

There is No Such Thing as “Non-Specific Back Pain”

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Non-specific back pain, ideopathic back pain and lumbosacral strain, are terms used to label patients with back pain. There is no shortage of studies performed on groups that have non-specific back pain but they lack helpful recommendations for a pained individual. These studies found that everything, or nothing, worked in terms of treatment approaches because back pain is not a homogenous condition. It has many causes and treatment approaches. If there are two patients with different causes of pain, one approach may be very effective for one but may hurt the other. On average there is no effect, but as individuals there may be a massive effect when the treatment is matched to the specific disorder. Proper assessment can categorize people with back pain

into specific groups to identify specific prevention and rehabilitation approaches. Trying to diagnose painful back disorders based on anatomical structure is possible but difficult. Some studies have shown specific tissues cause pain in individuals using local anesthesia approaches but these don't have a high concordance with troublesome “features” seen on MRI or CT scans. Conversely, features seen in medical images associated with pathology and pain are often seen in asymptomatic workers. Even if the structure causing pain is known, this knowledge provides little guidance in reaching a cure. Back pain is almost always exacerbated by a particular motion, posture or load. Motions, postures or loads that exacerbate the back pain together with those that are tolerated can be identified. A prevention plan can be designed to eliminate the specific causes (motions, postures and loads identified through provocative testing – known as pain triggers) and a rehabilitation plan can be designed to enhance tolerance to these triggers. Back patients can therefore be categorized based on their intolerances. For example, workers with “spine flexion bending intolerance” will probably be exacerbated by sitting, tying shoes etc., yet very high load tolerance is found if the spine is not bent but kept in a neutral posture. Assessment to properly classify back pain sufferers in terms of painful motions, postures, and loads, provides clear clinical direction and eliminates the unhelpful non-diagnosis of “non-specific back pain.”

Key Messages

- A thorough assessment will identify the cause of pain in terms of offending motions, postures and loads.
- Studies on non-specific back pain are not helpful just as studies on non-specific head pain would not be helpful, nor tolerated.
- A specific diagnosis will guide each person on what to not do and what to do.

What causes back troubles?

There are many causes of back troubles with the strongest scientific literature evidence for mechanical causes. These include loads on the back tissues that exceed their tolerance in terms of load magnitude, repetition and duration. For example, the spinal discs have a fatigue life for the number of bends that they can withstand before they fail. Yet this relationship is modulated by variables such as hydration (time of day), the corresponding load at the time of the bending motion, and the direction of the bending axis, to name a few. If the individual continues to bend the painful disc (i.e. continue to flexion-stretch their back), they will most likely experience worse symptoms – or a recurrent aggravated situation. The same mechanism is exacerbated by sitting – here the spine (particularly the lowest lumbar disc) is flexion bent. Strangely, these patients are sometimes told to pull their knees to their chest to obtain relief. This activates the stretch receptors in the back-extensor muscles resulting in short term analgesia for about 15 minutes, but this bending has caused further damage and/or sensitization of the underlying pain mechanism. While these types of patients are relieved by frequent posture change, and even fast walking, they simply cannot tolerate sitting. Sitting posture can be assisted with lumbar support to prevent lumbar flexion. Special exercises designed to combat the cumulative stresses from sitting are also usually helpful. Encoding the “hip hinge” movement pattern to replace the spine bending pattern is important. Testing and classification of the back pain sufferer results in better prevention and rehabilitation approaches. There are many other sub-categories where the specific strategies to avoid the cause and create a pain-free foundation will differ. Interestingly, ergonomic job layout change and design may be helpful but the worker must also enhance their use of back sparing body mechanics.

Assessment and Provocative testing: Motions, Postures, Loads

The typical orthopaedic exam determines the range of spine motion, some neurological measures such as strength of reflexes, and some qualitative measures of muscle strength. These measures provide little guidance for designing prevention and rehabilitation programs. In a study where we tracked back pain patients in a pain clinic¹, scores of patients obtained from the assessment had very little relation as to who recovered and returned to work.

Asymmetries of both strength and movement (particularly in the hips) have been shown to be associated with, and predictive of, back troubles. Imbalance in torso muscle endurance around the torso has been shown to be predictive of future back disorders.

Thus, correction of asymmetries with corrective and therapeutic exercise should be the first stage of any rehabilitation program. However, provocative testing to intentionally provoke discomfort is essential in determining which postures, motions, and loads are exacerbating the pain and which ones are well tolerated. Simply having a pained patient sit upright on a stool and pull upright on the stool seat pan to compress the spine usually causes no discomfort. However, slouching with the spine causing flexion, and repeating the pull often causes pain and identifies the person who is intolerant of flexion². Avoidance of spine flexion removes the cause, and specific exercises performed with a neutral spine have been shown to be most effective for this category of back pain.

Implications for the Prevention of MSD

- Remove cause of the disorder; wind down central sensitization, allow tissue to heal
- Put corrective and therapeutic exercise in place
- Stabilize and mobilize targeted areas
- Enhance endurance, strength and some power generating ability at the hips and shoulders if occupational demand is present

What every patient/worker needs to know

Every back pained worker needs to know the following to facilitate their recovery: a) Exam results – their current scores give context to the future goals; b) Natural history and prognosis – there is no evidence that back disorders last into retirement and in fact are often addressed with appropriate classification and treatment plans; c) Causes of pain – the way one moves and activates muscles can eliminate pain; d) What they must avoid – removing the cause of the disorders this allows the therapy to be more effective via two mechanisms; e) Pain sensitivity is reduced by winding down central sensitization; f) Allowing the tissue to heal; g) Recovery plan – a progression that begins by addressing movement disorders with corrective and therapeutic exercise, stabilizing those body areas needing stabilization and mobilizing those which need mobilization, enhancing endurance so that joint sparing movement patterns can be repeated even when fatigued, building some strength and possibly some power generating ability at the hips and shoulders if the occupational demand is present³ are key to building a foundation for pain-free activity.

Implications of the tests

Provocative testing, when combined with movement screens for joint symmetry of motion, strength, and endurance, underpins a powerful classification for back pained individuals. Classification enhances the therapy plan and identifies what to avoid. The process is continued throughout the recovery to define tolerable levels of load in specific postures and movements so that the “dosage” of therapeutic exercise can be tuned to the individual.

Conclusion

There is no such thing as “non-specific back pain” - there are only those individuals who have not had a thorough assessment. There should be no further studies of people with non-specific back pain, as they do not provide any insight into prevention or treatment programs for the individual. Classification of back pained workers into subcategories based in intolerance to specific motions, postures and loads directs targeted prevention and treatment.

References

1. Parks KA, Crichton KS, Goldford RJ, McGill SM (2003). On the validity of ratings of impairment for low back disorders. *SPINE*. 28(4):380-384.
2. McGill, S.M., Back Mechanic: The step-by-step McGill method to fix back pain. (backfitpro.com), 2015.
3. McGill, S.M. Low back disorders: Evidence based prevention and rehabilitation, Human Kinetics Publishers, Champaign, IL, U.S.A., 2002. ISBN 0-7360-4241-5, Third Edition, 2016

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