



Lumbago Amongst Geriatric Population Incidence, Risk Factors, Safe Work Practices and Postural Guidance for Caregivers

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Abstract

The article gives brief insight to the etiology, incidence and risk factors of Back pain and back injuries among the geriatric population group.

The key highlights include the risk factors, chronicity of back pain, possible sources of Back injuries within and outside one's body.

A professional team approach of Senior Physician, Orthopedician, Physical therapist, Nutritionist and patient caregivers holds utmost importance in managing the back pain.

It is a self-explanatory and thorough guide to alarming signs, prevention, relief, safe work postures for both patients and caregivers.

Keywords: Lumbago; Back Injury; Safe work Practice; Awkward Posture; Strengthening; Rehabilitation; Lifestyle

Introduction

- It has been studied that up to 80% of general population suffer with back pain at least once in their life time.
- A significant number of senior population suffers debilitating back pain that restricts mobility and leads to chronic back pain.
- The significance of this article is to highlight the importance of early identification and quick intervention to prevent acute lumbago into chronic and therefore into an injury with subsequent consequences.
- The main aim is to imbibe certain lifestyle modifications by the patient.
- There are important pointers like avoiding going into awkward postures, patient handling and self-care goals for the core caregiving team.

An observation and thorough assessment were carried out pre-treatment and post treatment in selected patients for back pain. It was evaluated that the patients who managed as walk ins soon after the acute episode were able to achieve results in lesser time.

A brief insight to the safety parameters, use of efficient body mechanics, counselling and regular review was stressed upon.

The results of the given studies emphasize early intervention in managing the back pain patients. The identification of susceptible age group by the medical professional holds utmost importance. A brief history of the occupation and current lifestyle compiled together gives evidence upon the risk factors of having an acute or chronic back pain in perspective individual.

A safe work practice in day-to-day life, following good postural techniques, maintaining healthy routine is needed both for patient as well as the caregiving team.

Etiology of back pain

Back pain is one of the commonest ailments of general population. It has been estimated that approximately 65 – 80% individuals will experience back pain in their lifetime.

The causes of back injury are multifactorial. Physical and psychosocial factors, social demographic distinctiveness, genetics, morphologic characteristics, occupation and mechanical factors, habits, lifestyle and most importantly age of the individual.

Role of a Health worker-Doctor/Physiotherapist/Nurse in imparting special care to the elderly patient

The elderly or geriatric population is the most vulnerable age group of our society. Your approach towards an elderly patient may demand many changes on everyday basis.

For a geriatric patient, a back pain or a back injury may not just be a physical disorder. It may come along with many other issues like emotional, social, and psychological. The patient may be striving hard to live with the pain and as a specialist he may demand your attention, time, and guidance much more than any other client.

Hence, the geriatric patients are to be dealt with utmost care and patients and must be motivated during whatever time they spend with you for rehabilitation. Here the line of management should be general wellbeing, relaxation, over all body strengthening, back conditioning, taking preventive measures to avoid tripping or falling and stay in a safe/secured environment.

Common sources of back pain

What is back pain?

Back pain or “Lumbago” is a pain originating primarily from back being insidious or sudden in nature. The back pain many times seem to have exacerbated with one single event but the real cause is often the collective outcome of repeated tasks, awkward Postures, unplanned lifting, twisting, and straining the back.

The back pain is broadly classified as short term and long-term pain. The short-term back pain is more common, lasts for about 3 months and subsides with suitable interventions. This is generally a result of overuse or back muscles/ligament strain.

The long-term pain is the one which does not subside in three months and continues to trouble the patient for many months or years and can even lead to disability.

Another classification of back pain in terms of presentation of symptoms is

- Mechanical Pain
- Referred Pain
- Radicular Pain

Possible sources of back injuries within the body

There are certain causes of back injury where the source of injury arises from within the body. These are:

- Disc protrusion.
- Protective muscle spasms.
- Tensed/tight muscles.

- Spondylolisthesis.
- Spinal Stenosis.
- Kidney stones.
- Endometriosis
- Scoliosis
- Potts spine
- Tumour
- Stress – Postural
- Fibromyalgia

Sources of back injury located outside the body

- Impact
- A fall
- Fracture
- Accident
- Work related stress
- Dysfunction
- Disuse and lack of mobility
- Smoking

How does an ignored back pain result in a back injury?

An undiagnosed, untreated, and unattended back pain can lead to a potential back injury. This, in progression may further leave the patient in a state of permanent damage or even a life-threatening condition.

We often tend to neglect or carry our routine activities with back already aching. It is a provoking signal given by our body and must be taken seriously.

Therefore, to ensure that the back does not pull you into the zone of permanent disability, STOP and consult the doctor before the symptoms worsen.

Common causes of back pain and back injuries

Back Injuries are one of the common and leading causes of work-related injuries. A suddenly appearing back pain might possibly be the result of numerous micro-injuries in the back. The primary reason why back injuries take place is that our lumbar spine is connected to pelvis where there is most weight bearing and body movement.

This is the place where we tend to put most pressure while different tasks like bending, twisting, managing heavy loads etc. which leads a back injury.

The various causes of back injuries are as following

- **Dysfunction:** Any kind of hampering, non- functioning, or malfunctioning of the normal back muscles with that of spine may cause a back injury.

- **Force:** Force is the amount of excessive pressure borne by the back when the individual puts an extra effort beyond his normal capacity to lift, move or reposition an object. This causes immense strain to the soft tissues as well as to the lumbar vertebrae and highly predisposes back to a state of injury.
- **Repetitions:** Same movements performed again and again at a stretch or over a period can potentially injure the back.
- **Awkward Positions:** It could be life threatening or a state of permanent debility if there is injury to the back while the individual attempts to perform a task such as heavy weight lifting while the body is twisted, bent, or stooped. As a result of this, the individual may tear the short ligaments, soft tissues or even herniate the discs and hence take extremely long time to recover.
- **Postural Faults:** Improper posture while at rest or sitting at poorly designed working area can also cause injury to the back.
- **Abuse/Trauma:** A significant fall with excruciating back pain is closely related to having a back injury. This could be an accident, a slip in the washroom, slipping on any hard surface like ice or a road.
- **Bladder or bowel control:** In case of TIA- transient ischemic attacks, whiplash injuries, specific injury to cauda equina, there is loss of bladder control or bowel control. Here, the patient needs to be taken to a hospital or to a specialist.
- **Other signs:** These signs are the ones where patient may not always correlate to his back pain and may not even tell you. But as a therapist, you must keep a track of any such signs coming up during your training or treatment. These are - Low grade/high grade fever, abdominal pain, Nausea, muscle wasting, weakness, and excessive sweating.
- **Lack of improvement:** If your patient does not seem to be improving at all after 2-3 weeks and you notice that there is no apparent difference in the back health then the issue must be addressed to the concerned specialist.

Analysis as a healthcare worker – why are older patients at risk of back pain

Older individuals, men, and women both while already struggling with the emotional, mental, and physical challenges inevitably put their spine to high risks of injuries. The changes in the bone tissue, demineralization, osteopenia, osteoporosis, fragmentation of articular cartilage, friction between the small joints, reduced disc spaces etc are all the events which take place in a slow but progressive manner with aging process. The skin, tendons, ligaments, muscles, and bones become fragile and extremely sensitive to external contact stresses and are thus highly prone to soft tissue injury or even a fracture even with lightest fall, slip or a trip. Thus, important measures and extra caution must be taken while treating an elderly patient along with educating the patient about his own safety parameters.

Back pain-prevention and relief

Why stay active?

Quite common and sometimes a harmful myth is that all activities must be avoided when one is experiencing back pain. Most of the patients feel that an activity may not only increase the back pain but can also worsen the state of injury.

For lot of back problems, gentle and light activities help alleviating the pain and aides in speedy healing. Gradual activity and stretching may reduce chances of future back pain and reduce likelihood of re injury. However, before starting any new physical exercise, one must take the consent of the consulting physician.

General principles

Stretching and strengthening exercises are used to redress whatever imbalance is present, their ultimate purpose being to restore normal movement patterns. When performing these exercises, it is very important that strain is not imposed on another area

Alarming signs of back injury and immediate management

Your patient may or may not always take back pain seriously. Some patients by nature have tendency to tolerate varying levels of pain and leave it to heal by itself instead of consulting a specialist. It is your responsibility to not only educate your own patients about the consequences of pain but also make them and family aware of certain alarming signs or 'red flags' when they must rush to nearby emergency care.

- **Causality:** If a patient comes to you with unexplained back pain which arose immediately after a fall/thrust/road traffic accident/sudden jerk/twisting/hit by a heavy object etc, you must immediately immobilize the patient and refer to emergency care.
- **Any visible specific injury:** Any inflammation, haematoma, open wound, sharp injury, bleeding etc must be taken care of by emergency specialist.
- **Shooting pain:** If your patient complains of a sharp stabbing pain that runs down his legs accompanied by tingling or numbness/loss of sensation, he must be taken to a hospital for diagnostic tests and further management as this could be related to disc and nerves.
- If the patient complains of exacerbating pain, so much so that he cannot even move with your/family member's help then he should better seek a consultant's advice.
- **Major sensory loss:** Check if your patient feels numb at feet, leg, groin, or rectal area, then an injury to deeper nerve roots is expected and hence you must help patient seek emergency care.

of the spine. Above all, the therapist must be able to identify and prescribe correct form of stretching techniques to provide quick relief to the patient.

Role of strengthening exercises for back pain relief

The numerous movements we perform during the day, often repetitively, are not considered to be exercises because they are not performed for the reasons of strength or health. When a patient is asked to carry out an exercise, he should realize that the intention is for it to have a beneficial effect on his movements during the rest of the day, not just while he is doing the exercise.

The general principles of strengthening exercises are as follows

- Exercises should be performed smoothly and rhythmically.
- Exercises involving flexion and extension should not be given together in one session until the effect of one movement has been assessed except when exercises are given for generalised stiffness.
- Focus on all exercises and avoid distractions.
- Most Importantly – Never hold your breath.
- The effect of each exercise should be assessed at a follow-up appointment.
- The therapist must consider the reason for prescribing exercises and find out if the patient is already doing any.

Strong muscles are essential to maintain the integrity of a healthy back. Weak muscles are subjected to more injuries and a difficult and late recovery.

Posture-for a healthy back

Good Posture is the attitude a person assumes, using the minimum amount of muscular effort, and at the same time protecting the supporting structures against trauma.

There are considerable variations between individuals in the amount of muscular effort used when performing identical tasks. Some people use a degree of muscular effort which is out of all proportion to the end it achieves. In habitually tensed or rigid postures, the muscles exert unnecessarily high pressures over the joints and may well precipitate early degenerative changes in them.

Conversely, a common cause of ligament strain is a faulty posture which involves the use of hardly any muscle work at all: Instead of using his postural muscles for support the person (frequently hyper mobile) maintains the posture 'hanging on his ligaments'.

Prolonged asymmetrical postures may also lead to structural changes by causing fibroblasts in the muscles to multiply along the lines of stress and produce more collagen. These extra collagen fibres take up space in the connective tissue of the muscle and start to encroach on the space normally occupied by nerves, blood, and lymphatic vessels. The muscle loses some elasticity and may become painful when required to do work especially if used statically. In long term, the collagen begins to replace the active fibres of the muscle.

Correct spinal balance and posture is a prerequisite to efficient use of the limbs. Postural deviations such as the forward head posture and the lordotic low back may have far reaching consequences on the other joints such as shoulders, temporomandibular complex, hips, knees, and feet.

Postural sensation is dependent on joint, cutaneous and myotatic (muscle spindle) mechanoreceptors, of which there is a particularly abundant supply in the upper cervical spine. Degenerative diseases for instance, the apophyseal joints, impairs postural and kinesthetic sensations. The ideal posture, faulty posture, and ways to correct them are considered in the following pages.

Safe work practices

To lessen the chances of back injuries at work, it is of prime importance that one finds out and avoids the possible risk factors that may contribute to injury. The chances of back injury are almost increased twice when following things occur in combination of each other

- Awkward Posture
- Overexertion
- Fatigue
- Repetitions

How to avoid and reduce going in an awkward posture?

- Avoid any stressful activity when the back is already in twisted position or bent forwards.
- Do not repeat twisting, bending, or reaching out to objects.
- Do not bend forwards to lift.
- The work height can be changed so that the back can be held in neutral position.
- The materials can be well stored at the level of waist so that one does not have to flex the lumbar spine to lift an object.
- Use efficient man handling devices such as carts.
- Implement good use of body mechanics by bending the knees instead of back to lift anything.

- To move materials, move your feet instead of twisting yourself.
- Ask for assistance or the work can be divided to reduce the load.
- Maintain spine in neutral position and keep postural awareness when bending, twisting etc for long periods of time.

How to reduce overexertion

- Make use of material handling devices.
- Divide the load for safer transfers.
- Rather than pulling or lifting a material: PUSH.
- Ask for help or support from the co-worker instead of bearing the entire load by you.

How to reduce fatigue

- Adopt and make use of alternate tasks or postures that use different muscle groups such as standing, sitting, or walking around.
- Take time out and stretch yourself. Take a break.
- Break standing tasks with seated position.

How to reduce injury from repetitions?

- Take time and divide tasks.
- Change posture frequently.
- Relax and take time out for yourself.
- Make use of material handling devices.

Lifestyle modifications for back Injury prevention

Lifestyle modifications in general can be summed up as follows

- Use of firm mattress for lying down, necessary modifications can be done.
- Alter and divide your everyday activities.
- Practice good posture and keep reminding yourself of postural awareness – Do not slouch
- Definitely follow an exercise regime.
- Lose weight
- Quit habits of smoking and alcohol.
- Modify your environment: Includes workspace, attire, general modifications at home.
- Stress Management: Practice relaxation, tai-chi or yoga techniques and lot of deep breathing to calm you down.
- Get enough sleep.
- Make use of assistive devices like walking stick, door knob handles etc which can make an activity easier.
- Keep objects at home within reach.
- Keep shifting your body weight from one leg to another to break the static posture pattern.

Consequences of back pain and rehabilitation in elderly people

Old age group are highly at risk of back injury. A trip, a fall, unwanted obstacles in the way, loss of balance etc. trigger the back injury chances. Apart from this, visual impairment, eyesight weakness, hearing loss etc. make the family members even more attentive about the elderly person at home. Most accidents, falls etc. occur when the elderly person is left unattended or is alone.

The rehabilitation and recovery take unusual time for an elderly gentleman. This accounts for the general old age-related problems, weakness, lack of attentiveness, lack of patience, inability to do transfers from bed to chair, inability to use the toilet when injured. They need an expert supervision like nursing care to attend to basic needs and aid.

Issues like any present medical history like hypertension, diabetes also resist the line of management to due to drug interference. Associated conditions like chipping, tearing of fragile skin, development of pressure sores, skin maceration from moisture, abdominal discomfort, inability to defecate, use of urinary catheter and any other infection, most commonly urinary tract infection or upper respiratory tract infection also hinder in the recovery and are extremely bothersome to the patient [1-31].

Individual work practices-patient handling and home care by caregivers

Guidelines and useful tips for good body mechanics and patient handling

- Patient or resident should be assessed prior to lifting or moving.
- Reduce or eliminate the need of manually lifting or moving the patient.
- Make use of an assistive device or equipment which is apt and accurate for the activity to be carried out. For example, if the patient is to be lifted from bed to another, then a whole-body lifting device can be used; sit to stand can be done using a stand-assist device with good grip.
- Get help from patient or attendant by providing them very clear and simple instructions along with adequate time to respond.
- Know your limits and do not exceed them.
- Ask for coworker's help whenever possible.
- Use team effort. Choose adequately trained staff with similar understanding of proper technique and timing for the activity.
- Plan the activity mentally before executing. Prepare well, the routes of travel. Hurdles, obstructions and clear out paths.

- Modify chair, beds, and other surfaces so that the work, equipment, and supplies are closed and placed at correct height (e.g., between waist and shoulders).
- Make sure that the brakes are held firmly on to the beds, gurneys, wheel chairs etc.
- Use upright and neutral working body postures.
- Use wide balanced stance
- Bend your legs and not the back.
- Always face the patient while moving or lifting.
- Move the patient toward you and not away from you.
- Never twist when turning. Instead, pick up the feet and pivot your whole body in the direction of move.

Tips for providing home health care.

- Stopping falls: If a fall occurs during home service, do not attempt to stop it abruptly. Instead, guide, slow down and lower the patient towards floor while trying to maintain a neutral body posture.
- Ask for help from patient’s family or friends.
- Provide suggestions for layout of bedrooms and other areas according to your requirement and patient’s ease.
- Follow correct body mechanics.
- Maintain clear spaces so that trip or slipping hazard is prevented.
- Suggest about the need and benefit of desirable equipment like gait belts, transfer devices, adjustable beds, shower-toilet chair combinations, extendable hand tools for showering etc

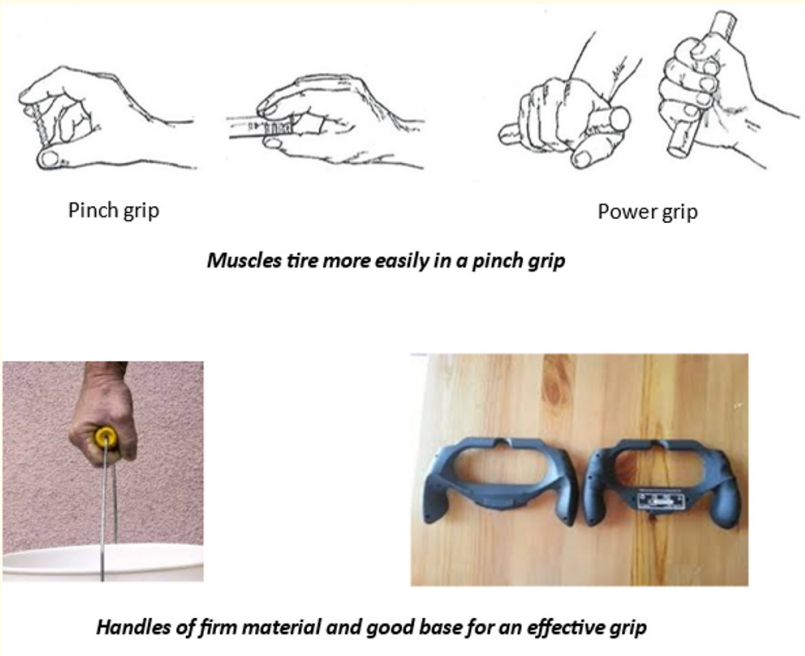


Figure 1

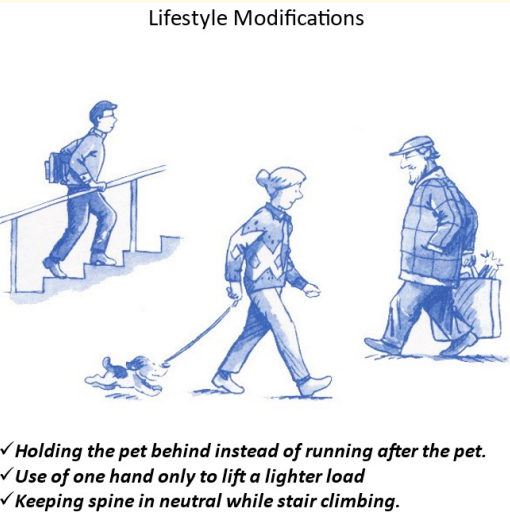


Figure 2

Preventive measures for the elderly



Use of walking stick for balance, use of walking frame for wider base of support and Walking on a non – slippery surface to prevent falls .

Figure 3



Other Modifications

Figure 4



Figure 5



Figure 6

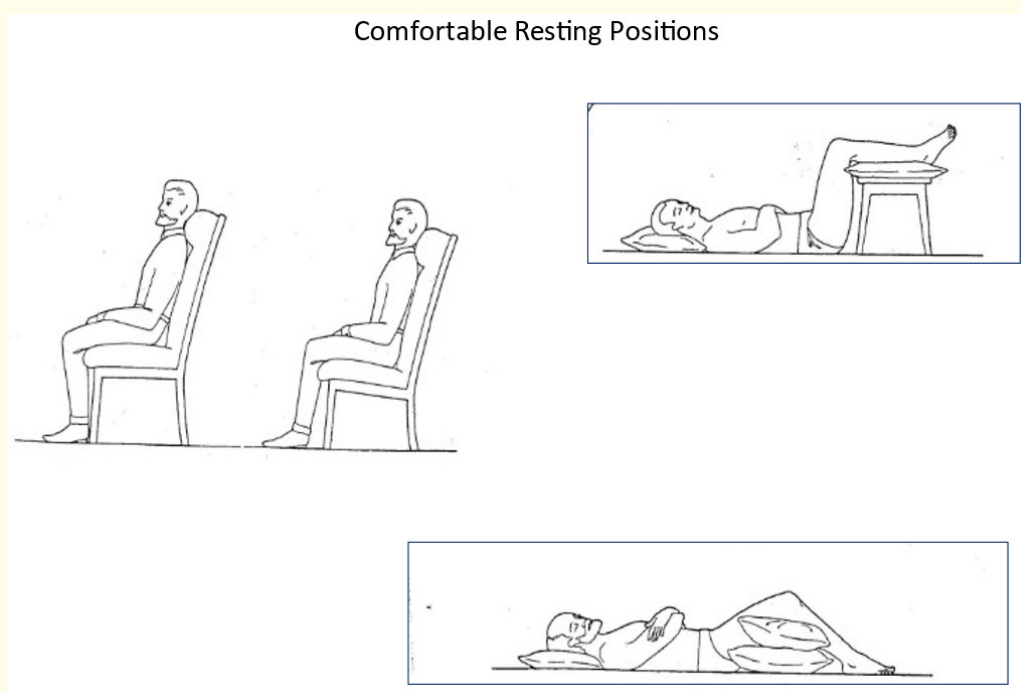


Figure 7

Conclusion

Early diagnosis and early intervention have been found to be effective in management of acute back pain. Frequent follow ups with physician, safe home environment to prevent tripping and falling, certain lifestyle modifications complement non-recurrence of pain and gives long lasting results.

Conflict of interest

I declare no financial interest.

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