



# THE CHIROPRACTIC REPORT

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## Chiropractic Management of Headache

### A. Introduction

1. Headache is the most frequent reason people seek medical advice<sup>1</sup> and is the primary complaint of about 10% of chiropractic patients.<sup>2,3</sup>

Headache may have a 'sinister' cause, such as accidental injury, a space-occupying lesion in the brain, or other disease process. However most headache is 'benign' - not linked to any specific disease or injury. Benign does not mean mild - symptoms may be constant and severe. Examples of benign headache are chronic headache, tension (muscle contraction) headache, migraine and cluster headache.

2. There is broad agreement in the health science community that most headache has more than one contributing cause - neurological, vascular, biomechanical, somatic, genetic, psychological and environmental. However it is here that agreement ends.

There is profound disagreement on the primary sources of pain, the mechanisms, classification, diagnosis and treatment. After a century of science relatively little is known. Many of the assumptions of the past 20 years are currently being challenged. Thus:

a) The clear distinctions between different types of headache set forth in the 1962 American Medical Association Ad Hoc Committee classification of headaches, upon which most medical practice and research was based for the next 20 years, are gone. This is seen in a new international classification recently established by the International Headache Society.<sup>4</sup> The former classification, for example, saw migraine headache caused by vascular disorders and tension headache by muscle contraction. The new classification admits there is no such distinction and that migraine headache "is sometimes gradually transformed into chronic tension headache".<sup>5</sup>

b) Reviewing current medical understanding of migraine in a work just published, Michigan neurologist Joel Saper observes: "The perspectives on migraine are changing rapidly as there has been a reconsideration of fundamental attitudes towards the headache problem ... the exact pathogenesis of migraine has yet to be established as differing views are held by a number of credible authorities."<sup>6</sup>

c) Otter Sjaastad MD, Norwegian neurologist and editor of the international journal of headache Cephalgia, has described the diagnostic confusion as "grave".<sup>7</sup>

20 years ago most medical specialists dealing with headache, and those in general practice, neither understood nor acknowledged the possibility that restricted motion in the musculature or joints of the neck (cervical spine) might be a potent source of headache - including what has traditionally been diagnosed as classical or common migraine.

Sjaastad now reports that most medical specialists studying migraine "accept that headache may arise in extramuscular structures in the neck".<sup>8</sup> Most, however, think it rare. He disagrees, and suggests:

- the symptoms of cervical headache and migraine may be almost identical
- the importance of cervical headache is not recognized
- most 'migraine' should probably be diagnosed as 'cervicogenic headache'.

d) At recent medical meetings one begins to see reports of successful management of a wide variety of headaches by manipulation. Milne reports a 98% success rate with 150 patients in immediately terminating current attacks of migraine by traction and cervical manipulation.<sup>9</sup>

3. The new medical interest in the role of the cervical spine in headache, which has yet to make any significant impact on medical practice, is consistent with the chiropractic model of treatment, and is thus watched by chiropractors with considerable interest. Initially on clinical results, but since the 1970s on the basis of more formal research evidence<sup>10,11,12,13</sup> (see para 11 below), the chiropractic profession has claimed to offer successful management of most benign headache without medication - principally through correcting cervical spine dysfunction with a range of manipulation techniques.

This report reviews the new IHS classification of headache, the chiropractic model of management - mechanisms, diagnosis and treatment, and current research.

### B. Medical Classification

4. The latest medical classification of headache, developed over three years by the

### Professional Notes

#### ABS Highlights

The American Back Society is leading the long overdue process of bringing together all professionals who treat spinal problems - so they may keep current on research and clinical developments in all disciplines, appreciate the particular skills of each other, and improve cooperation and overall quality in the management of spinal problems.

At the first ABS meeting in San Francisco 6 years ago there were 35 registrants, all orthopaedic surgeons. At the latest ABS meeting, the Fall Symposium December 6-8, 1990 again in San Francisco, there were almost 1,000 registrants. These represented all disciplines (general medical practice, orthopaedic medicine, orthopaedic surgery, physical medicine, psychiatry, neurology, neurosurgery, chiropractic, osteopathy, physical therapy, occupational therapy, nursing, etc) and included 180 chiropractors.

Noteworthy contributions included:

1. A provocative opening address by Course Chairman Scott Haldeman DC MD Ph.D. assessing likely developments in management of back pain during the next 10 years. Haldeman noted:

- The model of back pain caused by one anatomical lesion has now been rejected.
- Current models of pain are based on the disc, the posterior facet, neurology - neurogenic model (including structural change in peripheral nerves and central inhibition with chronic pain) and the reflex model ("largely ignored and undervalued"), soft tissue,

*continued on page 4*

Classification Committee of the International Headache Society chaired by Jes Olesen, Professor of Neurology, University of Copenhagen, was published in the journal *Cephalalgia* in 1988.<sup>4</sup>

The list of categories of headache occupies five pages, and the complete classification with diagnostic criteria, 93 pages. It is a formidable document. See Table 1 for the major headache classifications, an example of sub-categories under one heading (migraine), and descriptions of major categories of benign headache.

5. Comment on this IHS classification is:

a) It introduces new terminology:

- common migraine is 'migraine without aura' (MO).
- classical migraine is 'migraine with aura' (MA).
- muscle contraction headache is 'tension-type headache'.

b) The classification attempts to diagnose headache to a fourth ("4-digit") level e.g. migraine (1), with aura (2), with acute onset (3), with a certain number of defined diagnostic criteria (4).

c) However the IHS acknowledges that "primary use (of the classification) is for research". It will have little immediate impact on diagnosis.

"To classify diseases is always a difficult task ... the field of headache poses particular problems ... most fundamental is the scarcity of pathophysiological knowledge reflected in complete absence of laboratory tests which can be used as diagnostic criteria for any of the primary headache forms."<sup>14</sup>

Other problems acknowledged by the IHS are that a person may have two types of headache at the same time and that it is common for one type of headache to evolve to another. This may happen naturally or as the result of over-dependence on medication in treatment.

Thus sometimes migraine will convert into chronic tension-type headache, sometimes episodic tension-type headache will convert to chronic, and "in both instances over-use of drugs frequently plays a role in aggravating the disorder".<sup>15</sup>

d) Many medical experts challenge the basic concept of the classification - that there are essentially distinct types of headache with separate origin and cause - and propose a model for benign headache

based on severity of various common symptoms - the 'severity model'.<sup>16</sup> Muscle contraction headache and common and classical migraine are linked to one another on a severity scale.

e) It is interesting that the IHS classification goes further than previous medical classifications in recognizing headache referred from the neck or cervical spine. The diagnostic criteria, set forth in Table 2, now include methods from chiropractic diagnosis, such as palpation of movement abnormalities in the spinal joints and use of flexion/extension x-rays.

However the IHS, in still limiting cervical headache to a minor sub-category of referred pain, greatly undervalues the role of the cervical spine according to the chiropractic model of headache - today accepted by a growing number of medical experts.

### C. Chiropractic Model of Headache

6. Chiropractic has a significantly different emphasis on medicine in the explanation and management of benign headache (migraine, muscle contraction, cluster, etc). The chiropractic model, now supported by substantial research, is fully described

**Table 2**

#### 11.2.1 Cervical spine Diagnostic criteria:

- A. Pain localized to neck and occipital region. May project to forehead, orbital region, temples, vertex or ears.
- B. Pain is precipitated or aggravated by special neck movements or sustained neck posture.
- C. At least one of the following:
  1. Resistance to or limitation of passive neck movements
  2. Changes in neck muscle contour, texture, tone or response to active and passive stretching and contraction
  3. Abnormal tenderness of neck muscles
- D. Radiological examination reveals at least one of the following:
  1. Movement abnormalities in flexion/extension
  2. Abnormal posture
  3. Fractures, congenital abnormalities, bone tumours, rheumatoid arthritis or other distinct pathology (not spondylosis or osteochondrosis)

*Comment:* Cervical headaches are associated with movement abnormalities in cervical intervertebral segments. The disorder may be located in the joints or ligaments. The abnormal movement may occur in any component of intervertebral movement, and is manifest during either active or passive examination of the movement.

in a number of recent texts - including those by Gatterman<sup>17</sup> (best overview), Theisler<sup>18</sup> (focusing specifically on migraine) and Vernon<sup>19</sup> (the most thorough analysis of the evidence and proposed mechanisms). In summary, the contemporary chiropractic approach is:

a) Firstly there needs to be a careful differential diagnosis to establish whether the headache is benign or has a sinister cause - such as traumatic injury, a tumour, or vascular or neurological disease. In these circumstances there is referral for medical management.

b) Patients with benign headache - the great majority - have a symptom of pain which, like backache, is likely to have a number of contributing causes. These are genetic, psychological, neurological, vascular, biomechanical, environmental (e.g. sensitivity to certain foods) - and somatic, arising from the musculoskeletal system rather than the vascular system and other internal organs and tissues.

c) The somatic component, generally overlooked in traditional medical practice, is frequently decisive. This is the 'straw that breaks the camel's back'. It is the causative factor which, when superimposed on others, takes a person through the pain threshold to actually experiencing headache. Treatment directed at the somatic cause is frequently highly effective.

d) The specific somatic cause of importance is movement dysfunction (too much or too little) in the vertebrae of the cervical spine and associated muscles, ligaments and other tissues.

Accordingly chiropractors have traditionally spoken of 'vertebrogenic' (having origin in the structures of the spine) headache. European chiropractors formerly used the term 'vertebragenous'<sup>20</sup> headache and some, including medical researchers now active in this field, talk of 'cervicogenic' headache.

### Mechanisms

7. The cervical spine sits adjacent to the brain stem and head and, particularly in the upper cervical spine, is richly and diversely innervated. Blood supply and nerve supply to the head are intimately linked to spinal anatomy and function. The vertebrogenic model of headache suggests these different mechanisms of headache:

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## Table 1

### IHS Classification - Major Categories

1. Migraine
2. Tension-type headache
3. Cluster headache and chronic paroxysmal hemicrania
4. Miscellaneous headaches un-associated with structural lesion
5. Headache associated with head trauma
6. Headache associated with vascular disorders
7. Headache associated with non-vascular intracranial disorder
8. Headache associated with substances or their withdrawal
9. Headache associated with non-cephalic infection
10. Headache associated with metabolic disorder
11. Headache or facial pain associated with disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures.
12. Cranial neuralgias, nerve trunk pain and deafferentiation pain
13. Headache not classifiable.

### IHS Classification - Migraine

- 1.1 Migraine without aura
- 1.2 Migraine with aura
  - 1.2.1 Migraine with typical aura
  - 1.2.2 Migraine with prolonged aura
  - 1.2.3 Familial hemiplegic migraine
  - 1.2.4 Basilar migraine
  - 1.2.5 Migraine aura without headache
  - 1.2.6 Migraine with acute onset aura
- 1.3 Ophthalmoplegic migraine
- 1.4 Retinal migraine
- 1.5 Childhood periodic syndromes that may be precursors to or associated with migraine
  - 1.5.1 Benign paroxysmal vertigo of childhood
  - 1.5.2 Alternating hemiplegia of childhood
- 1.6 Complications of migraine
  - 1.6.1 Status migrainous
  - 1.6.2 Migrainous infarction
- 1.7 Migrainous disorder not fulfilling above criteria

## Descriptions of benign headache

(‘Benign’: headache not associated with any specific accidental injury or disease process.)

### Migraine Headache

a) Migraine without aura (MO - previously called common migraine).

Recurring headaches lasting 4 hours to 3 days typically:

- To one side of the head (unilateral)
- Throbbing or pulsating quality
- Moderate to severe intensity
- Aggravated by routine physical effort
- Associated with nausea and/or discomfort from light and sound

Regional blood flow is normal - it may be a change in blood composition that triggers the attack. “Exact neurological mechanisms remain unknown”.

b) Migraine with aura (MA - previously classical migraine). As above but with neurological symptoms - typically visual flashes and disturbances - localized to brain (cerebral cortex) or brain stem. It is established that regional blood flow is reduced before or coincident with the aura. Exact neurologic mechanisms are again unclear.

### Tension-type headache

(formerly muscle contraction ordinary stress psychogenic headache.)

Unlike migraine, pain is bilateral, pressing/tightening in quality, mild to moderate and does not worsen with routine activity. Nausea and aura are absent.

Exact mechanisms, and thus origins, of pain are not known. Contraction of cranial muscles (which are tender and display increased EMG activity) and psychological factors are frequently present. May be episodic (recurrent episodes lasting minutes to days) or chronic (present at least 15 days a month during the last six months).

### Cluster headaches

Unilateral and severe pain, lasting 15 minutes to 3 hours and occurring from 8 times a day to once every second day. Autonomic effects (i.e. disorders in functions controlled by the autonomic nervous system) experienced on the same side of the head as pain include watery eye, nasal congestion, eyelid swelling, and forehead and facial sweating.

### Main Article: continued from page 2

a) Referral of pain from joint dysfunction. Pain sensitive nerve fibers (nociceptors) are plentiful in the joint structures, especially the posterior facets. When activated they cause headache:

- i) Directly, via converging nerve pathways.
- ii) Indirectly, by inducing spasm in the paraspinal muscles which entraps and activates other nerve fibers.

b) Referral of pain from cervical muscle dysfunction (e.g. trigger points). This is similar to the above except that the muscle hypertonicity is not secondary to joint dysfunction but the primary problem.

(In both mechanisms described so far the cause of dysfunction may be a specific incident (as in whiplash injuries) or chronic postural strain (as in static loading of muscles and joints when the neck is fixed in a certain posture for long intervals - the dentist, typist, assembly-line worker, telephonist, driver, etc.).

c) Joint dysfunction can irritate important nerve structures (including nerve roots, sympathetic plexus and superior cervical ganglion) which:

- i) Disturbs the function of the autonomic nervous system - through a process of ‘facilitation’ (sustained abnormal reflex

psychosomatic factors and environment. "The spine is a neuromusculoskeletal organ subject to all the above influences."

- In research the 1990s will be a decade of refinement of existing ideas, rather than new ideas and techniques.
- Surgery, in which everyone seems to have his/her own technique, will become less invasive.
- Studies on cost-containment and cost-effectiveness will dominate the scene - "there is going to be a huge shake-out", and useless tests and treatment will not be tolerated.

2. David Cassidy reviewed the research on spinal manipulation, a treatment approach for back pain which has been "subjected to more scientific investigation than any other".

Of 25 controlled trials of spinal manipulative therapy, 21 have sufficient description for classification of technique into either mobilization (techniques that keep the joint within its passive range of motion) and manipulation (techniques that take a joint through the elastic barrier to the paraphysiological zone - inducing a greater range of motion and joint separation). The broad result of these trials is:

|              | Number of Trials | Beneficial Effect Reported | No Benefit Over Controls or Placebo |
|--------------|------------------|----------------------------|-------------------------------------|
| Mobilization | 7                | 4                          | 3                                   |
| Manipulation | 14               | 12.5                       | 1.5                                 |
| Total        | 21               | 16.5                       | 4.5                                 |

Cassidy then reviewed the results of the most thorough trial yet performed, published in the British Medical Journal and showing highly effective management of acute and chronic mechanical low-back pain by chiropractic

manipulation (*Br Med J* (1990) 300:1431-37), and concluded that there was now sound scientific evidence of the effectiveness of spinal manipulation for acute and chronic low-back pain.

3. Robert Wagon DC Ph.D reported on the new trial from Palmer College of Chiropractic, which has also shown long-term effectiveness in the treatment of chronic low-back pain by chiropractic manipulation. In this trial, yet to be published:

- 68 patients with chronic low-back pain were randomly assigned to 3 groups - Group 1 (chiropractic manipulation), Group 2 (sham manipulation consisting of light palpation and massage) and Group 3 (MD conservative care using analgesics, muscle relaxants and exercises).
- Treatment in Groups 1 and 2 was 3 times weekly for 2 weeks, then 1 treatment per week for 7 weeks - a total of 13 treatments in 9 weeks.
- Assessment was by questionnaire (modified Million and visual analog scale).
- Both the chiropractic and medical groups, but not the control group, showed significant improvement in functional impairment. Only the chiropractic group showed significant improvement in pain levels. Improvement was maintained at 2 year follow-up.

4. Phillip Greenman DO FFAO, Professor of Biomechanics, Michigan State University - College of Osteopathic Medicine and author of 'Principles of Manual Medicine' (Williams & Wilkins 1990), spoke on the potential complications of cervical manipulation. He noted:

- Cervical manipulation is "a safe procedure if you understand the biomechanics and keep out of rotation and extension".
- At C0/C1 you don't need much rotation to deal with the mechanics of the joint.
- At C1/C2 there is a unique component of rotation because of the convex-to-convex joint surfaces. The approach should be to "control rotation and manipulate in flexion."

5. Sanford Lazar MD, a San Francisco orthopaedic surgeon for over 30 years, explained how indications for surgery had been greatly reduced over the years and warned:

- "If the three important things in real estate are location, location and location, the three important things with back pain are history, history and history. The real sources of pain are most likely to become apparent on a complete picture from the patient."
- "Operate on the source of pain, not the films." One of the major pitfalls of MRI is that "we see more pathology than we know what to do with." This is likely not the source of pain.

6. Duane Saunders MS PT, a prominent physical therapist from Minnesota, observed:

- 40 years ago medical advice following wrist fracture, delivery of an infant, or surgery was lengthy immobilization and bed rest. In all of these fields medicine has learnt the value of early activity, both in the healing process and general rehabilitation - thus medical management has changed to early 'functional restoration'.
- 40 years ago medical management of back pain was also based on principles of rest rather than functional restoration - strangely it still is.
- Management of back pain through rest and natural remission may bring relief from pain. However this is likely to be temporary - the studies show a high rate of re- occurrence of back pain and disability within the first year.
- For most back injuries the sources of pain are:
  - poor posture
  - faulty body mechanics
  - stressful living
  - loss of strength and flexibility of muscles.

Functional restoration is the key to management, combined with patient education. One component of functional restoration must be work simulation - targeted at specific task performance.

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### Keynote speakers (confirmed)

#### Chiropractic

|                |           |                        |
|----------------|-----------|------------------------|
| Alan Breen     | England   | Clinical examination   |
| David Cassidy  | Canada    | Sacroiliac dysfunction |
| Lynton Giles   | Australia | Facet syndrome         |
| Scott Haldeman | U.S.A.    | Research trials        |
| Reed Phillips  | U.S.A.    | Chiropractic radiology |
| John Triano    | U.S.A.    | Biomechanics           |

#### Medical

|                  |           |  |
|------------------|-----------|--|
| Bjorn Rydevik    | Sweden    | Nerve compression                          |
| Akio Sato        | Japan     | Neurovisceral reflexes                     |
| Gunnar Andersson | U.S.A.    | Occupational back pain                     |
| Nicholas Bogduk  | Australia | Cervicogenic headache                      |
| Sam Wiesel       | U.S.A.    | Differential diagnosis of spinal disorders |

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activity or bombardment of the autonomic by the somatic nerves experiencing mechanical irritation).

ii) Thereby alters vascular function in the head (cerebrovascular tone) which is controlled by the autonomic nervous system.

iii) Once a certain threshold level is reached, because of sustained facilitation, pain signals and imbalance in the autonomic regulation, a headache is triggered.

(For a detailed neurophysiological analysis, including differing mechanisms when the mechanical dysfunction is primarily in the upper or lower cervical spine, see Vernon).<sup>21</sup>

### Diagnosis and treatment

8. Chiropractic diagnosis of benign headache emphasizes:

a) A detailed history - vital with headache, not only to exclude sinister pathology but also to identify other trigger factors and causes.

b) Manual palpation of the joints and associated tissues of the cervical and thoracic spine to identify movement restriction and reproduce pain. (It is important to understand that there may be clinically significant restriction in passive range of motion at specific vertebral joint levels even though the patient is experiencing no symptoms of pain or stiffness. See para 13).

c) Flexion/extension and lateral bending x-ray studies.

9. The spine, although divided into many segments, is one organ and functional unit. Dysfunction in the cervical spine may be secondary to dysfunction in the lumbar spine or sacroiliac joints. Wight DC, with considerable clinical and research experience, estimates that "approximately 5% of migraine patients require adjustment of (the sacroiliac joints) to recover fully".<sup>22</sup>

10. Treatment includes:

a) A diverse range of manual techniques to correct identified joint and muscle dysfunctions and relieve the altered neurophysiology and its effects. (These spinal functional lesions are known in chiropractic as 'subluxation' or 'the vertebral subluxation complex'.)

b) Dietary, postural and lifestyle counselling to address other factors identified by history. Psychological factors may require referral for further assessment or other specialist services such as biofeedback, counselling and medication, which may be given concurrent with chiropractic care.

11. A central part of chiropractic training and practice is a controlled, quick, low-depth form of manipulation called 'adjustment'. (The movement range is similar to self-cracking of finger joints).

With proper training and skill, and avoidance of undue extension/rotation and force, this is a safe and effective method of increasing range of passive joint motion, a position now supported by prominent medical authorities in Europe and North America.<sup>23</sup> It should not be attempted on the basis of part-time education or part-time practice.

### D. Research

12. There is now a considerable body of clinical research concerning the cervical spine and headache, reviewed well by Theisler<sup>18</sup> and Vernon.<sup>19</sup> Evidence of the effectiveness of chiropractic manipulation for conditions falling within the medical diagnostic criteria for classical and common migraine includes:

a) A number of clinical studies, reporting success rates (cure or marked improvement) between 72% and 90%. The best, a well-designed prospective study by Wight in 1978<sup>10</sup> comprised 87 consecutive patients and reported a success rate of 74.7%. Importantly:

• The success rate was maintained two years after treatment ended.

• The improvement rate applied equally to common and classical migraine, and for male and female patients.

b) The one controlled trial, performed by chiropractic and medical researchers in Australia in 1976, was funded by the Australian government to determine whether or not chiropractic adjustment provided an effective treatment for migraine. It found that it did.<sup>11</sup>

A follow-up study published two years later confirmed that the results were not a response to placebo or trial effects. 20 months later it was the patients who had improved during the trial who maintained their cure or improvement. Hall Ph.D, a medical statistician who later re-analyzed the Australian trial described it as "excellently executed" and "a socially important contribution to the literature relating to ... migraine".<sup>24</sup>

13. The above research addresses the issue of overall importance - outcome, whether the treatment is effective. There is now much research underway to test the mechanisms by which cervical spine dysfunction generates headache. For example, in a recent case study<sup>25</sup> Vernon and Gitelman DC report:

a) A patient experiencing chronic bilateral frontal headache.

b) Motion palpation evidence of joint dysfunction or subluxation ("a major fixation at C1/C2").

c) Objective evidence of muscle change (hypertonicity measured by pressure threshold algometry).

d) Measured relief of muscle hypertonicity, and apparently linked relief of headache (80% improvement on visual analog scale), following one chiropractic rotational manipulation of the atlas/axis joint and five minutes of rest.

This is the first published report from an ongoing prospective study.

14. Few in the medical world can approach diagnosis and treatment of cervical dysfunction through manual skills of palpation and manipulation. This is not a part of core medical training or any of the established medical specialties. However, medical researchers are testing the same cause of headache in an alternative way. Thus Sluijter et al<sup>26</sup> from Amsterdam report:

a) 20 patients with tension headache, no apparent neck discomfort, and normal cervical spine on conventional x-ray were examined for abnormal spinal function using sophisticated computer measurements from flexion/extension x-ray studies (giving angle of movement of each vertebra, elasticity of disc, and horizontal displacement per angle of rotation).

b) Eight patients had normal mobility patterns. For all of them, injection of a nerve block (xylocain) at all cervical spine levels from C3-C7 had no effect on the headache.

c) The other 12 had abnormal movement at one or more levels of the cervical spine. The nerve block was injected at these levels - it brought immediate relief from headache to all 12.

d) These patients would normally have gone to traditional medical care, involving medication together with advice on stress and psychological factors.

However the researchers conclude the headache was in fact a response to abnormal function in the cervical spine and that many patients "labelled with a diagnosis of tension headache" may have "headache originating from functional abnormalities of the cervical spine at a specific level".

The researchers, with their medical background, recommend treatment by rhizotomy - severing the relevant nerves to

remove the pain pathway. The more conservative chiropractic approach would be to use manipulative techniques to correct the dysfunction as a first line of management.

### E. Conclusion

15. As Oleson, Chairman, IHS Classification Committee, rightly observes "the field of headache research has been sprawling with attempts to explain everything in a single hypothesis but ... such hypotheses are not likely to be valid".<sup>27</sup> There are many causes for headache, diagnosis is difficult and – as in most areas of life – it is wise to avoid speaking with certainty.

However one thing seems clear. It is greatly in the interest of patients to have available both medical and chiropractic perspectives and skills in the management of headache. Each complement the other and current research suggests the role of the cervical spine has been seriously undervalued.

16. It is fair to say that traditional medical management of headache, placing heavy reliance on medication, has had significant harmful effects. Granella MD et al<sup>28</sup> report from Italy that:

- "the most frequent reason for the abuse of analgesics appears to be a headache".
- "the largest single factor favouring the transformation of episodic headache into a chronic headache (in our study) was drug abuse".

Recent estimates in the U.S. are:<sup>29</sup>

- In medical practice at least 50% of headache patients are given no specific diagnosis, and are prescribed medication simply for pain relief.
- Less than 50% of patients report reduction in symptoms with drug therapy.
- With migraine, despite the range of medication available to answer supposed biomechanical, vascular, and neurological

causes, "probably only one third" of patients receive sustained benefits. Increasing amounts of analgesics are used to obtain partial relief.

- this abuse is "now so widespread that it has become a true social problem".

17. There seems to be a very sound case for placing greater emphasis on the chiropractic vertebrogenic model of headache. Initial management should often involve both medical practitioner and chiropractor, and be:

- interim use of medication for pain relief;
- assessment and physical correction of any spinal dysfunction;
- counselling and exercise directed at reducing lifestyle and psychological factors.

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