

Mechanical low back pain: Prevention

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Citation

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Abstract

Mechanical low back pain is a common illness. It has been estimated as one of the most important disabilities in the working population.

The objectives of the present work are to study the importance of the prevention of this entity, the necessity to know the working conditions and the activities of daily living (ADL) and also the importance of the patients' follow up.

The authors reviewed the risk factors of the unspecific low back pain described in the literature, as well as preventive measures and activities of daily living influence, control measures and follow up.

The importance of working conditions, ADL, back support and shoes modification were established. Besides follow up and control of the diseases, rehabilitation program, complications and assessment related to backache were also determined.

INTRODUCTION

Mechanical or unspecific low back pain, Lumbar pain and backache is one of the most common illnesses that could affect human beings, it has been estimated as one of the most important disabilities in the working population⁽¹⁾.

Mechanical low back pain consists of unspecific injury of lumbar column. It could be related to other causes of lumbar pain, although in most of the cases the aetiology is unknown, that is why mechanical backache could represent the 85% among the patients reported with this problem ^(1,2,3).

Low back pain will always represent a problem, due to lumbar column anatomy position and the posture during gait and standing position⁽⁴⁾.

Mechanical backache affects, 60- 90% of the population at any time of their lives ^(1,2).

The purpose of this paper is to show the importance of the prevention of this entity, the necessity to know the working conditions and the activities of daily living and also the importance of the patients' follow up.

METHOD

The authors reviewed the risk factors of the mechanical lumbar pain described in the literature, as well as preventive measures and activities of the daily living influence, furthermore control measures and follow-up related to this

entity.

RESULTS

The bio-mechanical considerations show that relative immobilisation of lumbosacral joint demands a big effort in that area, thus a weight over the III lumbar disk increases for times when the patient is standing and decreases when he reclines his back, on the other hand this weight goes up, six times in standing position with the back forwards⁽³⁾.

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Epidemiology & laboratory studies show the awareness of the risk factors. These are classified into three groups, individual, occupational and psychosocial factors ^(1,5).

Risk factors for mechanical low back pain:

1. Individual factors.

- Age
- Sex
- Anthropometric measures

- Patient's general conditions
- Low back pain references
- Habits
- Other individual factors (Radiology disorders, deformities, pregnancies).

2. Occupational factors.

- General.
- Dynamic weight.
- Resting weight.
- Vibrations.
- Other occupational factors (Resting time, working time, aid possibilities and period of time within the profession).

3. Psychosocial factors.

The preventive measures of unspecific lumbar pain will act over the risk factors that are why the measures at work have been classified into four groups (1,4,6,7).

Preventive measures for mechanical backache at work:

1. Training and education

- Workers' training.
- Safe way for heavy lifting.
- Patients' general condition and strength.
- Back school.
- Manager's
- Doctors' education.

2. Ergonomic work design.

- Material management.
- Postures.
- Work space design.
- Body vibration.

3. Worker selection.

- Medical exams.
- Patients' general conditions and strength.
- Job rating programs.

4. Other.

- Programs to quit smoking.
- Programs to lose weight.

TRAINING AND EDUCATION

The adequate teaching and training of the patient in a safe way for heavy lifting helps to prevent mechanical lumbar pain. There are three aspects that could cause lumbar pain; weight higher than 45kg, heavy lifting with the back bent and the distance between the objects and the patient has been considered, on the other hand, managers and doctors should be familiar with mechanical backache, in order to prevent it and thus reduce the high cost of that entity(1,4,5).

ERGONOMIC WORK DESIGN

It is another measure that includes, the prevention of weights' lifting with rotation and flexion of the back, the use of chairs without backward, keeping postures with flexion and rotation of the column. Vibration must be also considered. It has not been determined whether it produces spinal injury or muscular fatigue (1,5,6).

DISCUSSION

This report provides information with regard to preventive measures. This is a controversial issue but all agree on the importance of the patients' instruction.

Recommendations to prevent mechanical backache when, doing activities of daily living (ADL):

1. Avoid lifting a weight heavier than 45kg.
2. Avoid carrying a weight with the arms' extended to the front of the body; objects should be carried in the back(3,8,9).
3. Avoid weights lifting with rotation and flexion of the column (3,9).
4. Lift the objects with the knees bent and keep it attached to your body (1,3).

5. Avoid postures with flexion and rotation of the back (1,4,10).
6. Modify your posture (5,10).
7. Use a table under the mattress and sleep in supine and side line position (3,8).
8. Use objects with handles for adequate manipulation (1).
9. Avoid sitting on the anterior part of the bench, the back should be on the back part of the chair (8).
10. Use arms support on the chairs (3,9).
11. Treat stress (1,11).
12. Avoid travelling very long distances by car train or motorcycle (12).
13. Wear low heeled shoes with flexible and corrugated sole, besides posterior heel will be closed in order to (9):
15. Correct body alignment.
16. Help mechanical function.
17. Prevent accidents.

1. The back support should be worn when (13).
3. Lifting heavy weight objects.
4. Riding horses.
5. Driving heavy weight vehicles.
6. Using equipments that produce vibrations.

1. The object that you want to lift should pass through the knees, if not, don't lift it (1,3).
2. The chairs will have the bench at the level of the knees and it will be slightly bent down and back part of the chair should be high (6,8).
3. If the patient drives the bench part of the chair, it should be near the steering wheel (8).

Mechanical backache could relate to particular disease and it requires and adequate control measures and follows up. Among the diseases the following should be mentioned, HBP, heart disease, diabetes rheumatoid illnesses and

malnutrition. Also, a periodic evaluation of the rehabilitation results by, means of the observation of the achievement, of the rehabilitation program was verified. In addition to this the implementation of the adequate relationships with educational, working institutions, besides physically disabled associations, cultural, sports and recreation center were also studied. The control of the unspecific lumbar pain by means of, prevention of complication and the correct evaluation by psychiatrists, psychologists and physiatrists was also determined (14).

Always remember:

1. Mechanical low back pain prevention requires knowing the working conditions and sometimes modifying them.
2. It is necessary to teach the way to carry out A.D.L.
3. The use of back support and shoes modification should be considered as a preventive measure.
4. To carry out an adequate follow up and control of the diseases, rehabilitation program, complications and evaluation related to unspecific backache.

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