

BACK PAIN AND SCIATICA FACT SHEET:

BACK PAIN:

In considering low back pain traditionally it is divided to acute and chronic. With the distinction set arbitrarily at 3 month after which acute back pain is considered to be chronic. However, also if one would experience recurrent episodes of back pain at regular intervals we would also consider this as a chronic recurrent back pain.

The most fundamental step in treating lower back pain as with any other disease condition or pathology is correct diagnosis. It is at this very 1st step where confusion and difficulty starts when dealing with back pain and therefore leading to poor selection of patients for specific treatment and subsequently poor results.

Scientific community even as recently as 2004 (European guidelines) in the guidelines addressing low back pain chooses a simple and practical classification dividing acute low back pain into 3 categories with some groups of:

1. Serious spinal pathology, the so-called “red flags”, consist of traumatic fractures, pathological fractures, infection, cauda equina syndrome, and intra-abdominal pathologies presenting as low back pain. This category of patients fortunately formed a very small proportion of the patient’s suffering or presenting with lower back pain.
2. Nerve root/radicular pain: Those patients with sciatica and or neurological deficit to herniated disc. Again this group of patients form a minor proportion of patients presenting with back pain
3. The non-specific low back pain group. This group consist of “everyone else”, whom are packaged in the “black box” of those with low back pain without specific diagnosis.

Although this classification is simple and seemingly practical, unfortunately, firstly there is no robust clinical data supporting the clinical usefulness of this classification in particular with regards to the non-specific low back pain category and therefore does not help clinician managing the patients suffering with back pain to a great deal. This is more frustrating as the expert bodies only state that the natural history of acute back pain is benign and therefore allowing a variety of non-specific management for “non-specific problem”. This is due to the fact that the specific pathologies in group 1 and group 2 form only minor proportion of the patients presenting with back pain while at least 80% of patients presenting with low back pain are categorised in group 3. The other problem that is created by lack of specific diagnosis or methods of diagnosis for that matter, is variability of management and treatment methods available, as well as variety of opinions as to the cause of one’s complaint of back pain.

The only diagnostic method that is so far found to have some reliable scientific evidence for “sub-categorising” patients in the black box of “non-specific low back pain” category, is MECHANICAL DIAGNOSIS AND THERAPY method developed by Robin McKenzie since early 1980s. This is based on the identifying patients who is pain, either low back pain or back pain and sciatica, rapidly improves or diminishes in certain direction of movement.

According to research performed utilising this method in randomised trials the percentage of patients with acute non-specific back pain who would have “reversible back pain” is as high as 70-90%, and those with chronic non-specific back pain as high as 50% have reversible back pain.

So what is the significance of reversibility according to advocates of mechanical diagnosis and therapy?

Significance of identification of patients with reversible back pain either acute or chronic is that certain physical therapy would lead to improvement and resolution of the symptoms and potentially maintain them free symptoms in the long-term.

As surgeons and clinicians we would like to identify specific anatomical structures involved in particular symptomatology. Based on clinical research showing patient’s with reversible back pain forming majority of patients previously categorised on the non-specific back pain the following potential pain generators have been discussed in explanation of the source of pain in this group of patients:

1. It is thought to be unlikely this group of patients suffering with soft tissue damage (muscle or ligament) to be a cause of this type of pain as it is unlikely that the pain from this source be rapidly reversible with certain movements. One would expect certain movements when there is soft tissue injury be more painful than others but generally without significant improvement in particular direction. The most obvious example of this is in patients after lumbar surgery were most movements are painful with perhaps the most comfortable position being in non-weightbearing position. This type of pain is expected to settle within a few weeks.
2. It is also thought that inflammation although is, list dated as explanation of back or neck pain is likely to be the correct explanation for those with ongoing symptoms which can be improved rapidly in certain directions.
3. The 3rd possibility and the most plausible explanation based on mechanical diagnosis and therapy theory, is pain arising from the joints of the spine including facet joints and intervertebral discs.

Most patients presenting with acute back pain or in those who present with chronic back pain when exploring their initial presentation sometime in the past, described either :

- a sudden movement to 1 direction including bending or sudden twisting especially if associated with carrying heavy objects. (Typically being remembered as being stuck in one position.)
- Being in sustained position for a prolonged period
- Or history of performing repetitive movements for prolonged time. This could include being in sitting and slouched position or being in flex position for example when gardening, vacuuming, or performing repetitive lifting action such as shoveling.

These actions of thought to increase the intradiscal pressure with compression of the nucleus towards the opposite side of the disc where the pressure is applied, and over the course of time, if not occurred by one action such as sudden bending, we will lead to gradual weakness of the annulus with subsequent bulge leading to herniation and at the final stage extruded and of nucleus material through the weakened annulus. Further more anatomically the annulus is thinner posterolaterally which is the location of majority of disc herniations and adjacent to the traversing nerve root or through into the exit foramina.

NATURAL HISTORY OF LOW BACK PAIN:

Overall unfortunately contrary to the main stream belief of those involved in management of back pain including physiotherapists chiropractors physicians and surgeons the natural history is not as benign as we

are led to believe. It is generally believed that 90% of patients presenting with acute low back pain will spontaneously improve and therefore they have favorable prognosis.

One of the original papers quoted as supporting evidence for high rate of self-limiting non-specific low back pain and recovery was published in 1966 by Dillane et al in the British medical Journal. Unfortunately this paper had a major flaw in that it was based on "care-seeking" data, where the detail was extracted from patient's consultation with the general practitioner's in UK. When patients with low back pain did not follow up with further complaints of low back pain it was assumed that they had recovered.

In 1994 extensive literature review of natural history data by Korff in fact reported that 69% of acute and 82% of non-acute patients were still experiencing back pain one year later after the presentation. He further published his followup data were to be 3% of those contacted one year after their lower back pain onset were still experiencing back pain of at least moderate intensity, 15% were still having severe back pain, and 20-25% continued to report substantial activity limitations.

In 1998 Croft et al. reported results of interviews with 490 low back pain patients' at 3, 6, and 12 months after 1st presentation for their pain. These results similarly showed only 21% had complete recovery at 3 months while 90% had stopped seeking medical care by this time. At 12 months 75% of those surveyed indicated they have still not fully functional all without symptoms.

Unfortunately the 2004 European acute low back pain guidelines still quoting expected recovery by 6 weeks in 90% of patients with low back pain based on 1966 study of Dillane.

Another important characteristic of low back pain is the risk of recurrence which is expected and demonstrated in several studies to be as high as 75%. This is an important fact that patient's need to be made aware of in order to make them conscious on need for ongoing management of their condition even if the pain has completely settled. This would be through making better health decisions including healthier lifestyle, maintaining correct posture, and avoiding type of activities with high risk of leading to further facet or disc injury as described above. The significant issue as shown by researches is that the recurrences are often progressively worse in terms of length of time and or severity.

SCIATICA:

EPIDEMIOLOGY:

Sciatica is relatively common condition with life incidents reported between 13-40%. The corresponding annual incidents of an episode of sciatica ranges from 1-5%.

Cross-sectional study of 2946 women and 2727 men showed neither gender nor body mass had an influence on the development of sciatica. Body mass however does have an influence on low back pain.

Other risk factors for development of sciatica are **body height** (mostly significant in males between 50-64)

Pregnancy is not found to be a risk factor for development of sciatica

incidence of sciatica increases with age. It is rarely seen below 20 years of age but the incidence peaks in 50th decade and declines thereafter. odds ratio of an episode of sciatica increases by 1.4 every additional 10 years of age up to the age of 64.

Majority of disc herniations seen at L4/L5 or L5/S1 but with increasing age relatively increased incidence of herniation are seen at L3/L4 and even at L2/L3

There is genetic disposition found for development of sciatica. This study of 9365 pairs of adult twins identified the lifetime incidence of sciatica in mono-zygotic and dizygotic twin is as 17.7% and 12% respectively. With estimated heritability of 20.8% for those reporting sciatica and 10.6% for those admitted to hospital with sciatica.

Recreational activities such as walking and jogging may influence incidence of sciatica. Interestingly regular walking was shown to almost double the incidence of sciatica in a group of 2077 workers who were pain free at baseline. In case of joggers, regular joggers who were pain free at baseline and decrease incidence of sciatica while those with previous history of sciatica were more likely to experience more episodes.

Occupational activities also have been found to increased risk of sciatica. For example Carpenter is with a large ratio of 1.7%, machine operator's with large ratio of 1.6 compared with sedentary office workers.

Other occupational risk factors are shown to include awkward working position, working in a flexed or twisted trunk position (OR 2. 6), or working with hand above shoulder level (motor mechanics, Painters), also driving is positively associated with sciatica or lumbar disc herniation.

Smoking has been linked with sciatica.