

*Patient remains supine with elbow flexed 70°***PALPATION:****SKIN** - temperature**JOINTS**

- effusion, heat - elbow radio-capitulum, proximal & distal radio-ulnar

MUSCLES

- triceps brachii
- anconeus
- biceps brachii
- brachialis
- brachioradialis
- supinator
- pronator teres
- pronator quadratus

pronator quadratus
 wrist extensors
 wrist flexors
 - symptom reproduction, pain on contraction, pain on stretching,
 tightness, tenderness, trigger points, weakness, wasting).

TENDONS & ENTHESES

lateral epicondylar
 medial epicondylar - tenderness, impaired integrity

LIGAMENTS

radial collateral - medial & lateral in full extension
 annular radial
 ulnar collateral
 - symptom reproduction, pain on stretch, tightness, tenderness, laxity,
 impaired integrity

BONES

humerus
 radius
 ulna
 - symptom reproduction, tenderness, deformity, positional variation,
 length variation, impaired integrity

ADNEXAE OF JOINT

olecranon bursa
 superior triceps bursa
 bicipital bursae - symptom reproduction, tenderness, swelling

OTHER

nerves
 vessels
 nodes

PHYSICAL EXAMINATION OF THE WRIST

Patient may sit with elbow flexed for this examination

INSPECTION:

APPEARANCE

shape
 contours
 colour
 surface
 symmetry
 deformities - amputations

STATIC POSTURE

position (c.f. anatomic)
 contours - note asymmetry, swelling, muscles, bones

MOVEMENTS:

WRIST JOINT considered as a whole with elbow flexed & extended

Physiological Movements mainly radio-carpal joint
 extension/flexion
 radial deviation/ulnar deviation

Active Ranges - in degrees and pain reproduction
 by observation
 by goniometry

Resisted - pain reproduction

Rhythm - usual/unusual

Crepitus - presence/absence

End-Feel - usual/unusual

Accessory Movement of Carpus

fix proximal row & move distal
 fix capitate, move trapezoid
 fix capitate, move lunate
 fix capitate, move hamate
 fix scaphoid, move trapezii
 fix radius, move scaphoid
 fix radius, move lunate
 fix ulna, move triquetrum
 fix triquetrum, move hamate
 fix triquetrum, move pisiform
 - full and free, usual end-feel, hypomobility, hypermobility, pain
 reproduction, crepitus, unusual end-feel

PALPATION:

SKIN - temperature changes

JOINTS - effusion, synovial thickening

MUSCLES

extensor carpi radialis longus
 extensor carpi radialis brevis
 extensor digitorum
 extensor carpi ulnaris
 flexor carpi radialis
 palmaris longus
 flexor pollicis longus
 flexor digitorum profundus
 flexor carpi ulnaris
 extensor pollicis
 extensor pollicis brevis
 extensor pollicis longus
 - symptom reproduction, pain on contraction, pain on stretching,
 tenderness, weakness, wasting).

TENDONS & ENTHESES

as for muscles

LIGAMENTS

radial collateral
 dorsal radiocarpal
 palmar radiocarpal
 ulnar collateral
 - symptom reproduction, pain on stretching, tightness, tenderness,
 trigger points, laxity, impaired integrity

FASCIAE

flexor retinaculum
extensor retinaculum (record as for ligaments)

BONES

radius
ulna
scaphoid
lunate
triquetrum
pisiform
trapezium
trapezoid
capitate
hamate
- symptom reproduction, tenderness, deformity, positional variation,
length variation, impaired integrity

ADNEXAE OF WRIST

radial bursa
ulnar bursa
tendon sheaths and ganglions
- symptom reproduction, tenderness, swelling

OTHER

nerves
vessels
nodes

PHYSICAL EXAMINATION OF THE HAND

Patient may sit throughout this examination

INSPECTION:

APPEARANCE

shape
contours
colour
surface - creases, scars, calluses
symmetry
deformity - amputations
nails - pitting, ridging, clubbing, onycholysis

STATIC POSTURE

position
contours - asymmetry, swelling, muscles, bones

MOVEMENTS:

THUMB JOINTS

Physiological

carpometacarpal abduction/adduction
carpometacarpal extension/flexion
carpometacarpal opposition - rotation about long axis
metacarpophalangeal extension/flexion
interphalangeal extension/flexion

Active Ranges - in degrees or pain reproduction
by observation
by goniometry

Passive Ranges - in degrees or pain reproduction
by observation
by goniometry

Resisted - pain reproduction

Rhythm of Movements - usual/unusual

Crepitus - presence/absence

End-Feel - usual/unusual

Accessory Movements at each point

distraction - compression
sagittal glides
frontal glides
- record full and free, usual end-feel, hypomobility, hypermobility,
pain reproduction, crepitus, unusual end-feel

FINGER JOINTS

Physiological Movements

carpo-metacarpal extension/flexion
carpo-metacarpal abduction/adduction
metacarpophalangeal extension/flexion
proximal interphalangeal extension/flexion
distal interphalangeal extension/flexion
- active ranges, passive ranges, pain reproduction, rhythm of
movements, crepitus, end-feel as for thumb

Accessory Movements at each joint

distraction
sagittal glides
frontal glides
- full and free, usual end-feel, hypomobility, hypermobility, pain
reproduction, crepitus, unusual end-feel

PALPATION:

SKIN - temperature

JOINTS - heat, swelling, synovial thickening, bony outgrowths

INTRINSIC MUSCLES

abductor pollicis brevis
opponens pollicis
flexor pollicis brevis
adductor pollicis
lumbricals 1,2
lumbricals 3,4
palmar interossei (3)
dorsal interossei (4)
palmaris brevis
flexor digiti minimi brevis
opponens digiti minimi
abductor digiti minimi
- symptom reproduction, pain on contraction, pain on stretching,
tightness, tenderness, trigger points, weakness, wasting

TENDONS OF EXTRINSIC MUSCLES

extensor pollicis brevis
extensor pollicis longus
flexor pollicis longus
abductor pollicis longus
extensor digitorum
extensor digiti minimi
flexor digitorum superficialis
flexor digitorum profundus
- tenderness, impaired integrity

LIGAMENTS

carpometacarpal
transverse metacarpal
MP collateral
MP palmar
PIP collateral
PIP palmar
DIP collateral
DIP palmar
- symptom reproduction, pain on stretch, tightness, tenderness, laxity,
impaired integrity.

FASCIAE

palmar aponeurosis
deep palmar fascia
- as for tendons

BONES

metacarpals (5)
proximal phalanges (5)
middle phalanges (4)
distal phalanges (5)
- symptom reproduction, tenderness, deformity, positional variation,
length variation, impaired integrity

SYNOVIAL SHEATHS

palmar synovial sheaths
digital synovial sheaths
dorsal synovial sheaths
- symptom reproduction, tenderness, swelling

PHYSICAL EXAMINATION OF THE THORACIC SPINE

Begin with the patient standing in a comfortable position and stripped

INSPECTION:

APPEARANCE

build description, body mass index $\frac{Wt \text{ in Kg}}{Ht \text{ in M}^2}$

symmetry - deformity
creases and scars

STATIC POSTURE - viewed from front back & side
position (c.f. anatomic)
alignments - shoulder heights
spinal curvatures, scoliosis, kyphosis
contours - shoulder profiles, swelling, muscle contours

DYNAMIC POSTURE

gait
breathing pattern - thoracic, abdominal, accessory

Patient sits

MOVEMENTS:

THE THORACIC SPINE AS A WHOLE

Physiological

extension/flexion
left sidebending/right sidebending
left rotation/right rotation

Active Ranges - relative amount or pain reproduction
by observation

Passive Ranges - relative amount or pain reproduction
by observation

Rhythm of Movements - regular cadence, restricted segments

Crepitus - presence/absence

End-Feel - usual/unusual

Patient lies prone

Accessory Movements - at each segment

central postero-anterior
left transverse postero-anterior
right transverse postero-anterior
left lateral glide
right lateral glide

- P/A thrusts will detect the springiness of the thoracic cage



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COSTOVERTEBRAL & COSTOTRANSVERSE JOINTS

Physiological

rib movements

Passive Ranges - as relative amount or pain reproduction
by manual assessment

Crepitus - presence/absence

End-Feel - usual/unusual

Accessory Movements

postero-anterior

Slump Test

- symptom reproduction, other pain, pain reinforcement by
neck flexion, pain reinforcement by hip flexion and knee
extension

Posterior Quadrant Compression Tests

- symptom reproduction, other pain

PALPATION:

SKIN - temperature, tender, skin rolling, skin drag

JOINTS

zygoapophyseal

costotransverse

costosternal

manubriosternal

- symptom reproduction, springiness, tightness, tenderness,
hypomobility, hypermobility

BONES & BONEY LANDMARKS

manubrium

sternum

xiphoid

ribs - maybe cervical or lumbar

scapula

spinal processes

costal cartilaginous marginds

- as for joints

MUSCLES

pectorals

abdominals

rhomboids

lower trapezius

longissimus

iliocostalis

spinalis

multifidus

semispinalis

intercostals

- symptom reproduction, tightness, tenderness, trigger points, weakness,
wasting

NEURAL TISSUES

theca

nerve roots

spinal cord

Sensory Modalities T1-T12

- intact, altered

OTHER

nerves

vessels

nodes

PHYSICAL EXAMINATION OF THE LUMBAR SPINE

Begin with the patient standing in a comfortable position

INSPECTION:

APPEARANCE

build description, body mass index $\frac{\text{Wt in Kg}}{\text{Ht in M}^2}$

creases, scars

STATIC POSTURE

position (c.f. anatomic)

alignments - pelvic shift, pelvic tilts, iliac crests, ASIS, PSIS

spinal curvatures - scoliosis, kyphosis, lordosis

contours - waist "windows", hip contours, swelling, muscle

contours, weight bearing - foot impression, shoe wear

Trendelenburg

Patient walks, then stands again

DYNAMIC POSTURE

gait

rhythm of movements

alignment

walks on toes and heels

Patient sits

MOVEMENTS: THE LUMBAR SPINE AS A WHOLE

Physiological

extension/flexion
left sidebending/ right sidebending
left rotation/ right rotation

Active Ranges

by observation or pain reproduction

Passive Ranges

by observation or pain reproduction

Pain Reproduction

Rhythm - usual/unusual

Crepitus - presence/absence

End-Feel - usual/unusual

FUNCTIONAL TESTS

slump
straight leg raise
femoral nerve stretch
- range of movement or pain reproduction

Patient continues sitting

PALPATION: SKIN - temperature

JOINTS - zygapophyseal, hips

MUSCLES

abdominals - internal & external obliques,
rectus abdominus
lumbar erector spinae -iliocostalis, longissimus
multifidus
quadratus lumborum
iliacus
psoas
- symptom reproduction, tightness, tenderness, trigger points, weakness,
wasting

BONES

iliac crests PSIS - ASIS
vertebrae L₁ - L₅
- symptom reproduction, tenderness, deformity, positional variation,
impaired integrity

TENDONS & ENTHESES - thoracolumbar fascia at PSIS

LIGAMENTS - interspinous
- iliolumbar

ARTERY - femoral, popliteal

PHYSICAL EXAMINATION OF THE PELVIS

Begin with the patient standing in a comfortable position

INSPECTION: APPEARANCE

build - description, body mass index
gross deformities
creases - gluteal folds, dimples

STATIC POSTURE viewed from front, back & side
position (c.f. anatomic)
alignments - pelvic shift, pelvic tilts - iliac crests, ASIS, PSIS
spinal curvatures - scoliosis, kyphosis, lordosis
contours - bony contours, muscle contours
weight-bearing - foot impression, shoe wear

Patient stands on each leg in turn, then walks, then stands on both legs again

DYNAMIC POSTURE

one leg standing
gait
rhythm of movements
Trendelenburg

MOVEMENTS: SACRO-ILIAC JOINTS

Physiological - on each side
extension
nutations (positive and negative)
rotation (positive and negative)

Pain Reproduction

P/A movement - springiness

Flexion, abduction & external rotation of femur
Flexion, adduction & posterior thrust of femur
Patient lies supine

Crepitus - presence/absence

End-Feel - usual/unusual

Accessory Movements - for pain reproduction

abduction
adduction
postero-anterior glides
rostro-caudal glides

Patient turns over to lie supine

PUBIC SYMPHYSIS

Accessory Movements

rostro-caudal glides
(record full and free, usual end-feel, hypomobility, hypermobility,
pain reproduction, crepitus, unusual end-feel)

Patient lies prone again

SACRO-COCCYGEAL JOINT

Physiological

extension/flexion

Pain Reproduction- on PR palpation

Crepitus - presence/absence

End-Feel - usual/unusual

Accessory

lateral glides
rostro-caudal glides
- full and free, usual end-feel, hypomobility, hypermobility, pain
reproduction, crepitus, unusual end-feel)

PALPATION:

SKIN - trophic changes

MUSCLES

erector spinae
glutei
piriformis
sphincter ani externus
ischio-coccygeus
tensor fascia lata

Patient turns to lie supine

iliopsoas
- symptom reproduction, tightness, tenderness, trigger points, weakness,
wasting

BONES & BONEY LANDMARKS

sacrum - spines, sacral hiatus
coccyx
innominates - iliac crests, PSIS, ASIS
ischial tuberosities
pubic crest, ramus, tubercle
pectineal line - rectal examination
sciatic notch - great, lesser

JOINTS

sacroiliac
symphysis pubis

Patient lies prone again

LIGAMENTS

dorsal sacro-iliac
sacrospinatus } - rectal examination
sacrotuberous }
sacrococcygeal
- symptom reproduction, pain on stretch, tightness, tenderness, laxity,
impaired integrity

LOWER LIMB NEUROLOGY

INSPECTION

wasting - record 20cm and 10cm above & 15cm below the medial space of knee
fasciculation
abnormal movements
trophic changes - colour, temperature, hair loss, sweating etc.

TONE

knee & ankle movement - increased & decreased

POWER:

grades as for upper limb

SEGMENTAL SCREEN

flex hip	L1, L2, L3, L4
extend knee	L2, L3, L4
adduct hip	L3, L4
dorsiflex ankle	L4, L5
extend toes:	L5, S1
evert ankle	S1, S2
plantarflex ankle	S1, S2

REFLEXES

knee	L2, L3, L4
medial hamstring	L5, S1
ankle	L5, S1,

CO-ORDINATION

toe - finger - dysmetria
rapid foot tapping - dysdiadochokinesis

SENSATION

joint position, vibration,
two point discrimination - dorsal column

pin prick, temperature - spinothalamic
dermatomal distribution

PERIPHERAL NERVE

Sensation	lateral cutaneous of thigh - anterolateral thigh	
	femoral & saphenous cutaneous - medial leg	
	deep peroneal - first web space	
	common peroneal - lateral border of foot	
	tibial - sole of foot	
Motor	flex hip	lumbar plexus
	extend knee	femoral n.
	adduct hip	obturator n.
	dorsiflex ankle	deep peroneal n.
	plantar flex ankle	tibial n.
	extend toes	deep peroneal n.
	evert foot	superficial peroneal n.

PHYSICAL EXAMINATION OF THE HIP

Begin with the patient standing in a comfortable position

INSPECTION:

APPEARANCE

shape
contours
colour
surface (note creases, scars, trophic changes)
symmetry
deformity - amputation

STATIC POSTURE

hip position (c.f. anatomic: note flexion deformity, etc.)
leg rotation
foot position
pelvic tilting (A-P) and transverse obliquity
leg length discrepancy
spinal curvatures (A-P and lateral)

Patient walks, then stands again

DYNAMIC POSTURE

gait note limp, antalgic, waddling, swinging, lordotic
pattern of movement
Trendelenburg test
weight bearing one leg v other

Patient lies down for accurate assessment of movements; extension is assessed with patient prone, other movements with patient supine; pelvic movement should be controlled during these tests

MOVEMENTS:

Physiological

extension/flexion
abduction/adduction
external rotation/ internal rotation

Active Ranges in degrees or pain reproduction
by observation
by goniometry

Passive Ranges in degrees or pain reproduction
by observation
by goniometry

Pain Reproduction

active ranges
active resisted - record yes/no

resisted extension pain: consider hamstrings
resisted flexion pain: consider iliopsoas
resisted abduction pain: consider gluteus medius
resisted adduction pain: consider adductors
resisted external rotation pain: consider piriformis
passive ranges - in degrees
Faber test for combined movements

Crepitus - presence/absence

End-Feel - usual/unusual

Patient remains supine with hip flexed 30°, abducted 30° (loose pack position)

Accessory

- full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, crepitus, unusual end-feel
lateral glide
medial compression
caudad distraction
cephalad compression
antero-posterior glide
postero-anterior glide

PALPATION:

SKIN

- temperature

BONES

- symptom reproduction, tenderness, deformity, positional variation, length variation, impaired integrity
innominate - PSIS, ASIS
femur - greater trochanter
sacrum

MUSCLES - symptomatic reproduction, pain on contraction, pain on stretch, tightness, tenderness, trigger points, weakness, wasting, enthesopathy

prone gluteus maximus
gluteus medius
gluteus minimus
piriformis
biceps femoris
semitendinosus
semimembranosus
tensor fasciae latae

supine iliacus
psoas
adductor magnus
adductor longus
adductor brevis
gracilis
pectineus

TENDONS & ENTHESES

as per muscles

ADNEXAE OF HIP

- symptom reproduction, tenderness, swelling, other
trochanteric bursa
iliopsoas bursa
other bursa

FASCIA ilio-tibial band

OTHER STRUCTURES - symptom reproduction, tenderness

arteries
veins
nerves
lymph nodes
femoral triangle

PHYSICAL EXAMINATION OF THE KNEE

Begin with patient standing in a comfortable position

INSPECTION: APPEARANCE

shape- valgus, varus, recurvatum, Q angle etc.
contours
colour
surface - creases, scars, trophic changes
symmetry

STATIC POSTURE

knee position (c.f. anatomic; note flexion deformity etc)
leg rotation
foot position

Patient walks, perhaps runs, then stands again

DYNAMIC POSTURE

gait - note limp, antalgic, waddling, swinging, lordotic

Patient stands on one leg, bends knee, jumps from one leg to another, duck walks, squats, kneels

Pattern of movements - note patellar tracking etc.

Patient lies down for accurate assessment of movements

MOVEMENTS: TIBIOFEMORAL JOINT

Physiological

extension/flexion
external rotation/internal rotation

Active Ranges in degrees or pain reproduction
by observation
by goniometry

Passive Ranges in degrees or pain reproduction
by observation
by goniometry

Pain Reproduction

active ranges in degrees
active restricted - yes/no
passive ranges - in degrees

Crepitus - presence/absence

End-Feel - usual/unusual

PALPATION:

SKIN -temperature

BONES - symptom reproduction, tenderness, deformity, positional variation, length variation, impaired integrity
femur
tibia
fibula
patella

LIGAMENTS - symptom reproduction, pain on stretch, tightness, tenderness, laxity, impaired integrity

medial collateral
lateral collateral
anterior cruciate (Lachman, pivot shift, drawer tests)
posterior cruciate

FASCIAE - as for ligaments

fascia lata
popliteus fascia
iliotibial tract
retinaculæ of patella

MUSCLES - symptom reproduction, pain on contraction, pain on stretch, tightness, tenderness, trigger points, weakness, wasting, enthesopathy, impaired integrity.
rectus femoris
vastus lateralis
vastus intermedius
vastus medialis
biceps femoris
semitendinosus
semimembranosus
popliteus
gastrocnemius

Patient remains supine with knee flexed 30° (loose pack position); flexion angle should be varied to suit particular tests

Accessory - full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, crepitus, unusual end-feel
abduction
adduction
antero-posterior glide
postero-anterior glide
lateral glide
medial glide
caudad distraction
cephalad compression
lateral rotation
medial rotation

PATELLOFEMORAL JOINT

Accessory - full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, crepitus, unusual end-feel

lateral glide
medial glide
caudad glide
cephalad glide
antero-posterior compression

Apprehension Test - positive/negative for lateral patellar dislocation

Patient remains lying for remainder of examination, turning prone or supine as required

PALPATION: **BONES** - symptom reproduction, pain on contraction, pain on stretch, tightness, tenderness, trigger points, weakness, wasting, enthesopathy, impaired integrity

rectus femoris
vastus lateralis
vastus intermedius
vastus medialis
biceps femoris
semitendinosus
semimembranosus
popliteus
gastrocnemius

TENDONS - as for ligaments
quadriceps
patellar
bicipital
semimembranosus
gastrocnemius
iliotibial band
popliteal

INTRA-ARTICULAR STRUCTURES

- symptom reproduction, tenderness, pain on compression, McMurray's sign
medial meniscus
lateral meniscus

ADNEXAE OF KNEE

- symptom reproduction, tenderness, swelling, other
suprapatellar bursa
prepatellar bursa
subcutaneous infrapatellar bursa
deep infrapatellar bursa
lateral bursae (3)
medial bursae (3)
posterior bursae (2)
popliteal fossa
retropatellar space
joint capsule

OTHER STRUCTURES

- symptom reproduction, tenderness, swelling, other
arteries
veins
nerves
lymph nodes
popliteal fossa

PHYSICAL EXAMINATION OF THE ANKLE AND LOWER LEG

Begin with the patient standing in a comfortable position

INSPECTION:

APPEARANCE

shape
contours
colour
surface - creases, scars, trophic changes
symmetry

STATIC POSTURE

position (c.f. anatomic: valgus, varus)
foot position
leg rotation

Patient walks, then stands again

DYNAMIC POSTURE

gait - limp, antalgic, waddling, swinging, lordotic
pattern of movement through gait cycle

Patient stands on one leg, then sits with ankle not bearing weight

patterns of movement

Patient lies supine with ipsilateral knee flexed

MOVEMENTS:

TALOCRURAL JOINT

Physiological

dorsiflexion/plantar flexion

Active Ranges in degrees or pain reproduction

by observation

by goniometry

Passive Ranges in degrees or pain reproduction

by observation

by goniometry

Pain Reproduction

active ranges - in degrees

active resisted - yes/no

resisted dorsiflexion pain: consider tibialis anterior

resisted plantar flexion pain: consider gastrocnemius, soleus

passive ranges - in degrees

Creptus - presence/absence

End-Feel - usual/unusual

Accessory

- full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, creptus, unusual end-feel
postero-anterior glide
antero-posterior glide
distraction
compression
lateral rotation
medial rotation

DISTAL TIBIOFIBULAR JOINT

Accessory

- full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, creptus, unusual end-feel
antero-posterior glide
postero-anterior glide
caudad glide (calcaneal inversion)
cephalad glide (calcaneal eversion)
separation (ankle dorsiflexion)
compression

PROXIMAL TIBIOFIBULAR JOINT

Accessory

- full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, creptus, unusual end-feel
antero-posterior glide
postero-anterior glide
caudad glide
cephalad glide
compression

PALPATION:

SKIN

- temperature

BONES

- symptom reproduction, tenderness, deformity, positional variation, length variation, impaired integrity
tibia
fibula
talus
calcaneus
cuboid
navicular

LIGAMENTS

- symptom reproduction, pain on stretching, tightness, tenderness, laxity, impaired integrity
anterior tibiofibular
anterior talofibular
calcaneofibular
posterior talofibular
deltoid
anterior tibiotalar
posterior tibiotalar

RETINACULA - record as for ligaments

superior extensor retinaculum
inferior extensor retinaculum
superior peroneal retinaculum
inferior peroneal retinaculum
flexor retinaculum

MUSCLES - symptom reproduction, pain on contraction, pain on stretching, tightness, tenderness, trigger points, weakness, wasting, enthesopathy, impaired integrity

tibialis anterior
gastrocnemius
soleus
tibialis posterior
peroneus longus
peroneus brevis
peroneus tertius

TENDONS & ENTHESES

- as for ligaments

tibialis anterior
extensor hallucis longus
extensor digitorum longus
peroneus tertius
peroneus brevis
peroneus longus
tendo achilles
flexor hallucis longus
flexor digitorum longus
tibialis posterior

SYNOVIAL STRUCTURES

- symptom reproduction, tenderness, swelling
tendon sheaths
talocrural joint
subtalar joint

OTHER STRUCTURES

- symptom reproduction, tenderness, swelling, other
arteries
veins
nerves
lymph nodes

PHYSICAL EXAMINATION OF THE FOOT

Begin with the patient standing in a comfortable position

INSPECTION: APPEARANCE

shape (note hallux length)
contours
colour
surface - creases, scars, trophic changes
symmetry

STATIC POSTURE

foot position (c.f. anatomic: note arches, toe deviation, etc.)
ankle position
leg rotation

Patient walks, then stands again

DYNAMIC POSTURE

gait - limp, antalgic, waddling, swinging, lordotic
pattern of movement through gait cycle
shoe wear pattern

Patient lies supine with feet over end of couch

MOVEMENTS: SUBTALAR JOINT

- full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, crepitus, unusual end-feel
eversion
inversion
rotation

TARSAL ACCESSORY

- ten tests and record full and free, usual end-feel, hypomobility, hypermobility, pain reproduction, crepitus, unusual end-feel

fix talus:	move crus
fix talus:	move calcaneus
fix calcaneus:	move cuboid
fix talus:	move navicular
fix navicular & cuneiforms 3:	move cuboid
fix navicular:	move cuneiforms 1,2,3
fix cuboid:	move metatarsals 4 & 5
fix cuneiforms 2 & 3:	move metatarsal 3
fix cuneiforms 2 & 3:	move metatarsal 2
fix cuneiform 1:	move metatarsal 1

FOREFOOT

Physiological

metatarso-phalangeal extension/flexion
metatarso-phalangeal abduction/adduction
proximal interphalangeal extension/flexion
distal interphalangeal extension/flexion

Active Ranges - in degrees or pain reproduction
by observation
by goniometry

Passive Ranges - in degrees or pain reproduction
by observation
by goniometry

Pain Reproduction
active ranges - in degrees
active resisted - yes/no
passive ranges - record in degrees

Crepitus presence/absence

End-Feel usual/unusual

Accessory - full and free, usual end-feel, hypomobility, hypermobility,
pain reproduction, crepitus, unusual end-feel

distraction
sagittal glides
frontal glides

PALPATION:

SKIN - temperature

BONES - symptom reproduction, tenderness, deformity, positional variation,
length variation, impaired integrity

talus
calcaneus
navicular
cuboid
cuneiforms (3)
metatarsals (5)
phalanges

LIGAMENTS - symptom reproduction, pain on stretching, tightness, tenderness,
laxity, impaired integrity

calcaneonavicular
deep transverse metatarsal ligaments

CAPSULES AND JOINTS
as for ligaments

MUSCLES - symptom reproduction, pain on contraction, pain on stretching,
tightness, tenderness, trigger points, weakness, wasting, enthesopathy,
impaired integrity

extensor hallucis longus
extensor digitorum longus
extensor hallucis brevis
extensor digitorum brevis
abductor hallucis
dorsal interossei (4)
abductor digiti minimi
flexor digitorum brevis
flexor digitorum longus
quadratus plantae
flexor hallucis longus
lumbrical 1
lumbricals 2, 3, 4
flexor hallucis brevis
adductor hallucis
flexor digiti minimi brevis
plantar interossei

TENDONS & ENTHESES - as for muscles
medial calcaneal tubercle
lateral calcaneal tubercle

FASCIA - symptom reproduction, pain on stretch, tightness, tenderness, laxity,
impaired integrity

plantar fascia

OTHER STRUCTURES - symptom reproduction, tenderness, swelling,
other

arteries
veins
nerves
lymph nodes
nails



Prevalence of Pain Complaints in a General Population: An Australian Study

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ABSTRACT

A telephone survey of two hundred and sixty five randomly selected households in Brisbane, Australia was undertaken to study the prevalence rates of self reported pain. This data was analysed in terms of selected demographic variables. The survey also obtained information on the characteristics of the pain and the type and effectiveness of the treatment sought by sufferers. Nineteen percent of individuals reported that they "were currently experiencing pain or regularly troubled with pain". Over thirty five percent of households included one or more persons who were "currently experiencing pain or regularly troubled with pain". Females had higher pain prevalence rates than males and pain prevalence rates increased with age.

The majority of respondents described their pain as: (1) located in the back; (2) discomforting (the second point of a five point scale based on the Short Form McGill Pain Questionnaire); (3) of either spontaneous cause or unknown origin; (4) of a duration of at least three years; and (5) present either continuously or on a daily basis.

The most popular form of treatment was a visit to a health professional (usually a doctor).

INTRODUCTION

The epidemiology of pain within Western communities has not been extensively researched. The few studies that have been reported may suffer with an inherent bias as they have been drawn from either psychiatric [] or general practice populations³. The Australian Bureau of Statistics (ABS) has conducted two "Australian Health Surveys", the first in 1977-78 and the second in 1983 but neither contains data on pain prevalence rates².

This study's main objective was to gather data on the prevalence of self reported pain complaints in a typical segment of the Australian community. This data was analysed in terms of selected demographic variables.

Other objectives included the analysis of the reported pain characteristics and the type and effectiveness of treatment sought.

The results indicate that there is virtually an epidemic of pain within our community.

The chronicity and severity of the reported pain complaints suggest that there is little cause for complacency and that a social imperative exists for exploration and improvement of our existing pain management techniques.

METHOD

A random telephone survey of two hundred and sixty five households in the Central Brisbane Telephone Zone and the Outer Metropolitan Zones was undertaken in October/November 1987. This sample size was based on an estimated prevalence rate of self reported pain of 20%. A copy of the survey is attached.

Those people who co-operated in the survey were asked whether they or any other member of their household over 15 years of age "were currently experiencing pain or regularly troubled with pain". If a negative answer was received the interviewer asked for brief demographic data only on the household members (age, sex, and the number of people in the household over 15 years of age) and the survey terminated. This enabled comparison between those reporting pain and those not reporting pain on these demographic variables.

If a positive response was received the full pain questionnaire was completed for each person in the household currently experiencing pain or regularly troubled with pain. Whenever possible, attempts were made to obtain the data directly from the person with the pain.

RESULTS

The results presented in this paper cover the following:

- comparison of the survey population and the Brisbane City Statistical Sub-Division;
- household and individual pain prevalence rates;
- demographic characteristics of pain versus no pain populations;
- demographic characteristics of the pain population;
- pain characteristics; and
- treatment characteristics

Comparison of the Survey Population and the Brisbane City Statistical Sub-Division

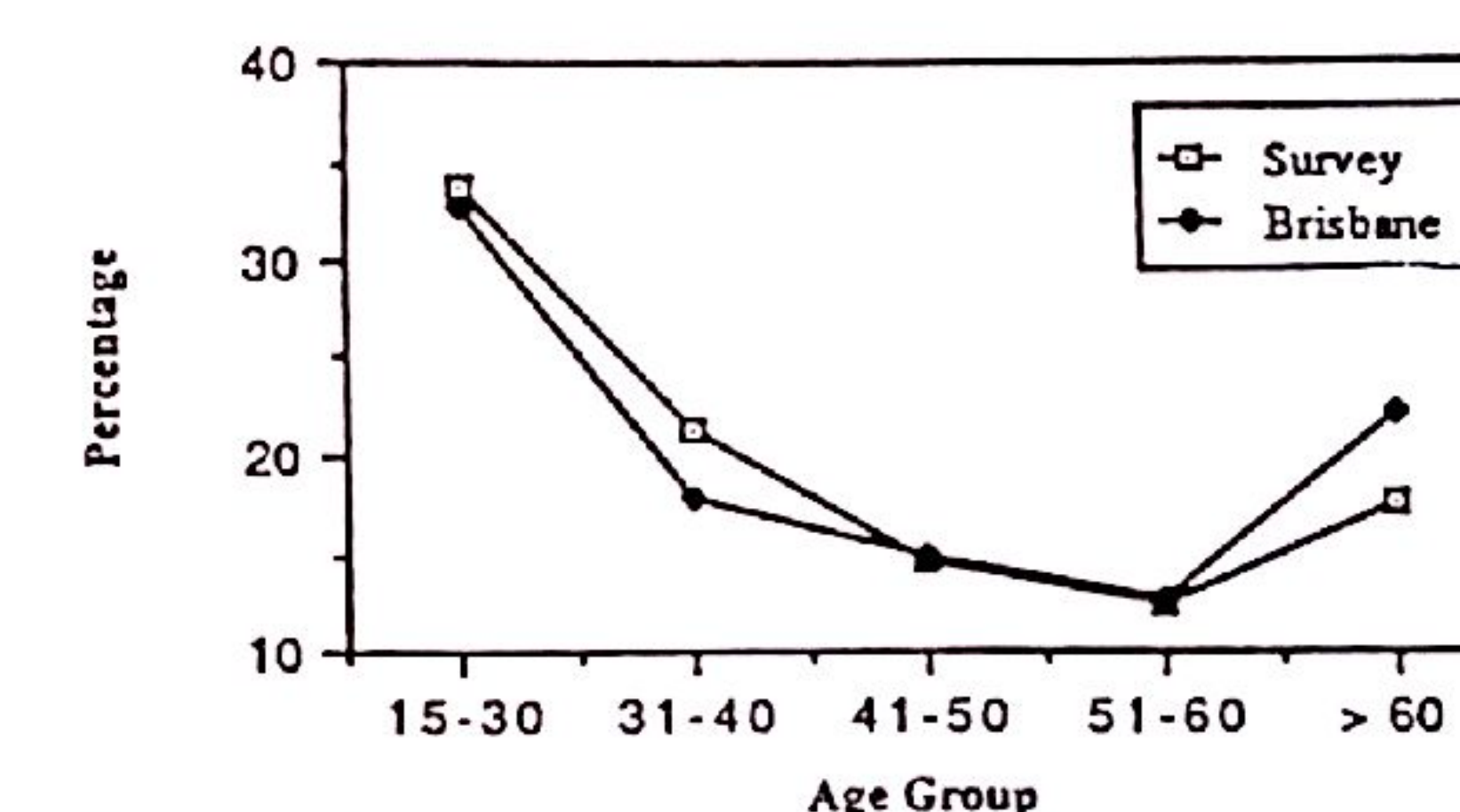


Figure 1:

Figure 1 shows the age distribution of the survey population compared to the age distribution of the Brisbane City Statistical Sub-Division population⁽²⁾. The Brisbane City Statistical Sub-Division was the closest approximation available for describing the characteristics of the population from which the sample was drawn (the Brisbane telephone directory). Data on age and sex for this population were obtained from the 1986 Census. The limitations this imposes on interpretation of the results are outlined in the discussion. The survey population has a lower proportion of individuals sixty years and over, possibly because this age group is more likely to be living in dwellings other than private households, such as, hospitals or aged persons homes. These types of dwellings were excluded from this survey and only private homes contacted.

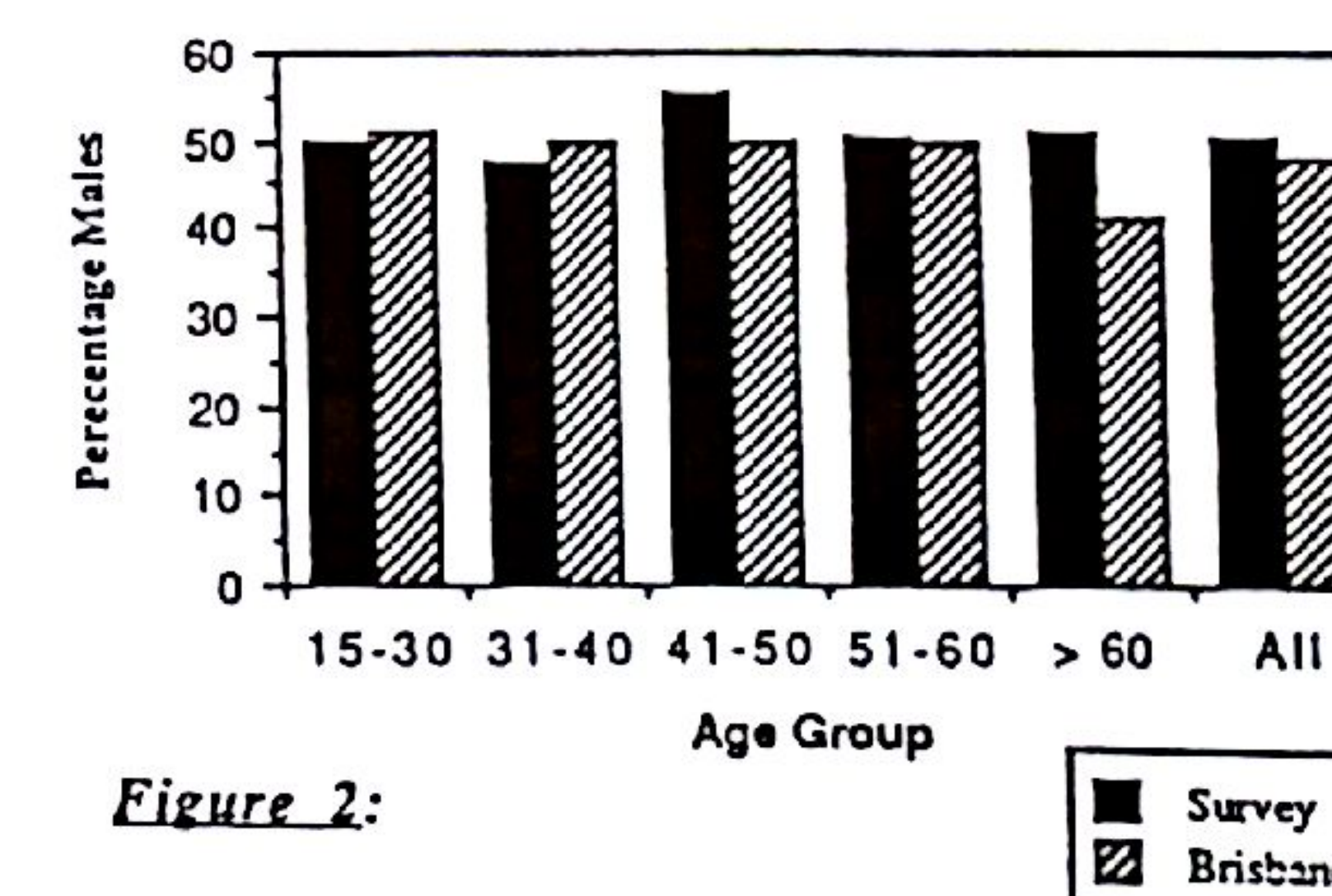


Figure 2:

Figure 2 shows the sex distribution of the survey population for males compared to the sex distribution of the Brisbane City Sub-Division population¹. Overall, more males are represented in the survey population shown in Statistical Sub-Division population.

Household and Individual Pain Prevalence Rates

The household and individual pain prevalence rates are presented in Figure 3.

Household Pain Prevalence Rates

Over the two hundred and sixty five households surveyed, ninety four households had at least one person who was currently experiencing pain or was regularly troubled with pain. The household pain prevalence rate was therefore three hundred and fifty five per one thousand head of population (35.5%). A total of two hundred and thirty two households refused to participate in the survey or could not be reached. If it is assumed that all of these households were free of pain the minimum household pain prevalence rate would be one hundred and eighty eight per one thousand head of population (18.8%).

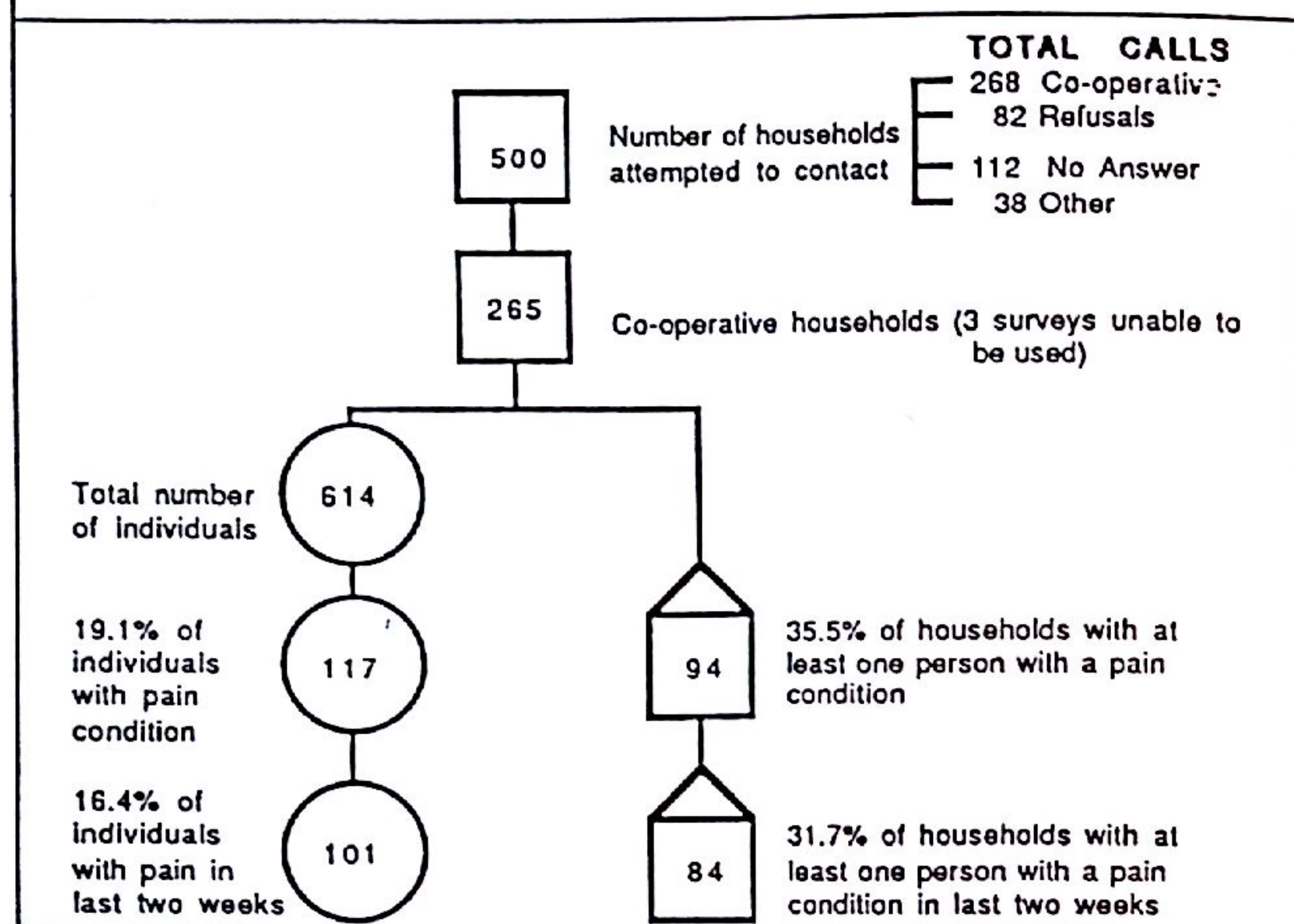
Of the ninety four households in which at least one person was currently experiencing pain or regularly troubled with pain, there were eighty four households in which one or more person reported that a pain condition had been experienced within the two weeks preceding the survey. The household pain prevalence rate for pain in the two weeks preceding the survey was therefore three hundred and seventeen per one thousand head of population (31.7%). The minimum pain prevalence rate (defined as above) is one hundred and sixty eight per one thousand head of population (16.8%). These results are similar to those obtained in a Canadian survey by Crook et al⁽³⁾. Household prevalence rate three hundred and fifty two; minimum prevalence rate was two hundred and sixty two (for pain reported within two weeks prior to survey).

Individual Pain Prevalence Rates

A total of six hundred and fourteen individuals participated in the survey. Of these, one hundred and seventeen individuals reported that they were currently experiencing pain or regularly troubled with pain. The individual pain prevalence rate was one hundred and ninety one per one thousand head of population (19.1%).

Of these one hundred and seventeen individuals, one hundred and one had experienced this pain within the two weeks preceding the survey. This is a pain prevalence rate of one hundred and sixty four per thousand head of population (16.4%). Again these results are similar to the findings of Crook et al. Individual prevalence rate one hundred and sixty one (for pain reported within two weeks prior to survey).

Figure 3: Numbers of individuals and households included in the survey and the pain/no-pain responses



Demographic Characteristics of Pain versus No Pain Populations

Data on three demographic variables was obtained in the survey; the sex of each household member, the

age of each household member measured by a range and the number of people over the age of fifteen years living in the house. This data is presented in Table 1.

These demographic variables were compared using the chi square statistic.

Table 1: Demographic Characteristics of the Survey Population

Demographic Variable ¹	Pain		No Pain		Total	
	N	%	N	%	N	%
Sex						
Males	53	45.3%	257	51.7%	310	50.5%
Females	64	54.7%	240	48.3%	304	49.5%
Age						
15-30 ²	20	17.1%	188	37.8%	208	33.9%
31-40	17	14.5%	114	22.9%	131	21.3%
41-50	16	13.7%	74	14.9%	90	14.7%
51-60	19	16.2%	58	11.7%	77	12.5%
Over 60	45	38.5%	63	12.7%	108	17.7%
Household Size						
³ One	17	14.5%	30	6.0%	47	7.7%
Two	70	59.8%	204	41.1%	274	44.6%
Three	17	14.5%	115	23.1%	132	21.5%
Four	8	6.8%	96	19.3%	104	17.0%
Five	5	4.3%	45	9.1%	50	8.1%
Seven	0	0.0%	7	1.4%	7	1.1%

The variable of sex was not statistically significant in discriminating between the pain and no pain groups.

However the pain and no pain groups differed significantly on the variables of age ($p < 0.001$) and household size ($p < 0.001$). This information is presented graphically in Figures 4 and 5.

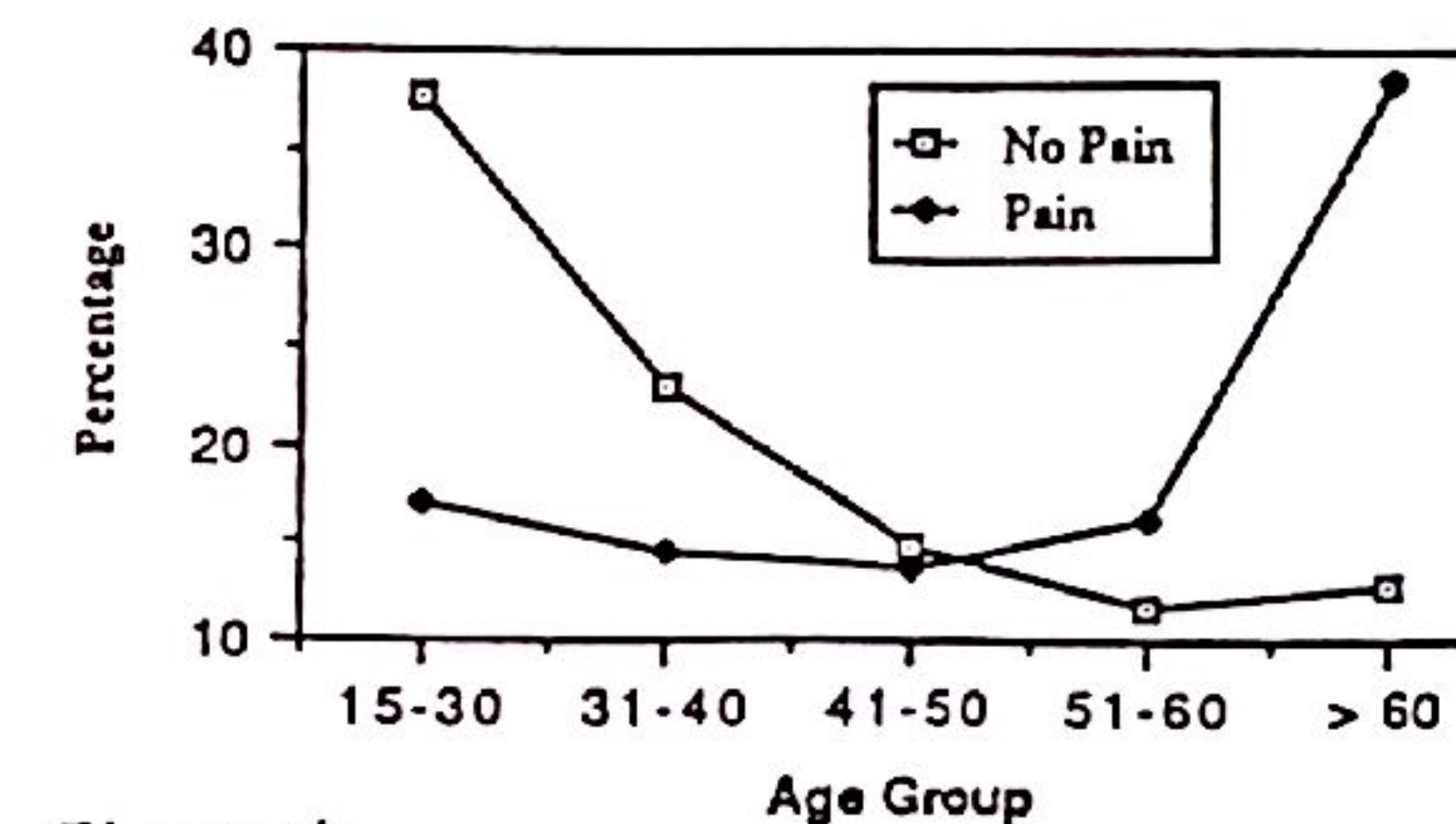


Figure 4:

The pain population tended to be older and to live in smaller households in comparison to the no pain population.

Demographic Characteristics of the Pain Population

Table 2 presents the pain prevalence rates of the pain population broken down by age and sex. This data is graphed in Figure 5.

For all persons the pain prevalence rate increases as age increases. Females have higher pain prevalence rates across all age groups except for the 15-30 interval where the rate is equal.

Pain Characteristics

The survey obtained information on a number of pain characteristics considered to be of interest. These were location of most severe pain, pain intensity, cause, pain frequency and length of time since the pain was first experienced.

Table 2: Prevalence Rate for Pain Population by Age by Sex

Age Group	Total Survey N	Total in Pain N	Total in Pain %	Total Males N	Males in Pain N	Males in Pain %	Total Females N	Females in Pain N	Females in Pain %
15-30	208	20	9.6%	104	10	9.6%	104	10	9.6%
31-40	131	17	13.0%	62	7	11.3%	69	10	14.5%
41-50	90	16	17.8%	50	7	14.0%	40	9	22.5%
51-60	77	19	24.7%	39	8	20.5%	38	11	28.9%
Over 60	108	45	41.7%	55	21	38.2%	53	24	45.3%
All	614	117	19.1%	310	53	17.1%	304	64	21.1%

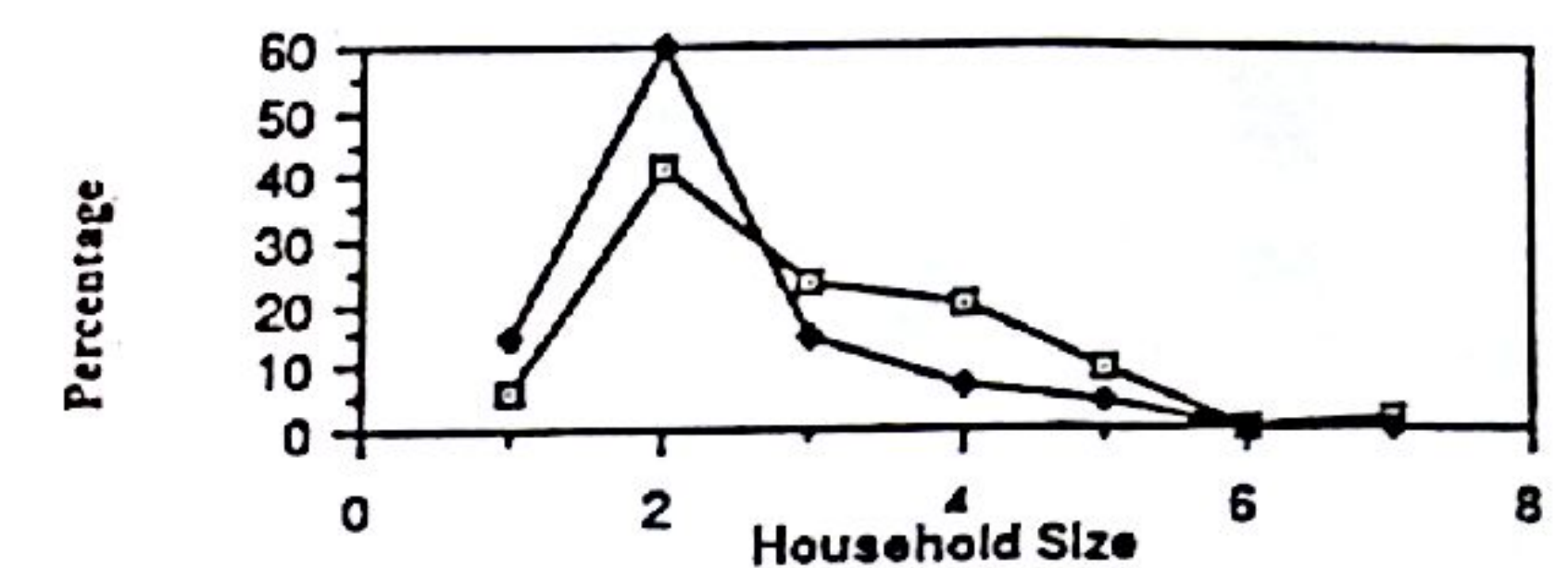


Figure 5:

As shown in Figure 6 the majority of respondents experienced back pain; 77% of this was in the lower back. The head category includes the neck/shoulder as well as head; these were roughly reported in equal proportions. The leg category covers referred leg pain, knee, ankle and foot pain. It should be noted that "other" includes respondents suffering from arthritis who were often unable to pin-point the most severe location of their pain.

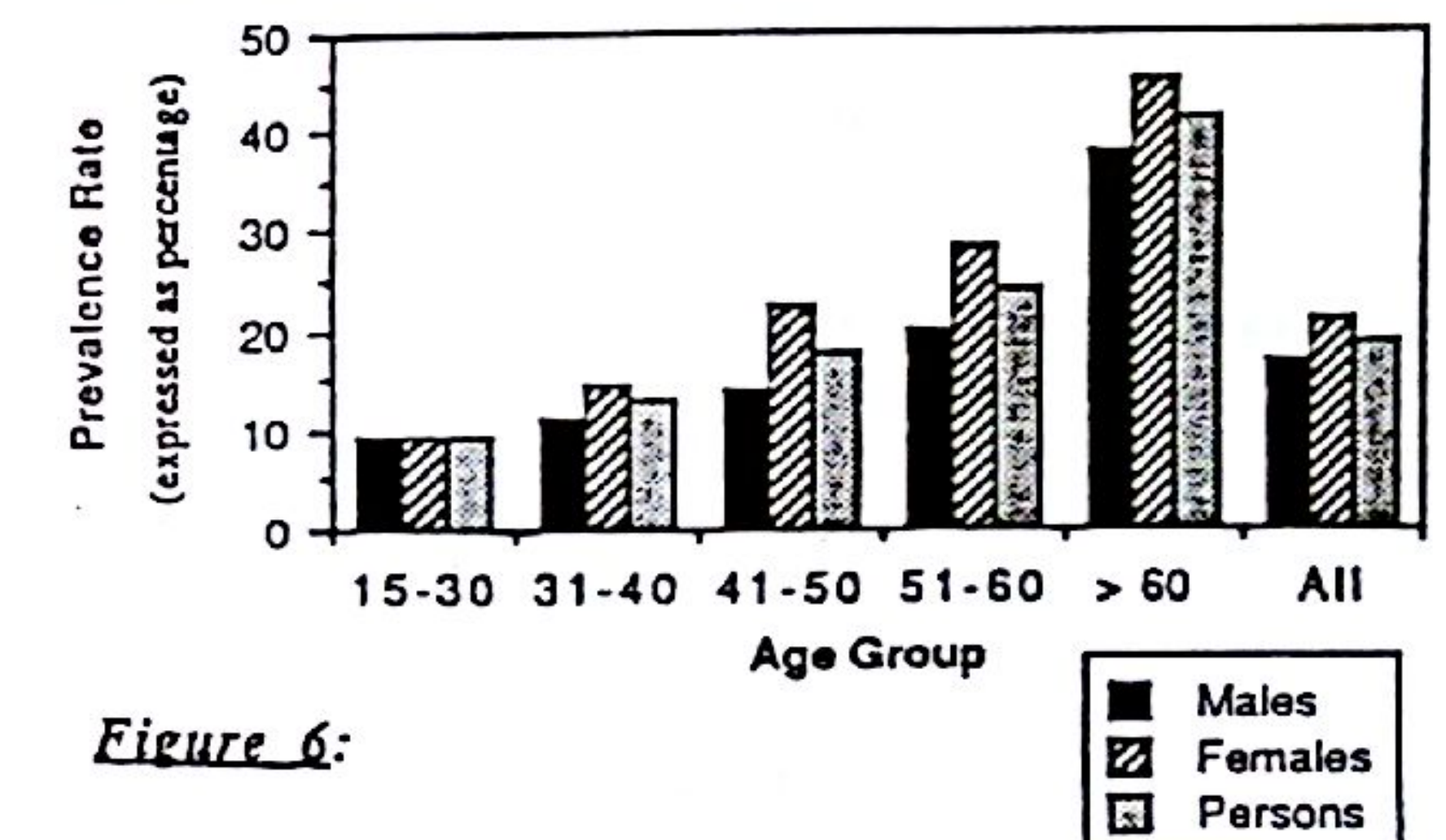


Figure 6:

Pain intensity is graphed in Figure 7. The descriptive scale categories used in this question were based on the McGill Pain Questionnaire. The majority of respondents described their pain as discomforting. It should be noted that 45% of respondents described their pain as distressing or worse.

Cause of pain conditions is graphed in Figure 8. For most respondents the pain was of unknown or spontaneous origin (55%). Work related injuries accounted for 21% of responses.

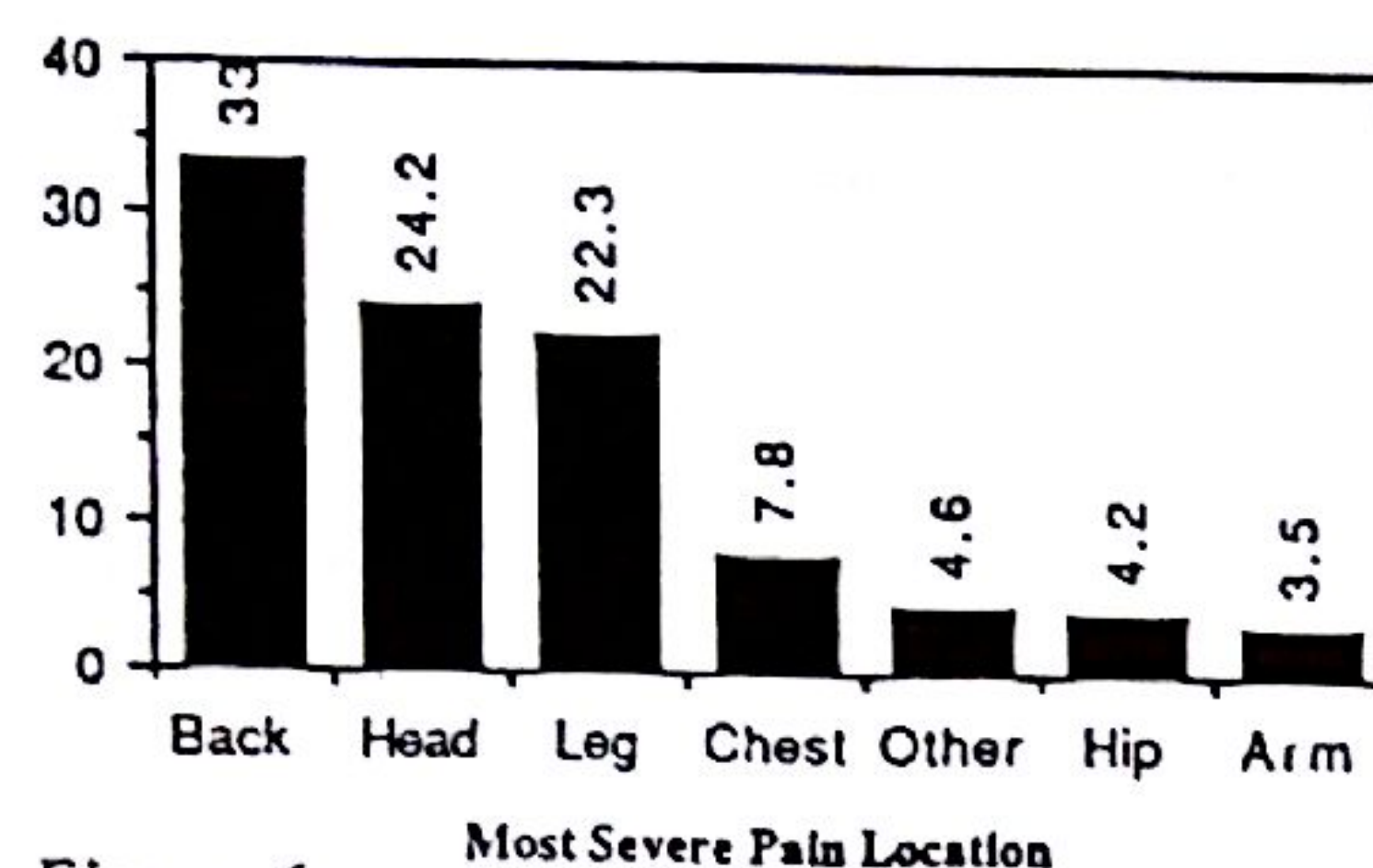


Figure 6:

The graph presented in Figure 9 illustrates the length of pain history. Approximately 70% of respondents had suffered from pain for more than three years.

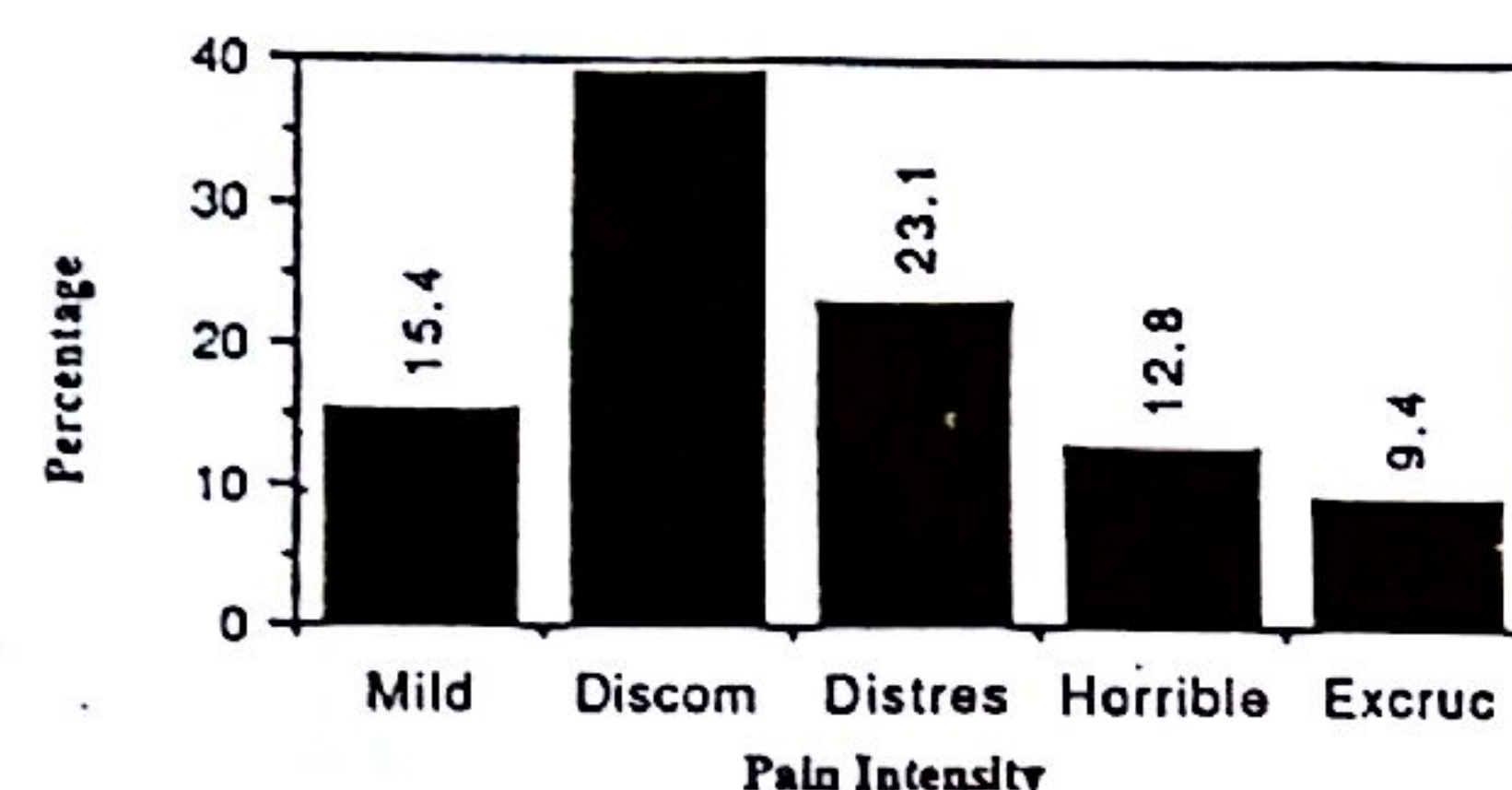


Figure 7: Pain Intensity

As Figure 10 shows 53% of respondents had suffered from a pain condition either continuously or on a daily basis. The category of "other" includes respondents with random or seasonal occurrences of pain

The questionnaire also asked whether the pain condition had been experienced within the last two weeks. The proportion of respondents experiencing pain within the last two weeks was 86%. [A cross tabulation showed that 60% of these respondents reported either continuous or daily suffering; 50% of this group considered the pain intensity as either mild or discomforting and the remaining 50% as distressing or worse.]

Chronic pain is often defined as pain which began three or more months earlier. Using this definition seventy two (62%) of the one hundred and seventeen individuals reporting pain suffered from chronic pain. Of these, fifty respondents (42%) described their pain as either "distressing", "horrible" or "excruciating".

Treatment Sought and Effectiveness

The last part of the questionnaire covered the kinds of treatment used by those suffering from pain. The majority of respondents (70%) visited a health professional (Figure 11). Of the remaining 30%, equal numbers used self-treatment or no treatment.

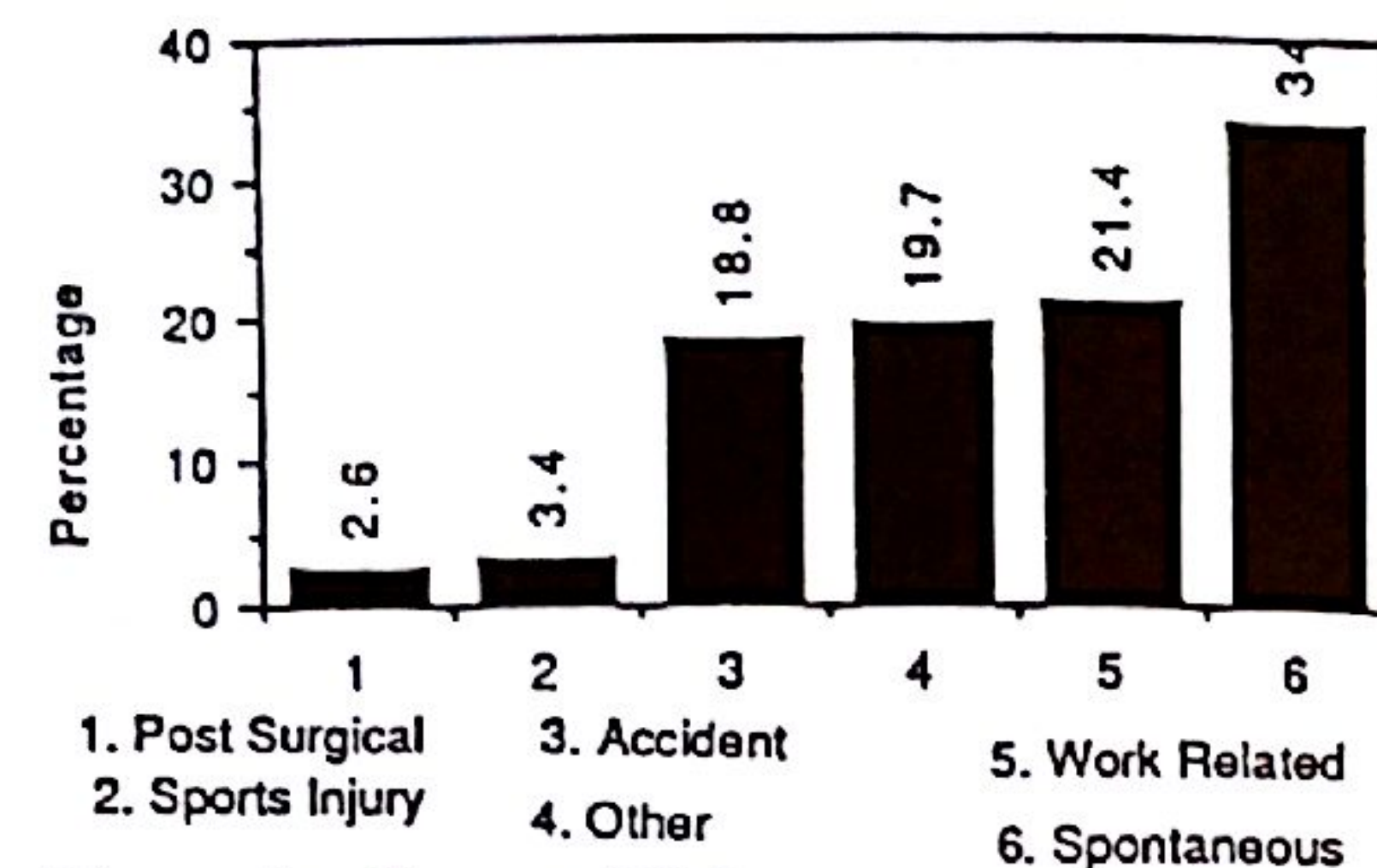


Figure 8: Cause of Pain

Doctors were the most commonly consulted health professionals. This category included doctors in private practice as well as those in out patient clinics of hospitals. The "other" category included naturopaths, herbalists, iridologists etc.

Respondents overwhelmingly found treatment to be of some assistance in treating their pain and 73% said their condition was better after treatment.

Of the 15% of respondents who used self-treatment, a majority believed their condition had improved. Before deciding on self-treatment 50% had seen either doctors or chiropractors. They undertook self-treatment primarily because they believed the treatment from the health professionals to be ineffective. Cost, time, and travel constraints were not important in influencing this decision.

Of the respondents who relied on no treatment the main reason for choosing this course of action were either that the condition was not serious enough or that they considered health professionals could not help. Again, cost, time/travel constraints were not considered important.

DISCUSSION

It was not always possible for the pain questionnaire to be answered by the person with the pain condition. In about half the cases the pain questionnaire was answered by the person with the pain. Comparison of tables shows that this percentage of persons reporting their own pain were in the 15 - 30 year age group. This was possibly as parents tended to answer the telephone.

This fact introduces some bias and is a commonly encountered problem in telephone health surveys⁽⁴⁾.

An additional limitation was that it was not possible to make a completely satisfactory estimation of the characteristics of the population from which the sample was drawn. The Brisbane City Statistical Sub-Division boundaries (as defined by the Australian Bureau of Statistics) are similar to the area included in the Brisbane telephone directory but not exactly the same. This fact

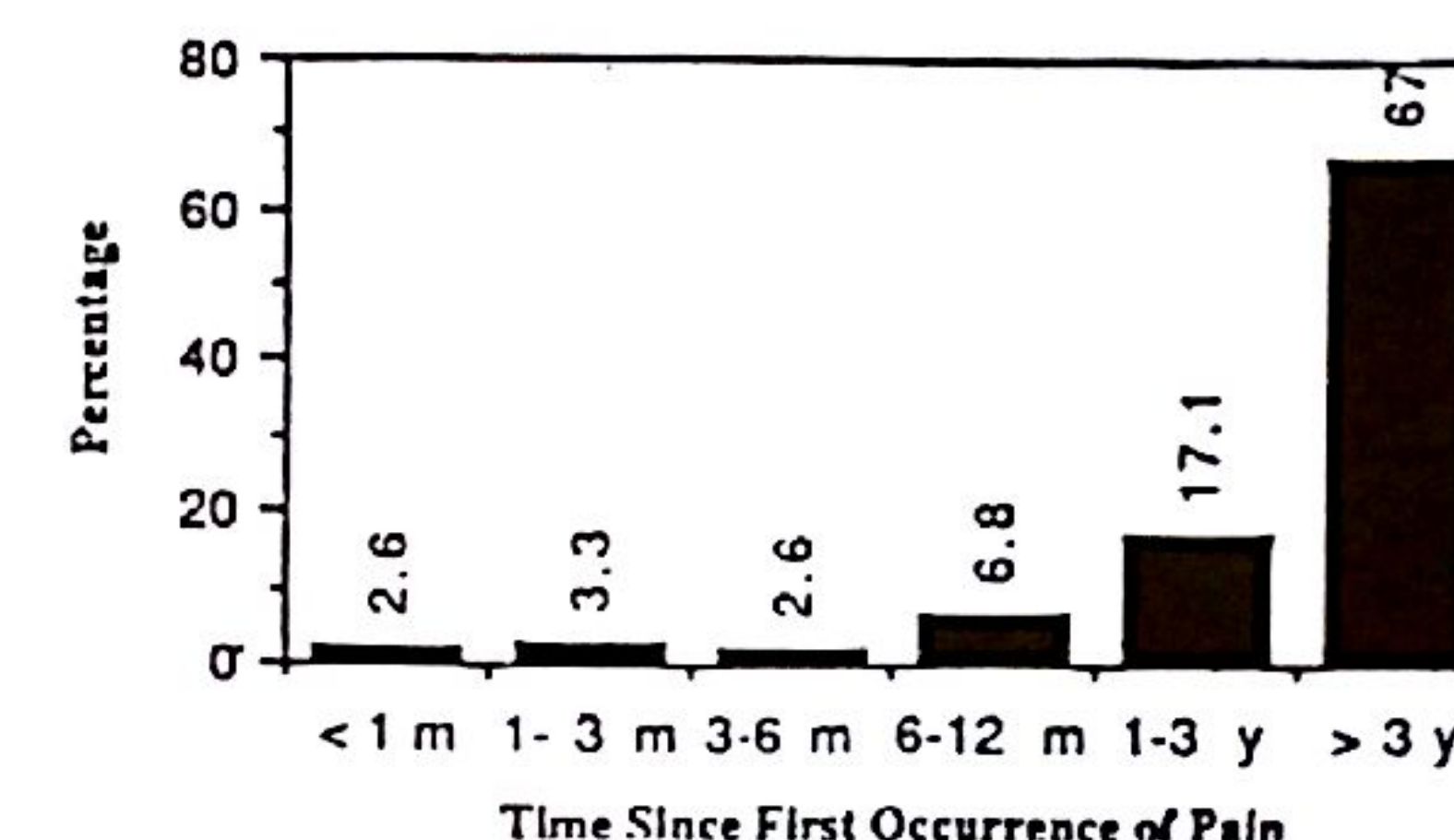


Figure 9: Time Since First Occurrence of Pain

should be kept in mind in extrapolating the results to the larger population as some bias may have been introduced.

A profile of a typical pain sufferer identified in this survey would be as follows: probably female, over 60 years of age, reports lower back pain, the pain has been present for over three years and is felt either continuously or daily.

The survey indicates that a large proportion of the population are suffering from painful conditions. Of particular concern must be the findings regarding the characteristics of those conditions. The majority of respondents have chronic pain and this must be seriously affecting their quality of life given the answers to the "intensity" and "frequency of occurrence" questions. Although visiting a doctor was the most common treatment and this was seen generally to lead to an improvement in the pain condition it is clear that this is

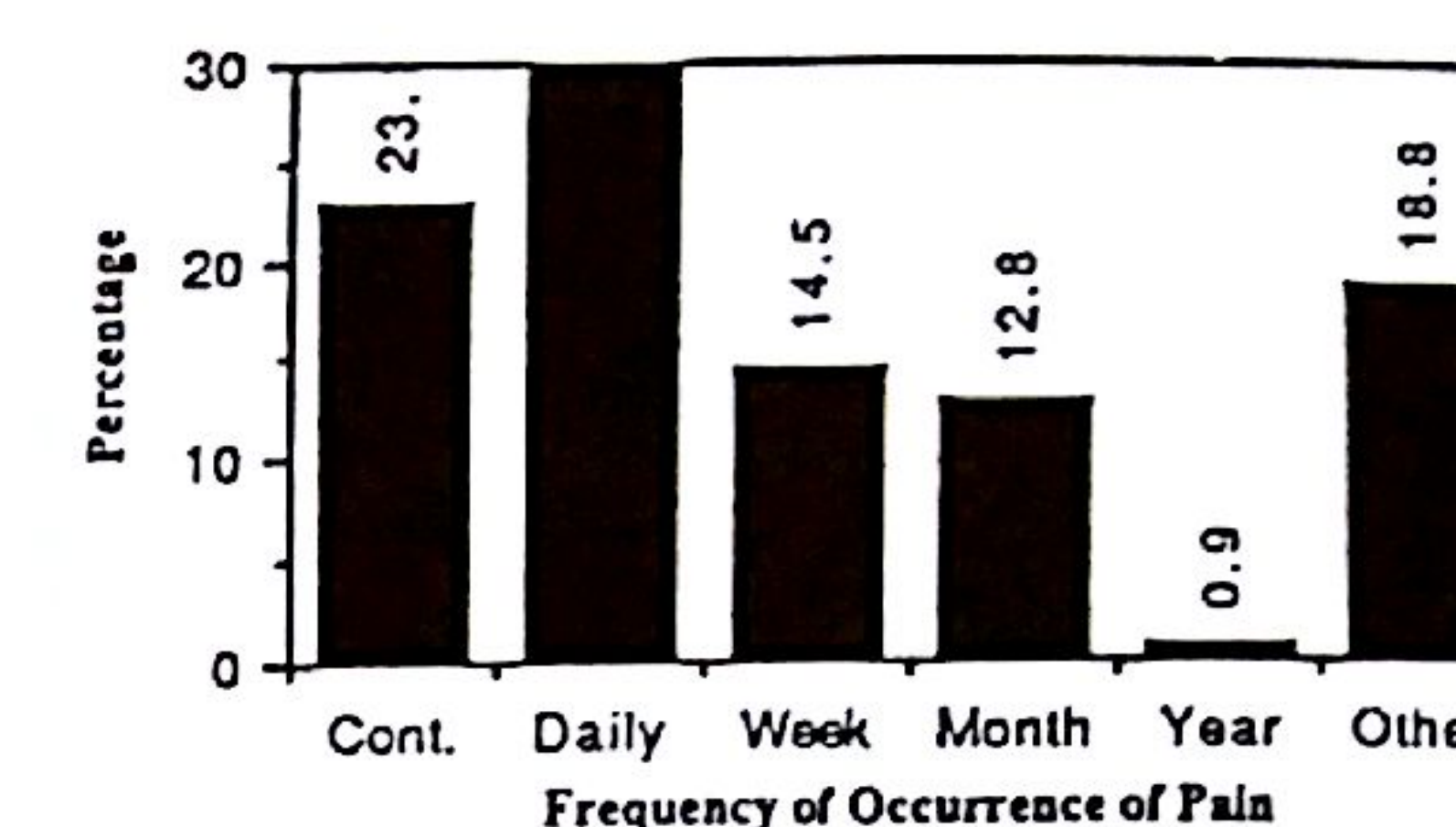


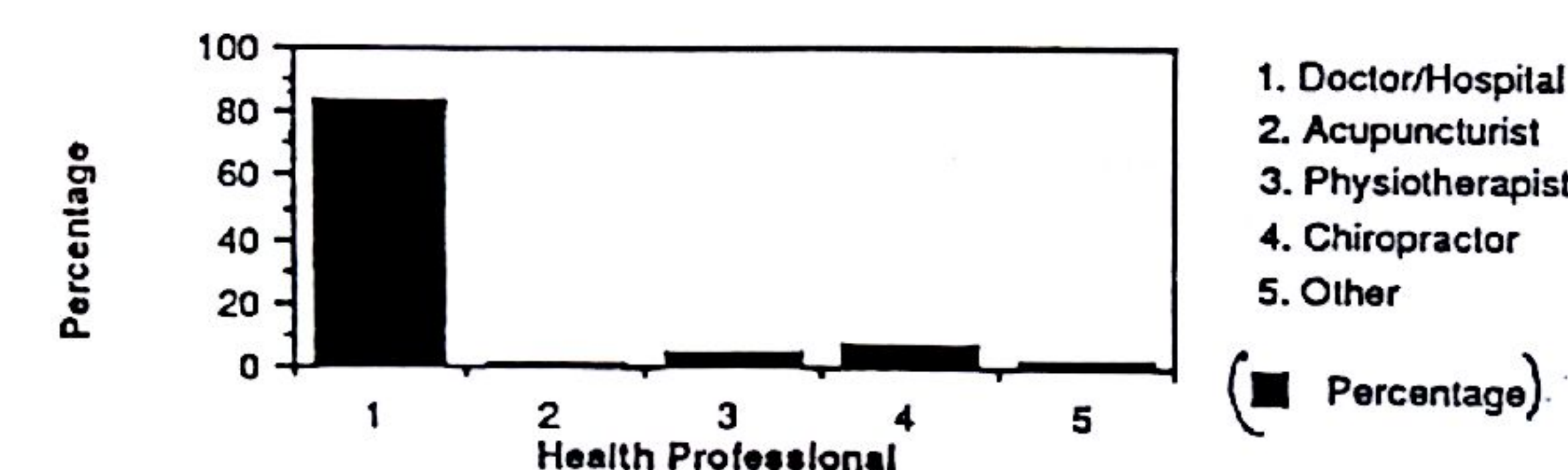
Figure 10: Frequency of Occurrence of Pain

only usually a temporary remedy. Analgesic medications take the edge off the pain when it becomes too hard to bear but the medical profession is unable to provide cures.

One of the limitations of a telephone survey is time; the patience of those answering the telephone is limited. The economic implications of the existence of chronic pain could not be explored in (say) questions about time off work, number of visits to a health professional etc. for this reason. Nevertheless it is reasonable to suppose that the economic cost to the nation must be considerable.

The challenge for the medical profession in particular must be to re-assess the pain management techniques now commonly practised and to find new ways of minimising or curing pain. This will be increasingly important as Australia's population continues to age.

Figure 11: Type of Health Professional Consulted



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3. Crook J, Rideout E, Browne G. The Prevalence of Pain Complaints in a General Population. Pain, 18, p299-314, 1984.
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HOUSEHOLD QUESTIONNAIRE

Household Number:.....

- (1) How many people in this household are there over 15? (Do not count visitors in this answer.)

- (2) Are any of these people currently experiencing pain or regularly troubled with pain? (Complete answer box below - note dental pain is excluded).

- (3) For each of these people could you please tell me their age, and whether they are male or female? (Complete answer box below)

Use the following intervals to complete age information:

15-30 31-40 41-50 51-60 60+

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

	Question Two	Sex	Age	Question Three	Sec	Instructions
	(No.)	M/F	(No.)	Pain	Y/N	PQ No. (0,1,...,7)
Person One
Person Two
Person Three
Person Four
Person Five
Person Six
Person Seven

INSTRUCTIONS FOR INTERVIEWER AT COMPLETION OF QUESTIONNAIRE:

Check that you have completed the household number and the PQ (Pain Questionnaire) Number on each survey and in the above box. The PQ number is "0" for all "No Pain" answers and from "1" to a maximum of "7" for "Yes" answers. Note that on the next survey the PQ numbers start at 0,1,2 again. (We are using the household number to keep track of the results in coding, and the PQ numbers are "attached" to that.)

TREATMENT QUESTIONNAIRE

- (8) Do you currently visit a health professional for this pain condition or do you use self or no treatment?

1. Health Professional 2. Self Treatment 3. No Treatment

1. ☐ 2. ☐ 3. ☐

- (9) What kind of health professional are you currently visiting?

1. Doctor (private or hospital) 2. Acupuncturist 3. Chemist 4. Physiotherapist 5. Chiropractor 6. Other

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐

- (10) Did this Doctor administer acupuncture?

Y. Yes. N. No

1. ☐ 2. ☐

- (11) Was the acupuncturist also a doctor?

Y. Yes. N. No

1. ☐ 2. ☐

- (12) How effective was the treatment? Was the condition made worse, no change, or better?

1. Worse. 2. No Change 3. Better

1. ☐ 2. ☐ 3. ☐

- (13) Did you use a different health professional before changing to the current one?

Y. Yes. N. No

1. ☐ 2. ☐

- (14) What kind of health professional did you use before changing to the current one?

1. Doctor (private or hospital) 2. Acupuncturist 3. Chemist 4. Physiotherapist 5. Chiropractor 6. Other

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐

- (15) Why did you change?

1. Treatment not working 2. Too expensive 3. Time/Travel Constraints 4. Other

1. ☐ 2. ☐ 3. ☐ 4. ☐

END OF SURVEY - PAGE ONE.

PAIN QUESTIONNAIRE - Household Number ----- PQ Number -----

- (1) This questionnaire is being answered by the

1. Person with the pain 2. On behalf of the person with the pain

- (2) (a) When suffering from the pain, where is it located? (fill in box below - more than one location is acceptable.)

Head 1. ☐ Back - Upper 6. ☐ Knee 11. ☐
Neck 2. ☐ Back - Lower 7. ☐ Ankle 12. ☐
Arm 3. ☐ Hip 8. ☐ Feet 13. ☐
Chest 4. ☐ Leg 9. ☐ Arthritis 14. ☐
Abdomen 5. ☐ Sciatica 10. ☐

- (3) (b) If in more than one place, which is the most severe location?

- (4) When suffering from the pain, how would you describe its intensity using the following scale?

1. Mild 2. Discomforting 3. Distressing 4. Horrible 5. Excruciating

- (5) How frequently does the pain occur?

1. Continuous 2. Recurring Daily 3. Recurring Weekly 4. Recurring Monthly 5. Recurring Yearly 6. Other

- (6) Has this pain been experienced in the last two weeks?

Y. Yes N. No

- (7) How long have you suffered from this pain condition?

1. Less than 1 month 2. 1 month to less than 3 months 3. 3 months to less than 6 months 4. 6 months to less than 1 year 5. 1 to less than 3 years 6. 3 years and over

- (8) Under what circumstances did the pain begin?

1. Accident 2. Work Related Injury 3. Post Surgical Injury 4. Illness 5. Sports Injury 6. Spontaneous 7. Other

Self Treatment Questions

- (16) How effective was the treatment? Was the condition made worse, no change, or better?

1. Worse. 2. No Change 3. Better

1. ☐ 2. ☐ 3. ☐

- (17) Did you use a doctor or other health professional for this pain condition before deciding on self treatment?

Y. Yes. N. No

1. ☐ 2. ☐

- (18) What kind of health professional were you seeing?

1. Doctor (private or hospital) 2. Acupuncturist 3. Chemist 4. Physiotherapist 5. Chiropractor 6. Other

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐

- (19) Why did you stop using the services of a health professional?

1. Treatment not working 2. Too expensive 3. Time/Travel Constraints 4. Other

1. ☐ 2. ☐ 3. ☐ 4. ☐

END OF SURVEY - PAGE ONE.

- (20) Which of the following reasons describe why you have never used a doctor or other health professional in treating this pain condition?

1. Not serious enough to bother anyone 2. Health professionals could not help 3. Too expensive 4. Time/Travel Constraints 5. Other

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

END OF SURVEY - PAGE ONE.

BOOK REVIEW

The Foot and its disorders

Edition 3, 1991

Edited by Prof Leslie Klenerman

This is a detailed and thorough orthopaedic approach to the foot and foot related problems. The text is what one has come to expect from a traditional English background. It is written especially for the orthopaedic surgeon and as such, does have limited application to the musculoskeletal physician.

There does appear to be quite a different literary style between the English and their American counterparts. For example, there are statements such as, 'What types of treatment are available for the second category of patients?' I personally find this type of phrasing a little annoying. The overall text seems a little rambling though all statements are well supported with references. The detail is extensive but the surgical approach shines through.

The more common, everyday office type conditions are touched on only briefly and more time is spent on problems that require surgical intervention. Stress fractures, gait abnormalities, common podiatry conditions, etc are better dealt with in other publications.

Radiology has 120 pages of content. It is excellent. There is adequate cover of plain radiology, CT scans and MRI. Many of the very numerous X-rays reproduced are accompanied by line drawings. Overall I felt this was the most informative section of the book.

The section relating to orthotic correction of foot related problems is not very informative and appears to have been glossed over. Even more so, it is quite outmoded in approach. The term podiatry is not used, the old fashioned term chiropody still being preferred. Modern day orthotic devices are not covered and there is detail on external shoe correction such as metatarsal bars and sole wedges. Moulded polypropylene splints are well illustrated and one gets the impression that this section of the book is at least ten years behind what is currently being taught here in Australia and the USA.

In spite of these criticisms, the book is an excellent reference text and covers well what it set out to do in most sections. It does however, remain outside the scope of what is required by a musculoskeletal physician. It would certainly be a rewarding book for the orthopaedic registrar.

RRP \$258.00

Editor



BOOK REVIEW

Manual of Rheumatology & Outpatient Orthopaedic Disorders

Edited by Stephen Paget, Paul Pellicci & John Beary

This book is one of a series of excellent manuals that is released under the label, "A Little, Brown Spiral Manual". It is distributed in Australia by Blackwell Scientific Publications, Melbourne.

There is the need by all musculoskeletal physicians to have a comprehensive understanding of the arthritides. The Flinders Graduate diploma course has heavy emphasis on rheumatological disorders as these occur commonly in general practice and even more so in a specialised field like musculoskeletal medicine. There can be no excuse for missing the diagnosis of many of these conditions even though the treatment of these will be undertaken by other specialty groups. In accumulating knowledge there remains a balance between what is essential to know to be efficient and that required by practitioners who are sole specialists of that subject.

This handy sized (white coat pocket size) book covers all the knowledge that will be required by a Diploma student and to undertake the examinations. In spite of its small physical dimensions, the book is 500 pages long and covers a wide range of subjects from specific conditions through drug formulary and physical therapy.

The main sections of the book are divided as follows;

1. Musculoskeletal Data Base
2. Clinical Presentations
3. Diagnosis and Therapy
 - a Connective Tissue Disorders
 - b Seronegative Spondyloarthropathies
 - c Crystal arthropathies
 - d Infectious Disease involving the musculoskeletal system
 - e Osteoarthritis, metabolic bone and endocrine disorders
 - f Other rheumatic disorders
4. Orthopaedic Surgery and Rehabilitation: Principles and Practice
5. Appendices

The information included is complete and is written in the easy to learn format of 1., 2., 3; a, b, c etc. This listing type approach is excellent for both quick reference and study learning. Basically each chapter is written by a different author of all whom appear to be experts in their own field. Some chapters are compiled by a group of authors.

The edition under review is the third and was released in 1993. Like all text books, there is some delay in producing the latest research from journal articles into text book form. In this book I could only find one major admission, that being the introduction of pulsed steroids in the treatment of rheumatoid arthritis when commencing therapy with across the board DMART initiating therapy.

There are few diagrams and basically no pictures in the text. These are not admissions for it is against the principle lay out of the text. This book is not pretending to be a text book form in the accepted sense, it is an excellent "carry around manual". It is fully recommended.

RRP \$50.00

Editor

BOOK REVIEW

Back Pain: Recognition and Management

by Michael Hutson

Published by Butterworth-Heinemann Ltd, London, 1993.

Any new medical text on spinal pain and its management is likely to be of interest to practitioners of musculoskeletal medicine. This one is particularly so. Its author is the current president of the British Institute of Musculoskeletal Medicine and an examiner for the Diploma of Musculoskeletal Medicine course which was established recently in the United Kingdom. Both the book and the course are further manifestations of the increasing interest in the discipline worldwide.

Hutson sets out an overview of musculoskeletal medicine in relation to the diagnosis and management of conditions affecting the axial skeleton. The approach he takes is one which will be familiar to Australian and New Zealand practitioners. Relevant aspects of the basic sciences of anatomy, biomechanics and pathology are addressed first. Clinical assessment is then described in the context of the basic scientific information, with the aim of formulating a clinical diagnosis which correlates the assessment findings with known pathological entities. Management strategies are then considered, with emphasis on the least invasive modalities which are likely to be effective in the particular circumstances.

The text is divided into five chapters, dealing with fundamentals, the cervical spine, the thoracic spine, the lumbar spine and sacro-iliac joints, and rehabilitation and prophylaxis. Overall, the material presented in each is a summary of the essential elements of the discipline, combining current scientific concepts with the traditional arts of clinical assessment and physical treatment and putting recent developments into perspective. The emphasis throughout is on physical modalities. The need for comprehensive physical examination is stressed and the techniques employed are well described and illustrated with photographs of a high quality. Treatment techniques are set out similarly. The various manoeuvres are arranged generically. In his preface Hutson describes his background as eclectic and makes reference to the "jungle of competing ideologies" which has hampered the development of musculoskeletal medicine and allied disciplines. By describing techniques in biomechanical rather than eponymous terms, Hutson avoids many of the confounding influences and provides a practical manual which will be of value both to newcomers to musculoskeletal medicine as well as to those with some experience of the discipline.

Injection procedures are also addressed but less comprehensively than manual techniques. Whilst this is probably appropriate in a book designed as an introduction to the subject, some of the references to injections may tend to confuse those seeking an outline of their place in assessment and management. Intra-articular injections of the zygapophysial joints are identified as being of diagnostic significance (as established in the literature) and described as requiring X-ray control for their accurate placement. However, medial branch blocks, which are more commonly used for definitive diagnosis (because they are less invasive and less uncomfortable for the Patient) are described rather ambiguously, as "facet blocks", and in the context of treatment rather than that of investigation. The description of such blocks being performed "in the clinic setting (without the need for X-ray screening)" will possibly cause some consternation for those who use medial branch blocks regularly but who find that accurate needle placement generally requires radiological assistance and often the facility of a C-arm fluoroscope. The performance of a sinuvertebral nerve block without screening might also be a daunting prospect to some, whereas the requirement for screening for a paravertebral block seems a little inconsistent. These points are relatively minor in the scope of the discipline as a whole but they are important ones, especially for those seeking some understanding of the procedures concerned.

One of the strongest points of this book is Hutson's emphasis of therapeutic exercise as an essential element of the musculoskeletal management regime. Other authors have written books in which exercise was promoted as a

therapeutic modality but many of these have focused on particular forms of exercise. The implicit or explicit suggestion that a particular type of exercise is effective for most, if not all, spinal disorders relegates such works to the "competing ideologies" category. Hutson describes the various types of exercise and their indications. He stresses that the determination of which exercises are appropriate for a particular patient should be based (as are other management decisions) on the mechanical dysfunction detected.

The chapter on rehabilitation and prophylaxis contains useful information on posture, kinetics and ergonomics. The factors affecting spinal posture in the sitting position and appropriate seating for sedentary workers are set out in some detail. Work station design is addressed similarly, with particular reference to desks, keyboards, visual display units, drawing boards and similar equipment. Detailed information is also provided on the manual handling of goods, particularly with respect to lifting. The specific recommendations for safe lifting by healthy young workers to be limited to 10kg if at arms length and 16kg if arms are held close to the body make interesting comparisons to some of the loads which patients describe as having lifted in particular work tasks.

Other aspects of management addressed include the role of behaviour modification (particularly in circumstances of chronic pain and abnormal illness behaviour), back schools and other spinal education programmes. The reader is presented with a view of the discipline which, whilst maintaining its traditional base of physical methods of assessment and treatment also encompasses a broad spectrum of other strategies useful in the management of spinal pain problems.

In one relatively small volume Hutson provides a balanced summary of musculoskeletal medicine as it pertains to spinal disorders. This book will do much to increase understanding of these conditions and their management.

217pp. RRP \$75.00

W. King



COLOUR ATLAS OF ANATOMY

by Johannes W Roden and Chihiro Yokochi

Third Edition

Published by Igaku-Shoin, New York and Tokyo, 1993
distributed in Australia by Butterworth-Heinemann

A knowledge of anatomy is a fundamental requirement for any medical practitioner and is of particular importance in musculoskeletal medicine. Most clinicians keep anatomic atlases and make recourse to them from time to time to check anatomic factors or to revise regional relationships.

A problem which most atlases of anatomy have in common is that they consist of schematic line drawings which provide only a limited representation of actual structures and their relationships. The knowledge gained from such atlases is limited to the same degree. Those who have learnt anatomy in dissecting rooms are well aware of the advantages of studying actual specimens and the appreciation of anatomic relationships which can be gained from them. No matter how well executed, line drawings can provide only an approximate representation of larger structures and they generally give very little, if any, ideal of the intricacies of anatomic detail.

Roden and Yokochi's atlas represents a radical departure from the traditional style. It is comprised mainly of colour photographs of anatomic specimens especially prepared for the purpose. The photographs are of a very high quality, combining excellent clarity with natural colour reminiscent of the best dissecting room preparations. Each is labelled unobtrusively but comprehensively so that even the less significant structures in a region are readily identifiable.

Accompanying many of the photographs are schematic diagrams illustrating features of the anatomic preparations to enhance their appreciation. The comparison of the photographs with the diagrams also allows the user to appreciate the enormous wealth of anatomic information conveyed by photographic illustration but simply not possible with line drawings alone.

The preparations include regional dissections, illustrating the morphology of the various structures and their anatomic relations, specimens of anatomic systems and individual structures photographed against a plain background to show specific features. There are also a large number of cross sectional preparations arranged sequentially to provide extra information about spatial relationships at various bodily levels.

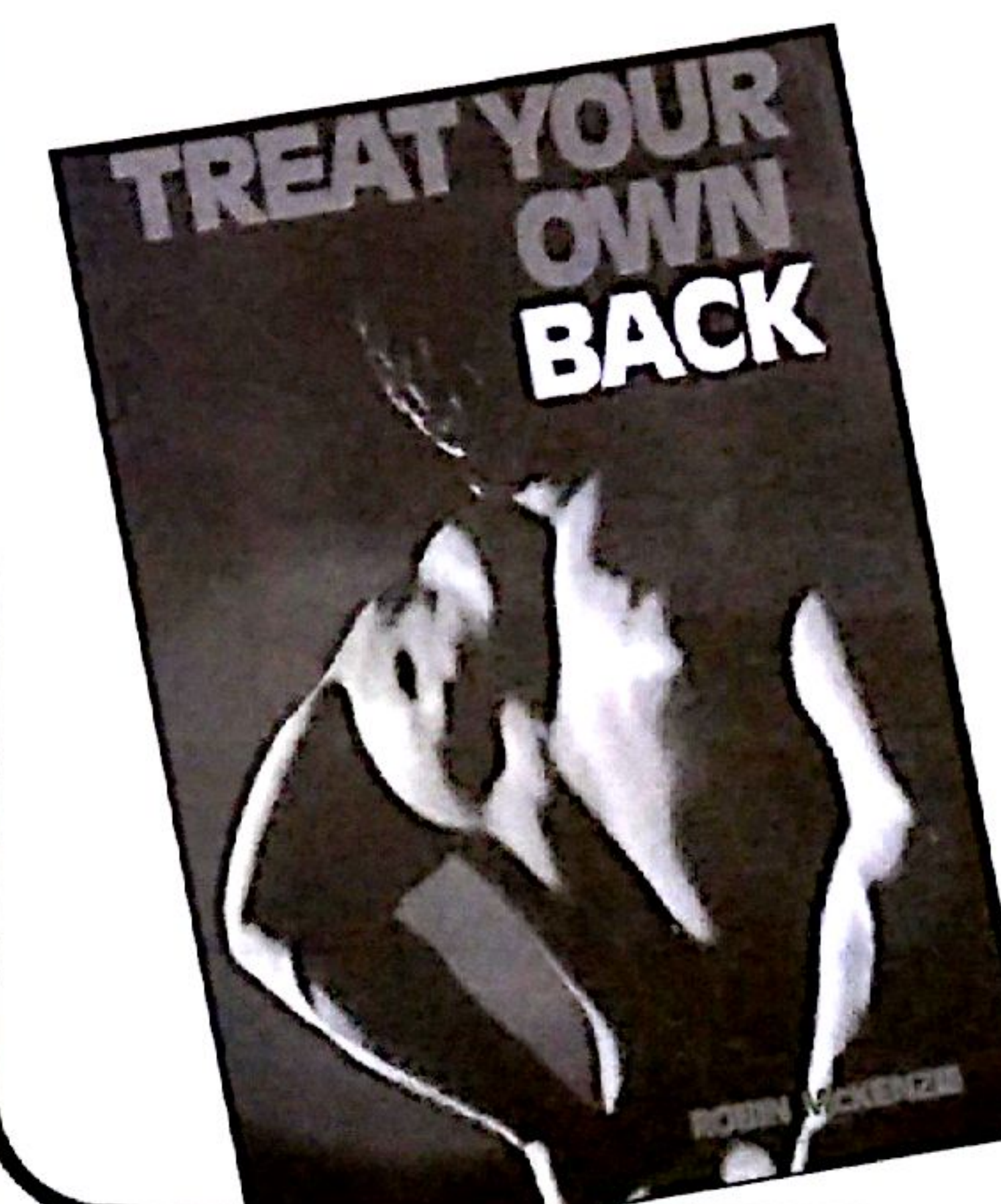
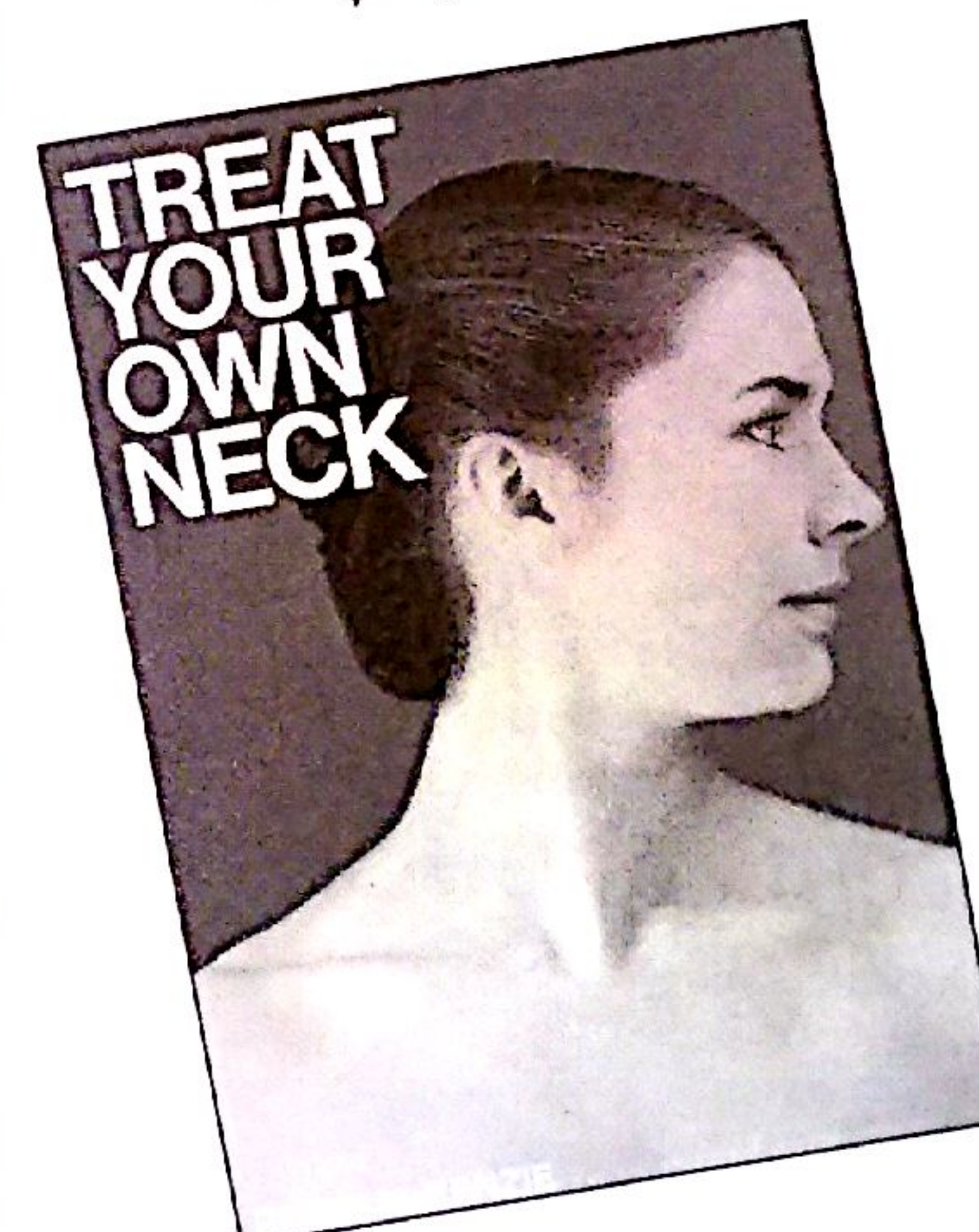
Special straining techniques are used selectively to highlight particular structures and to demonstrate relationships less obvious on colour photographs alone, such as the individual bones which make up the skull. In all cases the stained preparations are accompanied by photographs of unstained specimens so that the artificial can be compared with the natural.

Radiological studies provide further enhancement of the anatomic information presented. The atlas includes many C.T. and M.R. scans, placed in apposition to colour photographs of the same regions. Comparison of the images allows the user to develop deeper understanding both of the anatomy shown and of the imaging techniques themselves. Arteriograms, plain radiographs and electron micrographs are presented in a similar fashion and provide further nuances of understanding, particularly of smaller structures.

The concept of this work makes other atlases obsolete. The value of the photographic material far surpasses that of any other printed matter as a resource for the serious student of anatomy. The quality of the production gives the book an extra value as a work of art as well as of science and makes it a reference which every clinical practitioner will both want and need to own.

484pp. RRP \$130.00

W. King

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The 1994 Annual Combined Conference and Course of the AAMM and NZAMSM will be held in Queensland as follows

1 Conference and AGM(s)

Dates 22nd - 23rd October, 1994
Venue Sheraton Hotel, Brisbane
Theme The Scientific Basis for the Management of Acute Musculoskeletal Conditions'

Overseas Guest Speaker Dr Jiri Dvorak

2 Courses/Workshops

Dates 24th - 28th October, 1994
Venue Travelodge Hotel, Surfers Paradise
Theme 'Practical Office Management of Musculoskeletal Conditions'

Overseas Guest Speaker Dr Jiri Dvorak

This week will consist of many half and whole day sessions and several will be held concurrently. They will be offered at Beginners, Intermediate and Advanced levels.

Topics for these include




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 Diagnostics
 Procedures
 Therapies
 Research etc etc in any area relevant to the Musculoskeletal Medical Practitioner

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

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