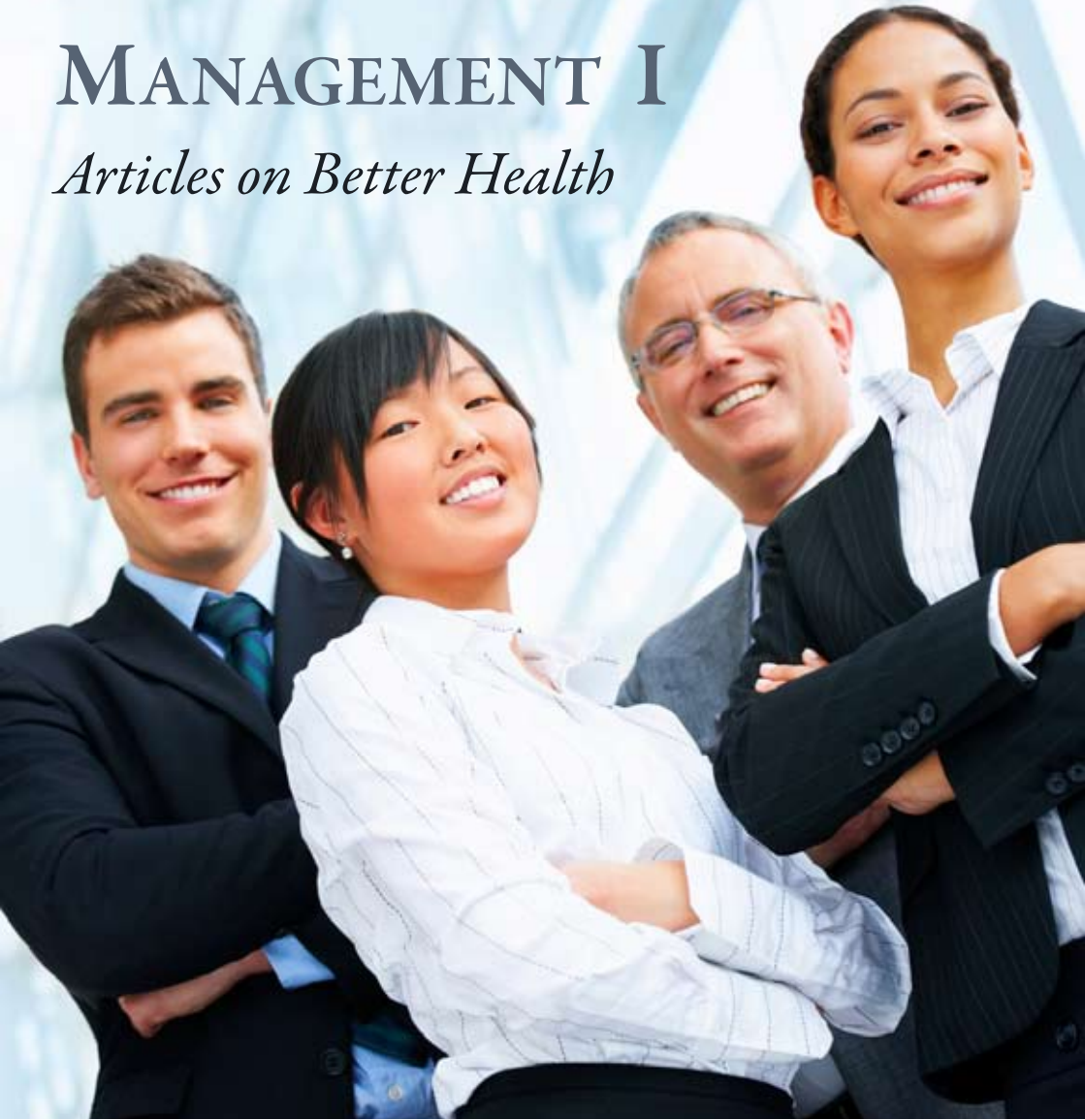


WORKPLACE HEALTH MANAGEMENT I

Articles on Better Health



LifeWorkz
Touching Individuals, Growing Organizations

CORE CONCEPTS
MUSCULOSKELETAL HEALTH GROUP

Workplace Health Management Volume I

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Foreword

It brings me great pleasure to recommend this book on Workplace Health by Core Concepts.

I have long been an admirer of the work of Core Concepts, because we share a similar passion for making life better for individuals, and making workplaces a healthier place to work in.

As I consult with companies in the Asia Pacific, I see a few trends converging to make workplace health a key priority:

- In the business environment, employees are bearing the brunt of the intense pace as businesses compete to come up with new innovations and to enter new markets.
- More than half of the workforce is made up of women who, in addition to their roles at work, are often the primary care-giver at home, to both their children and to their elderly parents.

- Baby boomers are delaying their retirement and staying on to contribute to their organizations.

Now, more than ever, it is imperative for these individuals to take proactive steps towards work-life integration and personal resilience.

If taken seriously and applied diligently, the practical tips in this book will go a long way in improving your workplace health, and they are applicable whether your 'workplace' is an office cubicle, a laptop or a PDA on the go.

Enjoy!

Cheryl Liew-Chng

CEO

LifeWorkz – the Experts in Work-Life, Gender & Generations

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Introduction

Workplace Health Management I is a collection of articles written by Core Concepts specialist physiotherapists. Workplace Health affects us in many ways. It improves our overall physical well-being as well as our emotional and mental health. Today the world is facing numerous challenges including the threat of a global recession. Nerves at the office are frayed. Tension is high. Workplace Health is not the sole panacea to most of our problems but they can help alleviate some of them.

Education plays an important role in managing health. We hope that this collection of articles will be able to contribute in some small way in furthering our better understanding our common work-related strains and injuries and how to prevent and manage them better. For other articles and workshops on health, please email us workplace@coreconcepts.com.sg

Editor,
Musculoskeletal Consumer Review
1 February 2009

*Everything seems
to be labelled
ergonomically
designed these
days.*

Ergonomics. If everything is getting to be labelled ergonomics, then what isn't ergonomical? If the chair that I bought and am now sitting on is labelled ergonomically-designed, why is my body still aching as much as before?

Firstly, ergonomics is the application of scientific information concerning humans to the design of objects, systems and environment for human use. This is according to International Ergonomics Association (<http://www.ica.cc>). It is the word 'human' in



the previous sentence that is the problem.

You want to get something that is designed for your use. Not for any old 'human'. This is a particular problem here in Asia due to the lack of anthropomorphic data for Asians. If you live and work in Asia, you will notice that a large number of our female colleagues dangle their ankle off their 'ergonomically-designed' chairs. Why is that? It's because the chairs are too large for them and their feet can't reach the floor. If they do try to reach the floor, they most probably will end up sitting at the edge of their chairs, without the back supported by the back-rest. They may else well be sitting on a stool. That's why your body is still aching as before. A \$1,000 stool anyone?

So are the designers of the chair lying or mislabeling them? Not at all. It is just that a large number of chairs are designed based on European or US-based anthropomorphic data. That is, they are designed for people with larger builds. For some ergonomically designed furniture, even at the smallest setting, they may be too large for a small-build Asian lady.

Obviously, getting everything custom-built will be a very expensive proposition. So what can we do? We need to make sure that the furniture is adjustable with enough range to accommodate your build. If it can't, we may then have to tweak it a little with some improvisation. For example, put a stool beneath your feet to prevent them from dangling while your back is fully supported by the backrest. If a cheap plastic stool is not to your liking, get one custom-made!

Another common fallacy is that people think once they have ergonomically designed furniture like a chair that fits them, they no longer need to worry about caring for their body's health. Supporting furniture no matter how well designed is still a support. And supports are double-edged swords. Like a wheel-care. Sit on one for long enough you will soon have trouble standing on your own; even if you could walk un-aided before.

So just because that \$2,000+ chair feels so comfortable doesn't mean that you can sit on it for hours at a go without breaks and stretching in between.

Taking a Micro-Break

A common advice that we get for workplace health issues related repetitive stress injuries (RSI) is to take frequent breaks. Usually, people suggest that a 5-minute break every 45 to 60 minutes. But what about 10-second breaks?

A lot of the stress comes from muscle fatigue. When muscles are fatigued then don't do their jobs well. So they need to rest from time to time to recover. Achieving the right amount of muscle recovery at the right time not too difficult to understand. Muscles recover very quickly from low levels of fatigue but quite slowly from high levels of fatigue. Once your muscles become tired and sore, recovery takes a long time.

Recovery at frequent periods from low-level fatigue will take only around ten seconds whereas high levels of fatigue will take up to several hours. Think about how your body feels after a strenuous workout.

One solution to muscle fatigue is micro pauses. They are very short breaks of 5 to 10 seconds every 4 to 10 minutes of repetitive motions (or stationary positions). Micro pauses relax your muscles and restore blood flow. These micro pauses are small changes in your working activity that allow you to adopt different postures, positions and eye focus.

The advantages of micro pauses

- They take very little time and can easily be developed to become a healthy habit.
- They prevent fatigue build up.
- They are taken before discomfort occurs.
- Micro pauses are the most effective and efficient breaks you can take, but remembering to take them is difficult.

Examples of what to do in a micro pause

- Look away from what you are working on and let go of the mouse if you are using the computer.
- Drop your arms to your sides, lean back and allow your shoulders to droop and relax.
- Pointing the hands towards the floor and gently shaking the wrists is a good idea.
- Do this for 5 – 10 seconds.

9 Things To Take Pressure Off Your Only Back

1. While standing to perform ordinary tasks like ironing or folding laundry, keep one foot on a small stepstool, shifting between feet occasionally

Why It Works

To reduce the excessive lordosis (inward curvature of a portion of the spine) that some people may have especially in standing. Particularly those with weak abdominals. The foot on stool will take the pelvis into posterior pelvic tilt, hence reducing the lordosis

2. Don't sit or stand in the same position for too long. Stretch, move about or take a short walk when you can.

Why It Works

Allows the different postural muscles to have a little rest.

The spine is made of many vertebrae stacked on top of each other, allowing each segment to move. Therefore, our spine is built for movement and not to be in one position for a prolonged period of time

3. When bending from the waist, always use your hands to support yourself.

Why It Works

Reduces torque on the lower back.

4. Because vacuuming can take a toll on your back, tackle rooms in chunks, spending no more than 5 to 10 minutes at a time doing

this task.

Why It Works

Offers the back a chance to rest after a period of sustained bending. Muscles can get strained and fatigued, thus compromising the support to the lumbar spine

5. Choose an office chair that offers good back support (preferably with an adjustable backrest, lumbar support, armrests, and wheels) and set up your workspace so you don't have to do a lot of twisting.

Why It Works

Allows the spine to stay in an optimal position as you work, without having the back muscles constantly supporting you.

It also facilitates the neck to be aligned properly

6. Try not to overload briefcases or backpacks (see

“Lighten your load”).

Why It Works

Reduces loading of the back muscles and disc pressure. As the muscles fatigue, our bodies will adopt a rounded upper back posture to compensate, resulting in poor posture and associated injuries

7. Make frequent stops when driving long distances.

Why It Works

Prevents fatigue mentally and physically to allow some mobility in the spine and stretch out muscles that are placed in the shortened position as we drive

8. While driving, sit back in your seat, and if your seat does not provide sufficient support, place a rolled blanket or some towels behind your lower back. Try to shift your weight occasionally. If you have cruise control, use it when you can.

Also consider using a foam seat cushion to absorb some of the vibration.

Why It Works

Allows the back to be in a proper posture.

Weight shifting offers pressure relief and cruise control allows the foot to rest and not sustained effort on the accelerator

Vibrations can cause injury to the back

9. Sleep on your side if you can, and curl your body up a bit, and if possible, with one knee bent and the other straightened. Also, choose a pillow that keeps your head level with your spine; your pillow shouldn't prop your head up too high or let it droop. Choose a mattress that's firm enough to support your spine (so that it doesn't sag into the bed) and that follows your body's contours.

Why It Works

The spine will be well supported when it is in the neutral position

Repetitive Strain Injuries - Are you a victim of it?

Repetitive Strain Injuries is really a blanket name for health problems that result from over-use or misuse of muscles, tendons, and nerves. Unlike strains and sprains, which occurs from a single incident, RSIs develop over time. Therefore, repetitive strain injuries are also called Cumulative Trauma Disorders (CTD).

Other names include repetitive stress syndrome, occupational overuse syndrome and repetitive motion disorders.

RSIs are the most common form of occupational (workplace) illness; some so crippling that sufferers may require surgery or face permanent disability. Though RSI is not localized to any one type of job, the odds are higher for occupations that involve repetitive work, such as, working at the assembly line,

food processing jobs, or at visual display terminals. It can take years to develop and therefore tend to strike when the worker is in his prime of career usually around the age of 40.

Occupation-related RSIs are caused by any combination of the following factors:

RSI Factor	Description
Repetition	Doing the same motion over & over without allowing your body to rest & recover from the stress and strain.
Awkward or fixed posture	Working in awkward positions i.e. repeated overhead motions; reaching down and behind your body; lifting & twisting; or stay in a fixed/sustained position for a long time.
Fast pace	Having to work quickly.

RSI Factor	Description
Forceful movements	Using a lot of effort & strength to do the job i.e. lifting, pulling, pushing and even small movements like pounding fingers on keyboard.
Frequent & difficult lifting	In a badly designed job, lifting even 10kg can cause injuries. Loads over 30kg are always dangerous for one person to lift.
Excessive Vibration	Usually caused by power tools i.e. drills.
Insufficient recovery time	Inadequate rest breaks.

What are the signs & symptoms of RSI?

RSIs can affect almost any part of the body, but they often occur in upper body. The most commonly affected body parts are the fingers, hands, wrists, elbows, arms, shoulders, back, and neck. One or more

of the symptoms below may be present in the injured area:

- Tenderness
- Swelling
- Aching
- Electricity-like tingling and/or numbness
Loss of joint movement
- Weakness and decreased coordination of the injured body part
- Crackling
- Muscle spasms

Symptoms may occur at any time i.e. during work, immediately after work, or even many hours (or days) after work. Typically, one first experience symptoms when he is not working. For example, an injured worker may have no pain at work and wake up in the night with a painful neck or arm.

Jobs that pose a particularly high risk of RSI are:

- Assembly line worker
- Checkout scanner
- Computer keyboard operator
- Food handler
- Garment worker
- Hand tool operator
- Machine operator
- Materials handler
- Meat packer

RSI symptoms can be mild, but they can also become so severe till activities of daily living become difficult to perform, including turning taps, opening a jar or getting dressed.

What are the most common RSIs?

There are many repetitive strain injuries, because many different parts of the body can be affected. However, most job-related repetitive strain injuries affect the upper part of the

body- the spinal column, neck, shoulders, arms and hands.

Common RSI	What are they?
De Quervain's syndrome also known as washerwoman's sprain, radial styloid tenosynovitis	Inflammation of the tendons in the wrist that control the thumb.
Subacromial bursitis, also known as shoulder impingement syndrome	Occurs as a result of the subacromial bursa (a fluid-filled sac) being squashed or 'impinged' between the rotator cuff muscles (Supraspinatus, Subscapularis, Infraspinatus and Teres Minor) and the collarbone, during repeated overhead shoulder movements.

Common RSI	What are they?
Carpal tunnel syndrome (CTS)	Results when the median nerve in the wrist is compressed between tendon and the bone, leading to inflammation. Sufferers usually experience numbness, tingling and pain in the thumb, index finger, middle finger and inner side of ring finger. CTS typically affects people who overuse their hands on piano or computer keyboards, giving rise to injuries to hand and wrist.
Hand-arm vibration syndrome, also known as Raynaud's Phenomenon	Disorder of blood vessels, usually in fingers or hands, which causes the affected area to lose color and feel cold or painful.

Common RSI	What are they?
<p>Thoracic outlet syndrome, a neurovascular disorder</p>	<p>Compression of the nerves and blood vessels in the shoulder, causing numbness in the fingers and weakening of the pulse. It can cause pain anywhere between the shoulder and the tips of the fingers. It results from the compression of blood vessels from activities that pull the shoulder back and down, such as carrying heavy bag packs and constant overhead motions such as stacking dishes or supplies.</p>

Now that we understand symptoms and causes of RSIs, we will look at the prevention and management of RSI in the next article.

Resources

1. International Labour Organization. Listening to our pain. Preventing workplace injuries and illnesses through ergonomics. World of Work. No. 21, September/October 1997
2. National Education Association. Repetitive Stress Injuries Handbook –Education Support Professionals. Website: <http://www.nea.org/esphome/nearesources/repstress-part3.html>
3. New York Committee for Occupational Safety and Health. Repetitive Stress Injuries Website: http://www.nycosh.org/workplace_hazards/PhysicalHazards/rsi.html

Repetitive Strain Injuries - Prevention and Management

In the previous article, Repetitive Strain Injuries - Are you a victim of it?, we highlighted that repetitive strain injuries (RSIs) are mostly occupation related, but such overuse injuries can be caused by activities outside of work, such as sports and hobbies, including badminton, tennis, golf or playing a musical instrument.

Furthermore, older workers are more prone to RSIs because the body's ability to repair the effects of wear and tear decreases with age.

RSIs are mostly caused by job demands and workplace conditions. If the conditions and demands of a job causes RSIs, they can be corrected by using 'Ergonomics', the science of matching jobs, systems, product and

environments to the physical and mental abilities and the limitations of workers, instead of making the worker fit the job. Prevention of RSIs is possible if either ergonomical changes can be made to accommodate the worker, by changing the physical set-up of the workstation or the position or way one does his tasks, or both.

The following are ergonomically friendly suggestions to avoid RSIs.

1. Avoid Repetitive Work

Muscles work by contracting and relaxing, stretching your tendons in the process. Repeated stretching and pulling can cause the tendon to swell and get sore. If the muscles and tendons do not get enough time for rest and recovery, the risk of injury is increased. This is because as muscles get tired from doing the same motion repeatedly, more effort is exerted to do the job.

Remedy

Rest the muscles doing most of the work to prevent tiredness. Take frequent “micro” breaks, in which you use different muscles to do the

task or pause for a few seconds. This relieves your muscles more effectively than uninterrupted periods of work with only one or two long rest breaks.

2. Avoid Awkward and Static Postures

A “neutral” body position is the most comfortable working posture, in which the shoulders are downwards and relaxed, with the arms close by your sides, elbows bent with your wrists and hands straight. Deviating from the neutral posture will increase the stress on joints, muscles, tendons, nerves, and blood vessels. For instance, if you work bent over and leaning forward, with your arms above shoulder level in a “fixed” or “static” posture, you are likely to stress the lower back and shoulders. Such static activities are very tiring and stressful, and can potentially speed up the wear and tear of your back and shoulders.

Remedy

Move around and change your posture often. Take “micro” breaks. If you have been bending or kneeling, switch to other tasks to rest your back and knees. Also, using the right tool for

your tasks can reduce awkward postures. For example, using an Allen key instead of a screwdriver can reduce twisting and bending of your wrist at awkward angles.

In addition, minimize static postures that are “out of neutral” as these put further stresses on your body. For example:

- Work tables, chairs and countertops should be designed to eliminate frequent bending and extended bending and leaning
- Organize work tables so that materials are within easy reach
- Keep arms and elbows low and close to your body while working and reach without stretching and straining
- Keep reaches below shoulder level
- Avoid stacking materials above shoulder height
- Keep your elbows at the height of the work counter
- Support your forearms with armrests or other

padded surfaces

- Have enough room in work area to use your arms while keeping your wrists straight

3. Avoid Prolonged Standing

Standing in one position for a long period of time can put stress on your spine, back muscles and legs.

Remedy

The stress caused by prolonged standing can be reduced by:

- Using foot rests, to alternate the weight bearing foot by shifting your weight often
- Stand with knees slightly bent to prevent locking, and thus relieving stress in the knees
- Take “micro” breaks; general rule is a 5-minute break for every 45-60 minutes of standing. Take this opportunity to change positions or move around

4. Reduce the Amount of Force You Use

Using a lot of effort & strength to do the job, even

small movements like pounding fingers on keyboard will increase the stress your body takes. Forceful movements such as pushing, pulling, tugging, and sliding objects put strain on your lower back. They also stress the muscles, tendons, and joints of your shoulders, arms, upper back, and legs. The more force you use, the more you risk fatigue and injury.

Remedy

When moving a heavy object, use trolley, carts or equipment designed for pushing instead of pulling. Pulling stresses your shoulders and arms compared to pushing. This is because when you push, your body weight is being used to an advantage.

Avoid pushing or pulling in an awkward posture as more force is required to move the object. Similarly, avoid pushing or pulling an object above shoulder height or below waist height. Modify your position to optimize your working position and strength.

Look out for large amounts of friction between the surface and the object as this increases the force used. Put a medium between the two to

reduce the friction i.e. wheels or sliding board.

5. Be Careful How you Lift

Faulty lifting techniques stress the back muscles, tendons, ligaments and spine. Even if the load is mildly heavy (less than 10kg), improper lifting can cause serious back injuries.

Remedy

The key to proper lifting is to keep the back in its natural position. Squat lifts put less stress on your back, but only if you can fit the object between your knees. Otherwise, attempt to fit the object as close to your body as you can. The best solution is to reduce the size and weight of the load and make repeated trips. Here are some tips for a safer lifting procedure:

- Stand close to load with feet apart
- Tighten stomach muscles and tuck in bottom
- Arch your lower back inward by pulling shoulders back and sticking out your chest, keeping spine in neutral position

- Keeping spine upright, bend knees or squat down
- Face load directly. Do not twist your shoulders to reach the load. Bring object close to the body. The closer the load to the body, the less pressure it puts on your back
- Use stronger thigh muscles rather than smaller muscles of the back for the lift
- Never pick up a load unless both feet are firmly on the ground, and the load is no higher than your shoulders. Minimize long reaches and avoid fast, jerky movements

6. Design Computer Workstations to Fit You

Workstations must consider a worker's ability to comfortably see and handle the work. Chairs with adjustable features and proper back support are essential to prevent injury and improve overall comfort and work performance. For example, the differences in chair height can affect the whole body.

If the chair is too high, it can:

- Press thighs against the table

- Press seat against back of thigh
- Reduce blood flow to the feet
- Make wrists bend up
- Force the head to lean forward and look down
- If the chair is too low, it can:
 - Raise knees higher than hips and encourage slouching
 - Raise shoulders and arms causing stress and fatigue especially if the table is at chest level.

Remedy

A good chair should have:

- Adjustable seat heights and depth
- Backrest that is adjustable for the height (up/down) and angle (forward/backward) to help support the lower back

Eye Strain

You have experienced tearing, fatigue of the eye, or headache after a period of intensive prolonged work at a computer, you may be suffering from eyestrain.

Eyestrain is a common affliction that can occur after intensive, prolonged work focusing on the computer or on the road while driving. More specifically, it is a strain on the eye muscles. Eye muscles can get strained when they are overworked or held in a sustained position for long periods of time, just like any other muscles in the body.

Signs and symptoms

Common signs and symptoms¹ include:

- Watery eyes (tearing)

- Sore, tired, burning or itching eyes
- Dry eyes
- Blurred or double vision
- Headache
- Difficulty in shifting focus between monitor and paper documents in your work area
- Increased sensitivity to light

Eyestrain associated with computer use is on the rise². A survey by Nanyang Technological University suggested that over 70% of the office workers reported eye strain in using IT³. The survey found eye strain and stress³ to correlate with the number of hours spent in front of the computer.

While eye strain generally do not have serious or long-term consequences, it is disruptive and unpleasant. It affects your productivity and personal life. Here are some steps to relieve eyestrain.

Methods to relieve eyestrain

You can reduce eye strain by taking the following

precautions.

- **Take vision breaks.** Throughout the day, give your eyes a break by looking away and focus on something other than on your screen. If possible, lean back, close your eyes for a few moments, and breathe slow and deep. Give yourself a five-minute vision break every hour. Do other work that does not require your eye to focus intensely, such as phone calls.
- **Lighting / Video display modification.** Lighting in the room should not be harsh and glaring. Place the screen to avoid a reflective glare from the windows or lights. Sit at least 50 centimeters from the screen, with your eyes gazing down at it, at about an angle of 20 degrees.
- **Practice eye relaxation techniques.** Eye relaxation techniques offer relief for tired and dry eyes, helping to prevent or reduce eye strain. (see here for some techniques)
- **Blink frequently.** We tend to blink less when working prolonged at a computer, resulting in dry eyes. Blinking produces tears that can help moisten and lubricate your eyes.

- **Consider using artificial tears.** Available in pharmacies, artificial tears can help relieve dry eyes that result from prolonged work at the computer.
- **Get appropriate eyewear.** If you are using glasses or contacts, make sure the prescription is appropriate for you.
- **Check your eyes regularly.** It is strongly recommended that you get annual eye check-ups by your Optician to pick up the eye problems at the early stage. Eyestrain can be due to specific visual problems, such as uncorrected refraction errors or binocular vision problems like accommodative insufficiency.

Adequate rest usually alleviates eye strain. However, if you suffer prolonged discomfort or notice a distinct change in your vision, you should immediately have an eye examination.

References:

1. American Optometric Association. Vision Discomfort Linked To Computer Vision Syn-

drome - Eyesight May Be Strained As A Result Of Improper Arrangement Of Computers. Website: <http://www.medicalnewstoday.com/articles/101348.php>.

2. Bergqvist U O and Knave B G. Eye discomfort and work with visual display terminals. *Scand J Work Environ Health*. 1994 Feb ;20 (1):27-33.
3. Palvia S. & Lai Lai Tung. IT use and incidence of stress by demographic factors: an exploratory study. *TENCON'94. IEEE Region 10's Ninth Annual International Conference. Theme: Frontiers of Computer Technology. Proceedings of 1994*

Its Good Business To Sit Up Straight

Improving office productivity is no longer only purview of HR managers, Operations managers or even CEOs. Today governments are getting in on the act as the search for greater productivity goes down the road of global outsourcing directly affecting national GDP figures. Eschewing hi-tech solutions and management productivity tools such as 'six-sigma', lets revisit a simple but effective age-old remedy – good posture.

Despite the advent to mobile computing and the rise of the 'road-warrior' class, 67% of office workers are more tied to their desk than they were two-years ago according to a new research commissioned by NEC-Mitsubishi.

The research surveyed over 2,000 adults in the United Kingdom in 2004 showed that the extra desk-time, poor desk ergonomics and work habits are forming a new threat to productive office-life. This condition, the 'Irritable Desk Syndrome', if left uncontrolled can quickly escalate persistent desk symptoms of irritation to chronic aches and pains.

One-fifth of Singaporeans suffers from back and neck pains

According to a Back Society of Singapore survey of over 1,000 adults, 18% of Singaporeans suffer from back and neck pains at any one point of time. This puts us in the same 'class' as developed countries such as the UK and US facing the same magnitude of back and neck problems.

In the UK, back pain alone cost over £5 billion each year in lost productivity with bad work posture being a major contributor. Yet, this global multi-billion dollar problem surprisingly need not require a multi-billion dollar solution.

In the NEC-Mitsubishi survey, 35% of respond-

ents admitted that it would be fairly simple to move their equipment into a place that would allow them to sit more comfortably and adopt a better posture, costing them little or nothing to do so.

Benefits of good posture

Never has the old refrain, "Sit Straight! Don't slouch", been more relevant than in today's context. While perhaps more for poise, confidence and dignity when meted out by schoolmasters, good posture from sitting or standing straight helps us avoid the strain it places on our muscles, joints, and ligaments beyond what nature intended. Besides helping us look more energetic, good posture actually helps us breathe better and avoid affecting the position and function of our vital organs in the abdominal region.

In preventing postural induced chronic pains, it is not enough to know what good posture is but actually maintaining it for prolonged periods. Slouching a few seconds a day does not lead to chronic bad backs. Slouching all day long is another matter altogether. Similarly, sitting or standing right for a just few moments a day is not going to prevent bad backs. We need to find and hold our posture 'right'

for most part of the day, all day if possible.

Sustaining Good Posture

The key to good sustained posture is a combination of ergonomics and active muscle control. Ergonomics helps provide us with the necessary support throughout the day. However, this is not sufficient. Ergonomically well-designed furniture and equipment are passive and provided little or no carry over effects. A simple example would be your office chair - once you get off your chair, it no longer provides you with the necessary support. This is where active muscle control comes in.

Active muscle control

One common reason most of us find it hard to maintain a good posture is simply that the key postural muscles are weak. General exercises such as jogging or sit-ups are not specific enough to strengthen these muscles. In fact, vigorous exercises tend to increase the load and shock your spine has to endure further accelerating wear-and-tear. Which exercises should you be doing then?

Here are two basic exercises that most of us would be able to do almost anywhere:

To strengthen the deep abdominal muscles to support your lower back:

- Tighten and lift pelvic floor up to the navel
- Pull your lower abdomen in
- You should feel your back tighten and waist drawn in
- Repeat three to four times.
- Repeat this entire exercise at least three times a day.

To strengthen the muscles support your neck:

- Relax the arms
- Pull your shoulders down and in
- Avoid arching back when drawing your shoulders in and down
- Repeat three to four times.

- Repeat this entire exercise at least three times a day.

Even as the fittest marathon runner cannot run forever without eventually collapsing from exhaustion, active muscle control alone is insufficient to sustain good posture all day long – good desk ergonomics and good habits such as taking breaks from prolonged sitting or standing positions are essential.

A lifestyle choice

While the costs of lost productivity to employers are enormous, we cannot neglect the quality of life impact it has on employees beyond work, unquantifiable in monetary terms. To borrow a quote from Dr. Halfdan Mahler, former Director-General of WHO - “Health is not everything. But without health, everything else is nothing”.

What is an Ergonomic chair?

People who are experiencing back pain know that the longer they stay seated for a stretch of time, the more pain they feel. It is a commonly known fact that getting a good ergonomic chair is beneficial to the health of the back. However, when asked to have a good chair, people begin asking, “How do I know if my office chair fits me? What makes a good chair?”

People are often unclear as to what actually constitutes an ergonomic chair. Ergonomics is about fitting the job to the person or the environment to the person. In the case of an ergonomic chair, it has to fit to the user so that the user can be in his or her optimal postural position. This will lead to less stress to the muscles, joints and nerves.



Therefore, an ergonomic chair must be adjustable and have key features to support and fit its user in such a position. Key features should include:

Features	Notes
Have a stable base	The chair should have at least 5 “legs”.
Allow for mobility	There should be roller wheels. If used on a carpeted surface, the wheels should be hard and are usually made of plastic. If used on a hard surface, softer rubber wheels are preferred.
Seat depth	Everyone has different thigh length. The seat pan or depth should be adjustable between 38cm to 43cm in depth

Features	Notes
Adjustable chair height	Offer a range from 35cm (the lowest) to 50cm (the highest)
Back-rest	The back-rest should ideally support up to the shoulder level. Chairs with low back-rests do not provide enough support for the upper back and can result in stress in the muscles of the upper back
Seat surface	The seat surface should be made of non slippery and breathable material. In the next series, we will teach you how to use the chair optimally and look at the ideal work-station.

Features	Notes
Chair angle	Chairs that allow the backrest to tilt should have the ability to lock the tilt or control the tension of the tilt. If the tilt tension cannot increase or lock, the backrest may not provide the user with enough support. The backrest tilt should also be independent of the seat pan and be able to tilt without affecting the seat pan.
Seat pan	The edge of the seat pan should have a curve front. This is to prevent contact stress to the back of the thigh

Features	Notes
Arm-rest	The arm-rests often get in the way of the table, and doesn't allow the user to pull the chair right into the table, forcing the user to sit on the edge of the chair. Arm-rests are not essential. If there are armrests, ensure that that they are adjustable downwards for clearance of the table. Armrests that can rotate inwards are available in the market.
Seat width	A minimum seat width of 48cm

