

## In response to Louis Gifford

By: Stephen May, Julie Shepherd, Kevin Turner, Fiona Farmer, Steve Young, Jenny Ross, Phil Commons.

### Overview

Gifford's editorial is entitled *Therapist and patient fear of bending: Does the McKenzie approach – need a shift?* His argument, which would best be described as a diatribe, is that McKenzie therapists fear flexion and pass on this fear to patients, generating fear-avoidance. He also denigrates treatment using extension movements as this 'frequently' makes patients worse. He says that flexion should not be avoided and that all movement should be encouraged, but then proposes a position that sounds like fear-avoidance of extension. The editorial is lengthy, anecdotal and virtually un-referenced. We do not wish to reproduce it in full, but would like to make some response to certain of Gifford's unsubstantiated statements (indicated in the text by bullet points).

- *To avoid bending may be part of creating a greater problem than is necessary.....'therapist fear of flexion leads to patient fear of flexion'.*

Mechanical diagnosis and therapy introduces flexion when appropriate. This is however an important point and therapists should be aware of being too cautious about re-introducing flexion, which is a necessary part of normal function. Appropriate communication both verbal and non-verbal is essential here. Therapists should be mindful of their language and instructions when discussing flexion with patients, especially in the context of peripheralisation. Fear avoidance is not desirable in either therapists or patients.

Gifford however has thrown the mechanical baby out with the bath water in his embrace of the psychosocial concept of pain. Although we must never ignore the impact that psychological factors have on pain perception, we also should not forget that much back pain is 'mechanical'. It is 'activity related' (Spitzer et al 1987), or it is simple backache "mechanical" in nature 'varying with activity' (CSAG 1994, AHCP 1994).

Several studies demonstrate that aggravating and relieving factors vary between patients and that a common pattern is aggravation with flexion activities, such as bending and sitting (Biering-Sorensen 1983, Boissonnault & Di Fabio 1996, Stankovic & Johnell 1990, van Deursen 2002). Interestingly virtually none of these patients reported that these activities made them better, whereas extended activity such as walking did make a good percentage better.

All movement is not the same and several studies show that mechanical spine pain often has a directional preference for certain movement, and is often aggravated by the opposite movement (Donelson et al 1990, 1991, Snook et al 1998, Williams et al 1991, Spratt et al 1993, Kopp et al 1986, Alexander et al 1992, Abdulwahab & Sabbahi 2000). In general these studies show that more patients have directional

preference for extension than flexion – though some prefer flexion; a large number also prefer a degree of lateral movement.

As is very typical of detractors, who have a minimal understanding of Mechanical Diagnosis and Therapy (MDT), Gifford solely equates McKenzie therapy with extension exercises. He clearly has little knowledge of MDT. He talks about 'going slowly and carefully over time – graded exposure', as in deed all of us recognise that extension sometimes must be regained slowly over time. Equally there are times when extension is not appropriate.

We could also give a wealth of anecdotal evidence of patients who worsened when tested with flexion, to improve once they were started on an extension programme.

- Following an anecdotal comment from an anaesthetist at an IASP conference about PTs forcibly extending patients, who then develop radiculopathy, there is the comment, *that this type of management and its outcome is common*.
- Later Gifford returns to the same theme, reiterating the 'frequent' occurrence of exacerbation or precipitation of nerve root pain with repeated extension exercises.

There is no documented evidence to support these statements. Extension exercises have been used in multiple trials, and even if some of these trials have not shown an advantage none have reported the onset of radicular symptoms (Kendall & Jenkins 1968, Davies *et al* 1979, Zylbergold & Piper 1981, Buswell 1982, Ponte *et al* 1984, Stankovic & Johnell 1990, 1995, Spratt *et al* 1993, Elnaggar *et al* 1991, Delitto *et al* 1993, Dettori *et al* 1995, Malmivaara *et al* 1995, Cherkin *et al* 1998, Underwood & Morgan 1998). Often in these studies there is poor operational definition of the exercise and no attempt to assess for suitability, but the issue here is not if they work, but that they 'commonly make people worse'. There is not one report in these studies of such an effect. In some studies extension exercises are used to relieve patients of sciatica due to disc herniation (Kopp *et al* 1986, Alexander 1992, Nwuga & Nwuga 1985). That is precisely the nerve root pain that Gifford states extension causes.

- *Is the centralisation phenomenon – that relies on instantaneous changes in location of pain and changes in pain intensity something that we should really trust? – I don't think so, but many do.* We are then provided with an anecdotal story of Geoff, which is meant to convince us that centralisation is meaningless.

We will ignore the fact that his definition is wrong. Centralisation is widely documented. It is the focus of multiple studies, and alluded to in others (Donelson *et al*. 1990; Karas *et al*. 1997; Long 1995; Sufka *et al*. 1998; Werneke *et al* 1999; Werneke & Hart 2001, Fritz *et al*. 2000; Kilby *et al*. 1990, Donelson *et al*. 1997, Donelson *et al*. 1991; Williams *et al*. 1991, Delitto *et al* 1993; Erhard *et al* 1994).

Anecdotally we are told we should not trust this symptom response because of Geoff. The literature indicates centralisation is reliably interpreted (Werneke *et al* 1999, Fritz *et al*. 2000; Kilby *et al*. 1990; Razmjou *et al* 2000, Kilpikoski *et al* 2002, Sufka *et al* 1998), and consistently associated with good prognosis (Werneke *et al*

1999; Werneke & Hart 2001, Sufka et al 1998, Donelson et al. 1990; Karas et al. 1997; Long 1995).

- *It seems to me that all studies that have investigated the centralisation effect have been done by highly trained McKenzie therapists- who must be biased...*

Certainly many studies have been done by people who are cognisant of the clinical value of this symptom response, and able to interpret it from a clinically experienced base. That it is appropriate that individuals who are knowledgeable in an area should be involved in its research is born out by some of the research into exercise therapy, which often lacks clinical utility. If those who have an interest in an area are biased and inappropriate researchers much medical knowledge would have to be condemned for the same reason. Several studies have been done by researchers who have little or no experience of the McKenzie system, and even some who are frequently its critics (Karas et al. 1997, Sufka et al. 1998, Fritz et al. 2000; Kilby et al. 1990, Delitto et al 1993; Erhard et al 1994).

- *Perhaps patients and their pain are simply being bamboozled into moving in the direction desired....*

Are we really meant to take this argument seriously? He may be able to bamboozle his readers with his anecdotal diatribe, but this is hardly a serious argument to counter the documented evidence.

- *Lordosis and extending compromises and compresses neural tissue in the spine, and an example is given of a physiotherapist who developed cauda equina syndrome after repeatedly extending / lateral flexing on a combined movement course. Flexion is said to be a 'nerve friendly' posture.*

Yes clearly extension reduces the spinal and intervertebral canal diameter. This is of particular relevance when sciatica is the product of stenosis when activities of extension worsen patients. This is due to narrowing and increased epidural pressure that occurs in extension (Penning & Wilmsink 1987, Penning 1992, Willen *et al* 1997, Takahashi *et al* 1995a, 1995b).

Spinal stenosis being due to compression occurs without nerve tension signs, in the older patient, with spontaneous resolution less likely; there is pain during walking, and relief during sitting (Spencer 1990).

The commonest cause of sciatica in younger populations is disc herniations (Spitzer et al 1987). Flexion also has well known effects in the circumstances of disc herniations. The majority of disc herniations that cause sciatica or cauda equina syndrome are postero-central or postero-lateral. The majority of all displacements occur in the sagittal plane, implicating flexion/extension movements both in their pathogenesis and treatment (Ninomiya & Muro 1992). In contrast to spinal stenosis, symptoms from a disc herniation are due to tension or compression on the nerve root, the patient is younger, with nerve tension signs, is made worse by flexion, and better with extension (Spencer 1990).

With flexion the intervertebral disc is compressed anteriorly and the posterior annulus is stretched. Flexion causes a posterior displacement of the nucleus pulposus (Shah *et al* 1978, Krag *et al* 1987, Shepperd *et al* 1990, Shepperd 1995, Schnebel *et al* 1988, Beattie *et al* 1994, Fennell *et al* 1996, Brault *et al* 1997, Edmondston *et al* 2000).

Cadaver studies have demonstrated the effects of flexion loading. When sustained or combined with other forces this has caused radial fissures, heightened tensile stresses, annular failure, and even disc extrusion (Adams & Hutton 1983, Wilder *et al* 1988, Hedman & Fernie 1997, Hickey & Hukins 1980, Natarajan & Andersson 1994, Shirazi-Adl 1989, 1994, Lu *et al* 1996, Adams & Hutton 1982, 1983, 1985a, Gordan *et al* 1991, McNally *et al* 1993). Of particular relevance is a paper that showed that flexion increased compressive forces acting on the L5 root, and extension decreased it (Schnebel *et al* 1989).

- *Peripheralisation may be normal for some back pain patients.*

Is Gifford now arguing that if pain peripheralises and sciatica develops this is 'normal'? Are we to encourage the development of leg symptoms? The literature shows that leg pain or nerve root pain tends to be equated with more disability, slower return to work, poorer prognosis, and a risk factor for future episodes. Therefore is something to be avoided if possible (LeClaire *et al* 1997, Andersson *et al* 1983, Hagen & Thune 1998, Goertz 1990, Lanier & Stockton 1988, Chavannes *et al* 1986, Cherkin 1996, Carey *et al* 2000, Thomas *et al* 1999, Smedley *et al* 1998, Muller *et al* 1999).

- *There is no evidence that I know of which has found that flexion or extension movements are any more detrimental/helpful than any other movement of the spine.*

Exactly, it depends when it is applied. But why earlier was Gifford arguing that extension is so harmful?

Other physical therapy groups have considered the important area of sub-classification for non-specific back pain. These researchers are wholly independent of the McKenzie approach, but the consistent category that is used is directional preference to movement or mobilisation.

Sikorski (1985) talks about flexion and extension programmes (50% of patient cohort). Fritz (Fritz & George 2000) and Delitto (*et al* 1995) refer to mobilisation, extension and flexion syndrome and lateral shift group (52% of patient cohort). Sahrman (*et al* 2000) refers to groups whose symptoms increase / decrease with flexion, extension or rotation. Wilson *et al* (1999) discuss groups who are worse with flexion, better with extension, and worse with extension, better with flexion (81% of their cohort, of whom 64% were made worse by flexion).

Interesting that these different groups have independently come to recognise the value of selected, direction-specific and appropriate movement or mobilisation as more important than non-specific generalised exercise.

Louis Gifford has raised some important points that are worthy of reflection. No one of us has all the answers in the management of musculo-skeletal disorders. We all have our successes and failures and should learn from each one. As therapists we would not continue to use an approach that didn't work, or made lots of our patients worse. It is a shame that rather than continue to debate in the reasonable and thoughtful tone employed by Peter Ward, Gifford has chosen to use diatribe and rant.

The McKenzie approach used well is the best, effective, simple, cost effective, enabling and empowering management strategy out there. We will no doubt be accused of being biased.....

Stephen May, Julie Shepherd, Kevin Turner, Fiona Farmer, Steve Young, Jenny Ross, Phil Commons.

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