

## Chapter 1 : Low Back Pain Fact Sheet | National Institute of Neurological Disorders and Stroke

*The Health and Safety Executive estimates that there were , cases of work-related back problems in and that some million working days were lost due to work-related back pain at an average of 13 working days lost per sufferer.*

Back pain is the single leading cause of disability in the world. In the US, four out of every five people experience back pain at some point in their life. In the UK, back pain is one of the most common reasons for visits to the doctor , and missed work. But there is a potentially easy way to prevent this problem: Our new research has found that exercises from the ancient Indian practice can have very positive benefits for back problems. Our findings suggest that yoga programmes consisting of stretching, breathing, and relaxation methods can reduce sickness absence due to back pain and musculoskeletal conditions. But very little research has been done which looks into the benefits of implementing workplace programmes, like we did. The staff were randomly assigned to either a yoga group or an education group. The yoga group received a total of eight 60 minute yoga sessions, once a week for eight weeks. In addition to this, the yoga participants were given a DVD and a poster for home practice. They were invited to practice yoga at home for ten minutes a day for six months. The education group meanwhile received two instructional booklets for how to manage back pain and reduce stress at work. Yoga has already been proven to ease back pain. To start each session, there was a series of gentle warm-up movements, followed by eight stretches to release tension from the shoulders and hips. Then participants did four back care postures to develop suppleness in the spine, and improve posture. This was completed with relaxation techniques to create an overall feeling of positive health and well-being. After eight weeks, the results showed that most yoga participants had larger reductions in back pain compared to the education group. After six months, employee staff records showed that the yoga participants had 20 times less sick leave due to musculoskeletal conditions including back pain than the education group. We also found that the yoga participants visited health professionals for back pain only half as often as education participants during the six month study. Those who improved the most were participants who also practised yoga at home for an average of 60 minutes or more each week. Ten minutes or more a day of home practice was associated with doubling the reduction in back pain, and many participants noted that it helped them to better manage stress too. Gains in productivity In the US, about a quarter of all major employers deliver some form of meditation or yoga, but it has yet to be taken up so widely in the UK, or elsewhere in Europe. Preventing back pain makes economic sense all round. Yoga seems not only good for employees and employers, but also for the economy as well. With more and more research confirming the health benefits of yoga , the National Institute for Health and Care Excellence NICE in the UK now recommends stretching, strengthening and yoga exercises as the first step in managing low back pain. Public Health England also advises yoga classes in the workplace. Since our initial work with the NHS proved to be such a success, the Dru Yoga healthy back programme used in the study has been delivered to staff at Merseyside Police, Great Ormond Street Hospital, the Institute of Chartered Accountants, Siemens, Barclays, Santander and many other private and public organisations. We now hope that many more will take up yoga to improve the health and well-being of their employees.

### Chapter 2 : Lumbar Back Belts in the Workplace

*Back pain at work: Preventing pain and injury. Heavy lifting, repetitive movements and sitting at a desk all day can take a toll on your back. Get the facts about back pain at work and how to prevent it.*

You might also like these other newsletters: Please enter a valid email address Sign up Oops! Please enter a valid email address Oops! Please select a newsletter We respect your privacy. Besides providing the benefits of a regular paycheck, working can be very important to people living with chronic pain and dealing with chronic pain management. Remaining on the job is a tremendous boost to the self-esteem of people with chronic pain. The challenges of work and the social interactions that take place on the job may even serve to distract you from your pain. Research has found that those who return to work enjoy greater success in their pain management. A recent survey found that one of every four working people in the United States experiences chronic pain – an increase of nearly 40 percent from a decade earlier, yet nearly 9 out of 10 people living with chronic pain choose to remain on the job rather than stay home. Nearly all said only severe pain would keep them home from work. Unfortunately, pain can keep you from being an effective employee. That same survey found that about half of chronic pain patients who remain in the workplace engage in "presenteeism" – they are present at work, but their chronic pain sometimes or often prevents them from performing their job. Manage Pain in the Workplace Pain management on the job is possible, but requires that employees with chronic pain take a proactive approach to the challenges they face. Effective coping skills include: Talk to your human resources department about accommodations that could help minimize your pain and maximize your productivity. If you feel comfortable, talk with your boss and co-workers about your pain so they can understand and possibly assist in your pain management practices. Say no when you need to. Use regular breaks as a way to bring your pain management practices into the workplace. If getting up and stretching helps your chronic pain, be sure to do so. Some people find that taking a few minutes to meditate in a quiet place helps them manage pain. Others squeeze in a short walk during lunch to gain the benefits of additional exercise. On or off the job, you can help your pain management efforts by eating well and exercising. Inquire about any wellness programs offered by your employer; these can be a valuable source of information about healthy living. And be sure to stay on top of taking your prescribed pain medications. Examine your work area for ways to minimize pain and make you more comfortable. Ergonomic tools like special office chairs, hand rests, foot rests, keyboard trays, and telephone headsets can be tremendously helpful, and many employers will provide these items for you, especially if they understand the benefits. Ask your doctor about new ways to deal with your chronic pain and if sessions with an occupational therapist could help you make on-the-job pain management strategies more effective. A therapist also can provide exercises and coping skills tailored to your particular ailment. Staying at or returning to work can be a helpful component of pain management. By following certain strategies, you can be more productive and experience less pain while benefiting from being around other people on the job.

## Chapter 3 : Yoga in the workplace can reduce back pain and sickness absence

*Back pain is one of the most common work-related injuries and is often caused by ordinary work activities such as sitting in an office chair or heavy lifting. Applying ergonomic principles - the study of the workplace as it relates to the worker - can help prevent work-related back pain and back injury and help maintain a healthy back.*

The Working Group further emphasizes that back belts do not mitigate the hazards to workers posed by repeated lifting, pushing, pulling, twisting, or bending. Marovino reviews the current status of lumbar belts in the workplace and presents the latest thinking regarding their use. Dileo, OMS IV There are few topics in occupational medicine that can stimulate more controversy and debate than the utility of lumbar belt use in the workplace. Over the years researchers have attempted to study the putative benefits of these lumbar supports since affirmatory evidence of positive results could have far reaching implications in employer policy making. Back injuries have been the leading cause of disability in the United States for people younger than 45 years of age, and have been the most expensive health care problem for the year old age group. This report will examine the research support for these common beliefs along with some of the epidemiological data that examines the effectiveness of these back supports in industry to date. Do Belts Increase Intra-abdominal Pressure? There have been numerous mechanisms of action for back belts that have been studied and made popular over the years. Two studies suggested that by wearing a back belt, a person could reduce their risk of injury. Both studies Harmon et al and Lander et al reported ground reaction forces and measured intra-abdominal pressures while subjects repeatedly lifted a weight. Both reports identified an increase in IAP in persons wearing the belt. These research groups made the assumption that IAP is a good indicator of spinal forces, and that an increase in IAP is indicative of increased low back support thereby justifying the use of a back belt. McGill and Norman had questioned the hypothesized link between elevated IAP and a reduction in low back load. In they used an analytical model and data collected on several subjects lifting varying load magnitudes. They found that an increase in IAP required additional activation of abdominal musculature with a resultant increase in spinal compressive load. In this study, four subjects without a history of back pain were tested during three sitting and two standing conditions, with and without using a Valsalva maneuver. These were isometric tasks while intradiscal IDP. IAP and Lumbar Muscle Activity Another prevailing hypothesis regarding wearing a lumbar support while lifting is that the belt provides an increase in IAP and this leads to a reduced low back extensor muscle activation or strain level. They used six males without low back pain as test subjects. When using the Valsalva maneuver during lifting, they observed peak IAPs being elevated, as opposed to peak IAPs during lifting without Valsalva maneuver. As well, EMG activity of the erector spinae muscles was decreased when lifting and using the Valsalva maneuver, as compared with EMG activity during lifting without the Valsalva maneuver. This finding may indicate that decreases in erector spinae muscle activity result primarily from the use of a Valsalva maneuver, and are not related to belted or unbelted conditions. EMG readings showed no change in muscle activity for the back extensors or abdominal muscles. They used two belted conditions and no belt condition. Both heart rate and blood pressure were increased by as much as 15 mmHg in subjects wearing belts. No differences in EMG median frequency signal in lumbar muscles were found between belted and non belted conditions. The findings did not support the idea that wearing a lumbar belt will significantly alleviate back extensor muscle loading. The subjects performed isokinetic squat lifts at three different speeds in both belted and unbelted conditions. No differences were measured in maximum lift capacity by any of the three groups further strengthening the notion that wearing a lumbar belt may not impart any muscle unloading advantage. Bureau of Labor Statistics. Lost work time injuries and illnesses: Characteristics and resulting time away from work. US Department of Labor. Association of workers Compensation Boards of Canada. National work injuries statistics program. Use of back belts in occupational settings. Barron BA and Feuerstein M. Industrial back belts and low back pain: Journal of Occupational Rehabilitation. Effects of a belt on intra-abdominal pressure during weight lifting. Medicine and Science in Sport and Exercise. The effectiveness of weight belts during multiple repetitions of the squat exercise. Reassessment of the role of intra-abdominal pressure in spinal compression. Effects on

lumbar trunk loads of elevated intra-abdominal pressures. The effect of an abdominal belt on trunk muscle activity and intra-abdominal pressure during squat lifts. The effectiveness of weight belts during the squat exercise. The effect of back belts on lumbar muscle fatigue. J Orthopedic Sports Phys Ther. Test -re-test reliability of lifting and carrying in a 2 day functional capacity evaluation. Reliability of safe maximum lifting determinations of a functional capacity evaluation. The effects of using a lumbar belt on voluntary maximal isometric lift capability in healthy subjects. Lumbar spine orthosis wearing. Restriction of gross body motion. Passive stiffness of the lumbar torso in flexion, extension, lateral bend and axial twist: The effect of belt wearing and breath holding. Mechanics of the intervertebral disc. Ed , The biology of the intervertebral disc. The role of dynamic three dimensional trunk motion in occupationally related low back disorders. The effects of a weight training belt on blood pressure during exercise. Journal of Applied Sport Science Research. Abdominal belts increase diastolic blood pressure. Journal of Occupational and Environmental Medicine. The role of lifting belts in manual lifting. International Journal of Industrial Ergonomics. The role of preconception regarding the usefulness of a lumbar belt prior to a maximal isometric lift task. The influence of prophylactic orthoses on abdominal strength and low back injury in the workplace. Am J Phys Med Rehabil. Lumbar supports and education for the prevention of low back pain in industry. A randomized controlled trial. An evaluation of a weight lifting belt and back injury prevention training class for airline baggage handlers. Effectiveness and cost effectiveness of employer issued back belts in areas of high risk for back injury. Journal of Occupational Medicine. Reduction of acute low back injuries by use of support belts. International Journal of Occupational and Environmental Health. A prospective study of back pain and injury. Evidence based prevention and rehabilitation. November 14, 1.

## Chapter 4 : Managing Chronic Pain at Work | Everyday Health

*Back pain is also one of the leading causes of people missing work and the second most common reason for doctor visits. No matter what kind of back pain a person is experiencing, whether it's a consistent dull ache or a sharp stabbing sensation, it makes concentrating on your job hard and performing physical tasks become impossible.*

Facts, Figures And Research [Infographic] Back pain statistics in numbers To better understand how back pain affects society, here are statistics from conclusive studies conducted in recent years. The most common form is in the lower back, which at times can result in disabling episodes. For the overs age group this figure is higher. Men are more likely than women to report that pain affects their ability to do work Click to Tweet Frequency of back pain reported amongst pregnant women Approximately half of all pregnant women will have significant complaints of backache, according to research from the University of Michigan. Sleep quality is reduced for those who with chronic pain, with more than half stating that they suffer from poor sleep quality. More than half of American cases are from desk workers Back pain is no longer for those who spend the majority of the day on their feet. This is based on over studies of cases in more than 80 countries. Here are some common statistics regarding treatments. Back pain is the fifth most common healthcare complaint Statistics prove that a back problem is a common experience amongst people in the United States, and is a widespread reason for which professional healthcare advice is sought. When seeking help, the most common practitioners people visit are primary care physicians, chiropractors and subspecialists The majority of people 8 out of 10 initially seek help from their primary care physician or a chiropractor. The remaining 2 out of 10 see a subspecialist for treatment. The chart below depicts this rise. This is because there are many factors contributing to the likelihood of pain, such as physical activities, but this association is not equivalent to the causation of back pain. In this section, we outline some of the common treatment routes available. Medication The most straightforward way to treat back issues is through medication to control the pain, in the form of both over-the-counter and prescription drugs. In a survey conducted by Peter D. Hart Research Associates , the use of medication had mixed results. America survey conducted in Chiropractic treatment is not isolated to the US. Tens of millions of people around the world visit one of the 95, actively practicing chiropractic doctors for their backs. Physical Therapy The types of treatment options available to sufferers have mixed reviews. Spine pain is one of the top reasons why people seek out physical therapy. For more specific information on physical therapy and some intriguing statistics, check out this article we put together. Surgery Surgery is a more serious treatment option, and is only necessary for five percent of the 56 million Americans seeking relief for their pain. Of the people who receive surgery, 5. When it comes to spinal surgeries, the most common type is discectomies, which is the removal of the herniated part of a disc. Operations that involve the joining of surrounding vertebrae, better known as spinal fusions, have been rising. There were just over , surgeries in , and by the number had more than doubled to , Even though the number of spinal fusions has been on the rise, experts estimate that fewer than half of them are appropriate and research confirms that the same proportion are successful. In recent years this has become a common at home treatment, once a patient has been adequately instructed by a medical professional. See the chart below for more figures from their research. Injections Steroid injections are another way in which to relieve pain in the back, but they have limited efficacy. Luckily, insurance can cover a significant portion of the expenses. Acupuncture In a study of patients with chronic back pain, those who sought relief through acupuncture 10 sessions over seven weeks improved considerably more than those who used medication, physical therapy, or continued their chosen treatment path. Even after a year the acupuncture group reported feeling better than their counterparts. The study proved that simulated acupuncture “ whereby a toothpick, rather than a needle breaking the skin, stimulated the acupuncture points ” turned out to be just as effective as the real thing. Recovery and recurrence The recovery times and chance of recurrence from problems with the back vary greatly. Here are key things to know when it comes to getting over pain. Chronic LBP is defined by lasting greater than or equal to three months For people whose pain last more than three months, or twelve weeks, many authors define them as having chronic symptoms. Cost Back pain comes at a cost, in terms of the medical expenses incurred,

but can have wider financial implications to the patient or society. Back problems are the most common cause of job-related disability. They are also a leading contributor to missed workdays. These costs included not only lost wages and productivity, but also legal and insurance overheads and the impact on family. Lumbar pain accounts for 4. Costs for patients with lower back pain can vary depending on the treatment and severity. Subsequent costs, such as rehab and weeks off work, make this figure even higher. Back injuries account for one in five workplace injuries or illnesses. The Bureau of Labor Statistics found that more than one million workers, or one in five, suffer from back injuries each year. Time to Back Off?. Physical Therapy Reduces Costs.

## Chapter 5 : Prevention of occupational Back Pain

*Additionally, workplace injuries are a major contributor to lower back pain, being second only to hand injuries as the most prevalent type of injury at work. Back injuries also represent 20% to 25% of all compensation claims and most of these injuries are caused by preventable workplace stressors.*

Employer intervention to prevent and manage lower back pain in the workplace can reduce significant loss of productivity and work days. Lower back pain is one of the most prevalent causes of limitation of activity and absenteeism in the workplace. According to a World Health Organization report, which included lower back pain as a priority disease, an estimated million work days are lost annually in the USA as a result of this condition. Additionally, workplace injuries are a major contributor to lower back pain, being second only to hand injuries as the most prevalent type of injury at work. Vertebrae are separated by fluid filled discs that act as shock absorbers; ligaments keep the spinal column in place and enable movement; and muscles on both sides of the vertebrae help with lifting, pulling, and pushing. Email Newsletter Join thousands of employment testing and employee wellness professionals. Lower back pain is most often the result of damage to ligaments or muscles in the lower back. Pain can vary from mild discomfort to severe and debilitating pain. Treatment of Lower Back Pain Depending on the severity of the injury and the resulting inflammation or muscle spasm, healing can occur within a few days or take up to a month or longer. Continuing with normal work and activities can actually contribute to relieving the condition. In more severe cases, the employee should visit a health care provider for assessment. For severe pain, opioids may be prescribed, which could have safety implications Learn more in Prescription Opioids and Safety Sensitive Work if the employee returns to high risk work. Non-drug therapies for lower back pain include physiotherapy and chiropractic treatment and should definitely be considered when back pain persists for longer than four weeks of self-treatment and pain medication. Physiotherapy includes manual treatments and acupuncture , as well as recommending back strengthening exercises. It has been shown to work well in treating lower back pain and preventing recurrence, especially if the treatment is started early. Chiropractic treatment, or spinal manipulation, is another treatment option and is safe when performed by a licensed practitioner. More serious causes of back pain include a herniated vertebral disc , broken vertebrae, spinal stenosis, degenerative disc disease, and osteoarthritis. Pressure on the spinal nerves is usually involved in these conditions and more extensive treatment is required, including possible surgery. This could involve long periods away from work or even permanent disability. Causes of Back Injury at Work While a back injury can be the result accidental trauma, such as motor vehicle accidents and falls, it is more often caused by overexertion of the ligaments and muscles of the back. Workplace demands leading to lower back strains include: Manual handling of materials, the most frequent cause of compensable injuries. This includes lifting, bending, stretching, carrying, pushing, pulling and twisting, often requiring the use of excessive force Sitting at a workstation for long periods of time “ this includes working on computers, especially if the work environment is not properly adjusted to ensure correct posture through good ergonomic design and practices. Repetitive tasks, including tasks such as manual packing of goods, which are often accompanied by long hours of standing as well as twisting. Driving long distances, particularly driving over rough terrain Operating heavy moving equipment Factors which affect the function of body, such as not being fit enough for the job, exhaustion, and extreme heat or cold can also predispose the employee to back injury. Workplace Back Pain Prevention and Management Working conditions, including the environment and how tasks are performed, can contribute significantly to causing lower back pain or aggravating an existing condition. Although it is unlikely that back injuries at work can be completely eliminated, a comprehensive approach to assessment of working conditions , ergonomic design of the working environment and tasks, as well as employee education, can make an impact on prevention. Risk assessments should include the biomechanical , physiological, and psychological demands of jobs. Where possible, jobs should be made physically easier , for example using powered or mechanical materials handling aids, adjusting the heights at which materials are handled, reducing the weight of materials, or assigning two or more people or lift a load. Workers performing jobs which put them at high risk of back pain, such as

continuous lifting, should be given more frequent and longer rest breaks in order to avoid fatigue and the resulting reduced physical ability. Pressure to complete tasks in a hurry not only causes mental tension, but also physical tension, which makes muscles more prone to injury. Many back injuries occur when employees are required to perform physical tasks that are not within the normal scope of their work and for which they do not have the required level of physical fitness. Avoid allocating tasks which are beyond the normal abilities and limits of a particular employee. Employees new to jobs requiring physical exertion should also be given time to adjust by allowing them to do less strenuous work for part of the day or by offering additional rest breaks or stretch breaks. All incidents of reported back pain or injury should be investigated for the cause and contributing factors so that recommendations can be made on how to redesign the job or working environment to prevent future occurrences. Employee training programs should include awareness of ergonomic principles and safe working practices. This includes correct body posture and safe materials handling practices such as warming up before performing physically demanding tasks as well as using rest periods to relax muscles and to prevent fatigue from building up. Employees should be able to identify and control risk factors that could cause lower back pain. All lower back pain and any incidents causing lower back injury must be reported so that contributing factors can be identified and corrected. The employer should provide support and follow-up when an employee has experienced an episode of lower back pain or a back injury. The employee might not be able to return to his or her normal duties right away and transitional work arrangements should be planned with the employee. This might entail a different job or modification of the job. Modification could include shorter working days, more rest breaks, or adjustments to the working system or work station. Adjustments to the physical working environment, especially if it impacted on the initial episode of the back pain, may also prevent recurrence of the condition.

## Chapter 6 : 15 Shocking Back Injury Statistics

*Work can be a real pain in the back. Yes, work can be stressful, chaotic at times, and also leave you feeling exhausted with back and neck pain at the end of the day. Back pain in the workplace is an extremely common thing.*

**Abstract** This paper reviews scientific research on occupational back pain and focuses on prevention of this problem. It discusses some of the challenges of translating the evidence of this multi-factorial condition into policy. Back pain affects the vast majority of people at some point in their lives and is very costly to both the health care system and the industry. Evidence suggests that heavy lifting, driving, and vibration of the whole body are linked to occupational back pain. Once the risk factors for occupational back pain are identified, an otherwise chronic and disabling condition can be prevented in the majority of patients. As explained in this article, three levels of prevention for occupational back pain have been reported as effective. Failure to implement preventive measures may lead to a high incidence of occupational back pain. Therefore, there is a lack of standardized methodology and reporting by researchers in this field. Furthermore, with time taken off work, the direct cost approaches more than 25 billion US dollars while indirect costs vary widely to a total of billion US dollars per year. Failure to undertake a comprehensive approach to a patient with backache can lead to mismanagement and chronicity. It is known that any structure that involves the spine is a potential source of back pain. Consequently, it is considered to be a symptom of a wide range of possible injuries. For example, the spinal nerves can be pinched by a slipped disk. Sudden unfamiliar or unexpected movements are the most frequent cause of muscular back pain. Other causes of back pain include poor posture, excess weight, lack of exercise, and others as explained below. It should be noted that it is extremely difficult to differentiate between nonoccupational and occupational back pain from the clinical point of view. Physicians can play a major role in reducing the chronicity and recurrence of backache if they implement these preventive measures. However, prevention of occupational back pain can be on three levels, all of which have been reported as effective. Primary prevention before incidence Primary prevention of back pain in the workplace is usually the most common strategy utilized by employers. Many cases of back pain could be prevented by changes in the workplace that focus on reducing the incidence of new episodes of occupational back pain. For instance, mechanical hoists are used in hospitals to reduce the load of patient lifting for nurses. The National Institute of Occupational Safety and Health NIOSH developed a lifting equation in which was then revised in in an attempt to determine recommended weight limits for workers. Although the NIOSH guidelines are frequently utilized in industry, applying the equation in many jobs is difficult. There is still no universally accepted method of determining safe lifting capacity for workers. Some researchers have recommended a maximum lifting weight of 23 kg if the object is within 18 cm in front of the body. No definitive conclusion has been reached on the clinical significance of back schools an educational program that teaches practical information about back care, posture, body mechanics, back exercises, and how to prevent chronic back. However, a number of factors should be taken into account when discussions take place on the effectiveness of such preventive initiatives as a redesign of the workplace redesigning the workplace can be expensive. These include eyes to the source monitor , hand to input devices keyboard and mouse , body to chair and feet to the floor. Without the commitment of the management and the involvement of workers, the impact of the changes in the workplace the aim of which is to prevent back pain will be negative. It is difficult to determine exactly what needs to be changed, and how to measure outcome is uncertain. There is good scientific evidence that primary preventive interventions against occupational back pain are cost-effective. The role of psychosocial and organizational factors, in particular, need to be better examined. After decades of international research, very little is known about who does and who does not get better quickly, and why recovery time varies so greatly for people with back pain. Risk factors identified to date, such as age, and previous back problems are immutable. It is well-documented in the literature that the longer these patients are away from work, the harder it is to get them back to work. Studies to date indicate the effectiveness of the early provision of modified work in improving outcome. On the other hand, intervention by the health care system through the provision of fairly clear guidelines on the management of back pain has proved to be effective. There are scientifically

substantiated, well-documented international guidelines in the medical literature for the management of backache. Refer to physiotherapy for assessment and exercise Investigate for psychosocial factors also called yellow flags use a published questionnaire or refer to psychiatry. Indeed, exercise swimming or walking 45 min 3-4 times a week appears to have a beneficial effect for the prevention of back pain. The greater the intensity of exercise, the greater the benefit to the individual. This can be difficult for small companies. Disability resulting from back pain is multidimensional and challenges our familiar paradigms of illness and health and even our social and medical decision-making structures. It is very costly for the healthcare system and industry. It can easily be prevented, and physicians can play a major role in this regard to stop it from becoming chronic and disabling. Physicians must standardize their clinical approach to the patient with occupational back pain by implementing clinical guidelines for this condition. In particular, any patient with acute back pain should not have imaging studies done unless there is evidence of red flags. Bed rest must be discouraged and limited to a maximum of 2 days in severe cases with early return to work on modified jobs where there is no lifting or climbing or bending avoid risk factors , and a follow-up for further intervention if necessary. Footnotes Conflict of Interest: A longitudinal study for incidence of low back pain and radiological changes of lumbar spine in asymptomatic Japanese military young adults. Prevalence of low back pain in children and adolescents: Low back pain and its risk indicators: A survey of 7, Finnish male conscripts. Low back pain and associated presenteeism among hospital nursing staff. The prevalence of and risk factors for back pain among home care nursing personnel in Hong Kong. Am J Ind Med. A population-based intervention study. Occupational back pain in Iranian nurses: How common is back pain in Al-Qaseem region. Back pain prevalence and visit rates: Spine Phila Pa ; Prevalence and pattern of lumbar magnetic resonance imaging changes in a population study of one thousand forty-three individuals. Long-term follow-up of patients with low back pain attending for manipulative care: US national prevalence and correlates of low back and neck pain among adults. Back pain prevalence in nursing personnel: Frequency and risk factors of musculoskeletal pain in nurses at a tertiary centre in Jeddah, Saudi Arabia: A cross sectional study. Prevalence and correlates of low back pain among occupational therapy students in Northern Queensland. Can J Occup Ther. Back pain among health care workers in a Saudi Aramco facility: Prevalence and associated factors. Arch Environ Occup Health. Musculoskeletal complaints among a group of Turkish nurses. A detailed analysis of musculoskeletal disorder risk factors among Japanese nurses. Musculoskeletal pain and discomfort symptoms in hospital nurse personnel in Juarez, Mexico. Int J Ind Eng. A systematic review of low back pain cost of illness studies in the United States and internationally. Back pain exacerbations and lost productive time costs in United States workers. Estimates and patterns of direct health care expenditures among individuals with back pain in the United States. The economic cost of low back pain in Sweden in Back pain claim rates in Japan and the United States: Back pain in the workplace. Prognostic factors associated with low back pain outcomes. J Prim Health Care. Randomised controlled trial of integrated care to reduce disability from chronic low back pain in working and private life. Prognostic factors for low back pain in patients referred for physiotherapy: Comparing outcomes and varying modeling techniques. Low back pain, work absenteeism, chronic back disorders, and clinical findings in the low back as predictors of hospitalization due to low back disorders: A year follow-up of industrial employees. Low back pain among textile workers: Occup Med Lond ; Occupational and genetic risk factors associated with intervertebral disc disease. The prognosis of acute and persistent low-back pain: Are prognostic indicators for poor outcome different for acute and chronic low back pain consulters in primary care? Natural history and prognostic indicators of sciatica. Whole-body vibration exposure in metropolitan bus drivers. Association between sitting and occupational LBP. Predictors of back pain in a general population cohort. Prognosis for patients with chronic low back pain:

### Chapter 7 : Back pain - advice for employers | Health and Safety Executive Northern Ireland

*Back pain is any ache, pain, tension, or disorder that affects the muscles or bones of the back from the base of the neck to the hips. It can be caused by damage to the muscles or the bones of the spine and ribs or to the discs between the vertebrae. Low back pain is common and can be extremely.*

Where can I get more information? If you have lower back pain, you are not alone. About 80 percent of adults experience low back pain at some point in their lifetimes. It is the most common cause of job-related disability and a leading contributor to missed work days. In a large survey, more than a quarter of adults reported experiencing low back pain during the past 3 months. Men and women are equally affected by low back pain, which can range in intensity from a dull, constant ache to a sudden, sharp sensation that leaves the person incapacitated. Pain can begin abruptly as a result of an accident or by lifting something heavy, or it can develop over time due to age-related changes of the spine. Sedentary lifestyles also can set the stage for low back pain, especially when a weekday routine of getting too little exercise is punctuated by strenuous weekend workout. Most low back pain is acute, or short term, and lasts a few days to a few weeks. It tends to resolve on its own with self-care and there is no residual loss of function. The majority of acute low back pain is mechanical in nature, meaning that there is a disruption in the way the components of the back the spine, muscle, intervertebral discs, and nerves fit together and move. About 20 percent of people affected by acute low back pain develop chronic low back pain with persistent symptoms at one year. In some cases, treatment successfully relieves chronic low back pain, but in other cases pain persists despite medical and surgical treatment. The magnitude of the burden from low back pain has grown worse in recent years. In , a study ranking the most burdensome conditions in the U. The lower back where most back pain occurs includes the five vertebrae referred to as L1-L5 in the lumbar region, which supports much of the weight of the upper body. The spaces between the vertebrae are maintained by round, rubbery pads called intervertebral discs that act like shock absorbers throughout the spinal column to cushion the bones as the body moves. Bands of tissue known as ligaments hold the vertebrae in place, and tendons attach the muscles to the spinal column. Thirty-one pairs of nerves are rooted to the spinal cord and they control body movements and transmit signals from the body to the brain. The vast majority of low back pain is mechanical in nature. In many cases, low back pain is associated with spondylosis, a term that refers to the general degeneration of the spine associated with normal wear and tear that occurs in the joints, discs, and bones of the spine as people get older. Some examples of mechanical causes of low back pain include: Sprains are caused by overstretching or tearing ligaments, and strains are tears in tendon or muscle. Both can occur from twisting or lifting something improperly, lifting something too heavy, or overstretching. Such movements may also trigger spasms in back muscles, which can also be painful. In a healthy back, intervertebral discs provide height and allow bending, flexion, and torsion of the lower back. As the discs deteriorate, they lose their cushioning ability. Pressure on the nerve root results in pain, numbness, or a tingling sensation that travels or radiates to other areas of the body that are served by that nerve. Radiculopathy may occur when spinal stenosis or a herniated or ruptured disc compresses the nerve root. This compression causes shock-like or burning low back pain combined with pain through the buttocks and down one leg, occasionally reaching the foot. In the most extreme cases, when the nerve is pinched between the disc and the adjacent bone, the symptoms may involve not only pain, but numbness and muscle weakness in the leg because of interrupted nerve signaling. The condition may also be caused by a tumor or cyst that presses on the sciatic nerve or its roots. A traumatic injury, such as from playing sports, car accidents, or a fall can injure tendons, ligaments or muscle resulting in low back pain. Traumatic injury may also cause the spine to become overly compressed, which in turn can cause an intervertebral disc to rupture or herniate, exerting pressure on any of the nerves rooted to the spinal cord. When spinal nerves become compressed and irritated, back pain and sciatica may result. Low back pain is rarely related to serious underlying conditions, but when these conditions do occur, they require immediate medical attention. Serious underlying conditions include: However, infections can cause pain when they involve the vertebrae, a condition called osteomyelitis; the intervertebral discs, called discitis; or the sacroiliac

joints connecting the lower spine to the pelvis, called sacroiliitis. Occasionally, tumors begin in the back, but more often they appear in the back as a result of cancer that has spread from elsewhere in the body. It occurs when disc material is pushed into the spinal canal and compresses the bundle of lumbar and sacral nerve roots, causing loss of bladder and bowel control. Permanent neurological damage may result if this syndrome is left untreated. Back pain can be a sign that the aneurysm is becoming larger and that the risk of rupture should be assessed. Other underlying conditions that predispose people to low back pain include: Spondylitis is also called spondyloarthritis or spondyloarthropathy. Fibromyalgia, a chronic pain syndrome involving widespread muscle pain and fatigue. What are the risk factors for developing low back pain? The first attack of low back pain typically occurs between the ages of 30 and 50, and back pain becomes more common with advancing age. As people grow older, loss of bone strength from osteoporosis can lead to fractures, and at the same time, muscle elasticity and tone decrease. The intervertebral discs begin to lose fluid and flexibility with age, which decreases their ability to cushion the vertebrae. The risk of spinal stenosis also increases with age. Back pain is more common among people who are not physically fit. Weak back and abdominal muscles may not properly support the spine. Studies show that low-impact aerobic exercise is beneficial for the maintaining the integrity of intervertebral discs. Back symptoms almost always resolve postpartum. Being overweight, obese, or quickly gaining significant amounts of weight can put stress on the back and lead to low back pain. Some causes of back pain, such as ankylosing spondylitis, a form of arthritis that involves fusion of the spinal joints leading to some immobility of the spine, have a genetic component. Having a job that requires heavy lifting, pushing, or pulling, particularly when it involves twisting or vibrating the spine, can lead to injury and back pain. An inactive job or a desk job may also lead to or contribute to pain, especially if you have poor posture or sit all day in a chair with inadequate back support. Pre-existing mental health issues such as anxiety and depression can influence how closely one focuses on their pain as well as their perception of its severity. Pain that becomes chronic also can contribute to the development of such psychological factors. Stress can affect the body in numerous ways, including causing muscle tension. Backpack overload in children: Low back pain unrelated to injury or other known cause is unusual in pre-teen children. However, a backpack overloaded with schoolbooks and supplies can strain the back and cause muscle fatigue. A complete medical history and physical exam can usually identify any serious conditions that may be causing the pain. During the exam, a health care provider will ask about the onset, site, and severity of the pain; duration of symptoms and any limitations in movement; and history of previous episodes or any health conditions that might be related to the pain. Along with a thorough back examination, neurologic tests are conducted to determine the cause of pain and appropriate treatment. The cause of chronic lower back pain is often difficult to determine even after a thorough examination. Imaging tests are not warranted in most cases. Under certain circumstances, however, imaging may be ordered to rule out specific causes of pain, including tumors and spinal stenosis. Imaging and other types of tests include: X-rays show the bony structures and any vertebral misalignment or fractures. Soft tissues such as muscles, ligaments, or bulging discs are not visible on conventional x-rays. Using a computer, the CT scan creates a three-dimensional image from a series of two dimensional pictures. In this procedure, a contrast dye is injected into the spinal canal, allowing spinal cord and nerve compression caused by herniated discs or fractures to be seen on an x-ray or CT scans. This procedure involves the injection of a contrast dye into a spinal disc thought to be causing low back pain. The dye helps to show the damaged areas on CT scans taken following the injection. Discography may provide useful information in cases where people are considering lumbar surgery or when their pain has not responded to conventional treatments. Unlike x-ray, which shows only bony structures, MRI scans also produce images of soft tissues such as muscles, ligaments, tendons, and blood vessels. An MRI may be ordered if a problem such as infection, tumor, inflammation, disc herniation or rupture, or pressure on a nerve is suspected. MRI is a noninvasive way to identify a condition requiring prompt surgical treatment. EMG assesses the electrical activity in a muscle and can detect if muscle weakness results from a problem with the nerves that control the muscles. Very fine needles are inserted in muscles to measure electrical activity transmitted from the brain or spinal cord to a particular area of the body. In NCSs, two sets of electrodes are placed on the skin over the muscles. The first set provides a mild shock to stimulate the nerve that runs to a particular muscle. EP tests also involve two sets of electrodes— one set to

stimulate a sensory nerve, and the other placed on the scalp to record the speed of nerve signal transmissions to the brain. A small amount of radioactive material is injected into the bloodstream and will collect in the bones, particularly in areas with some abnormality. Scanner-generated images can be used to identify specific areas of irregular bone metabolism or abnormal blood flow, as well as to measure levels of joint disease. Ultrasound imaging, also called ultrasound scanning or sonography, uses high-frequency sound waves to obtain images inside the body. The sound wave echoes are recorded and displayed as a real-time visual image. Ultrasound imaging can show tears in ligaments, muscles, tendons, and other soft tissue masses in the back. Potential tests include complete blood count, erythrocyte sedimentation rate, and C-reactive protein. Blood tests may also detect HLA-B27, a genetic marker in the blood that is more common in people with ankylosing spondylitis or reactive arthritis a form of arthritis that occurs following infection in another part of the body, usually the genitourinary tract. Treatment for low back pain generally depends on whether the pain is acute or chronic. In general, surgery is recommended only if there is evidence of worsening nerve damage and when diagnostic tests indicate structural changes for which corrective surgical procedures have been developed. Conventionally used treatments and their level of supportive evidence include: Bed rest should be limited. Individuals should begin stretching exercises and resume normal daily activities as soon as possible, while avoiding movements that aggravate pain. Strong evidence shows that persons who continue their activities without bed rest following onset of low back pain appeared to have better back flexibility than those who rested in bed for a week.

### Chapter 8 : 30 Of The Most Surprising (And Alarming) Back Pain Statistics

*Worldwide, back pain is the single leading cause of disability, preventing many people from engaging in work as well as other everyday activities. 2 Back pain is one of the most common reasons for missed work.*

Fit for Work team Posted in: Blog Wednesday, October 5, Back pain is a major health concern for workers and is likely to affect 80 percent of adults in Britain during their lifetime. Backs are complex structures comprising the interlinking vertebrae bones of the spine, cartilage or discs, muscles, tendons and nerves, and backs play a central role in supporting, moving and protecting our bodies. Any problems with our backs can have a debilitating impact on us physically and mentally. Triggers of back pain can vary from one-off movements such as standing up from a sofa to ongoing triggers such as regularly lifting heavy items in the workplace. Very few cases of back pain are caused by serious chronic conditions but the impact on business is significant. The Health and Safety Executive estimates that there were , cases of work-related back problems in and that some 2. Fortunately, there are many steps that both employees and employers can take to reduce the risk of back pain and the consequent loss of work days, as well as treating the debilitating impact of this condition. Causes of back pain Serious back conditions or diseases are rare. It is minor strains, inflammation or pinched nerves that account for the majority of cases of back pain, frequent causes of which are: More serious and chronic back problems are far less common and require medical treatment. Certain groups of workers can be more susceptible to back pain than others. Care workers, for example, whose work involves a lot of lifting, twisting and driving between appointments are particularly at risk. The back care charity BackCare estimates that more than 70 percent of unpaid carers in the UK suffer from back pain, which is highly disabling in a third of cases. Other workers at a heightened risk of back pain include: Treatment for back pain Most incidents of back pain are minor and short-term and can be overcome without a visit to the doctor. There are various self-help methods that can help sufferers of back pain make a recovery: Getting moving again as soon as possible after the acute pain has passed. Doctors no longer suggest bed rest but encourage patients to keep moving as soon as they are able. Side sleeping to take the pressure off the back. Assessment, advice and treatment by a physiotherapist, osteopath or chiropractor for a short period can help and some of these offer acupuncture too, which can help in some cases.. What employees can do to reduce the risk of developing back pain Workers can do a lot to help reduce the risks of suffering a recurring back problem: Keeping fit by exercising regularly. Walking, swimming and cycling even in a gym are all good for building muscle strength around the back. Pilates and yoga are gentle ways to build up core strength that will help prevent back problems. Losing excess weight “ being overweight puts greater pressure on the back. Stopping smoking “ doctors believe that smoking reduces the flow of oxygen to the spine and can lead to the degeneration of the discs in the back. Being conscious of posture when sitting or walking can help protect the back by sitting up or walking tall rather than slouching. Taking care when lifting. Employees should take advice on how to develop a good lifting technique, particularly if their job involves a lot of lifting. When lifting, the knees and hips should be bent, not the back. Managing stress “ stress can worsen the experience of back pain but relaxation techniques can help. Workers suffering with a back problem should inform their line manager so that some thought can be given to whether the workplace environment is affecting their health. Advice can also be sought from the Fit for Work advice line on English or Welsh. Those in Scotland can call or visit fitforworkscotland. Regular spinal strengthening exercises helps to protect the back from aches and strains and more serious back pain. Simple exercises can be found on NHS Choices. What employers can do Employers should consider how they can ensure the risk of harm to their staff is minimised from activities such as prolonged sitting, driving or manual handling and provide suitable training and support and should always act on any reports of ill health caused by or exacerbated by work. Discussion with workers is likely to generate practical solutions to help avoid back strain at work. Free work-related health advice can also be sought from the Fit for Work website, or by calling the Fit for Work advice line on English or Welsh. There is a separate service in Scotland:

### Chapter 9 : A Look at Lower Back Pain in the Workplace

*Millions of Americans have ongoing back pain. It's the leading cause of disability in people younger than 45, and many things can cause it. Back pain often happens because something is off in.*

Sign up now Back pain at work: Preventing pain and injury Heavy lifting, repetitive movements and sitting at a desk all day can take a toll on your back. Get the facts about back pain at work and how to prevent it. Unfortunately, many occupations – such as nursing, construction and factory work – can place significant demands on your back. Even routine office work can cause or worsen back pain. Understand what causes back pain at work and what you can do to prevent it. Common causes of back pain at work A number of factors can contribute to back pain at work. Exerting too much force on your back – such as by lifting or moving heavy objects – can cause injury. Repeating certain movements, especially those that involve twisting or rotating your spine, can injure your back. An inactive job or a desk job can contribute to back pain, especially if you have poor posture or sit all day in a chair with inadequate back support. Back pain and lifestyle factors Of course, factors such as aging, obesity and poor physical condition also can contribute to back pain. Start by eating a healthy diet. Make sure you get enough calcium and vitamin D. These nutrients can help prevent osteoporosis, a condition that causes your bones to become weak and brittle and is responsible for many of the bone fractures that lead to back pain. Combine aerobic exercise, such as swimming or walking, with exercises that strengthen and stretch your back muscles and abdomen. Exercises that increase your balance and strength can also decrease your risk of falling and injuring your back. Consider tai chi, yoga and weight-bearing exercises that challenge your balance. For most healthy adults, the Department of Health and Human Services recommends at least minutes a week of moderate aerobic activity or 75 minutes a week of vigorous aerobic activity – preferably spread throughout the week – and strength training exercises at least twice a week. Also, if you smoke, quit. Smoking reduces blood flow to your lower spine, which can contribute to spinal disc degeneration and slow healing from back injuries. Coughing associated with smoking can also cause back pain. Preventing back pain at work You can take steps to avoid and prevent back pain and injuries at work. Pay attention to posture. When standing, balance your weight evenly on your feet. To promote good posture when sitting, choose a chair that supports your spinal curves. Adjust the height of your chair so that your feet rest flat on the floor or on a footrest and your thighs are parallel to the floor. Remove your wallet or cellphone from your back pocket when sitting to prevent putting extra pressure on your buttocks or lower back. When lifting and carrying a heavy object, lift with your legs and tighten your core muscles. Hold the object close to your body. Maintain the natural curve of your back. If an object is too heavy to lift safely, ask someone to help you. Use lifting devices, when available, to help you lift loads. Try to alternate physically demanding tasks with less demanding ones. If you work at a computer, make sure that your monitor, keyboard, mouse and chair are positioned properly. If you frequently talk on the phone and type or write at the same time, place your phone on speaker or use a headset. Avoid unnecessary bending, twisting and reaching. Limit the time you spend carrying heavy briefcases, purses and bags. Consider using a rolling suitcase. Listen to your body. If you must sit for a prolonged period, change your position often. Periodically walk around and gently stretch your muscles to relieve tension. Back pain can plague your workdays and free time. Examine your work environment and address situations that might aggravate your back. Even simple steps to ease back pain are steps in the right direction.