IN HAND

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RSIOOS
RSI & OVERUSE INJURY ASSOCIATION OF THE ACT INC

The Newsletter of the RSI and Overuse Injury Association of the ACT **Spring 2013**

News & Events

"Pain, Shame and New Ways Psychologists Can Help"

Speaker: Marion Swetenham, Pain Psychologist
When: 7pm, Thursday September 19th
Where: SHOUT, 1 Collett Place, Pearce (opposite Pearce shops)
Cost: Free, all welcome

"Mindfulness to Manage Pain"

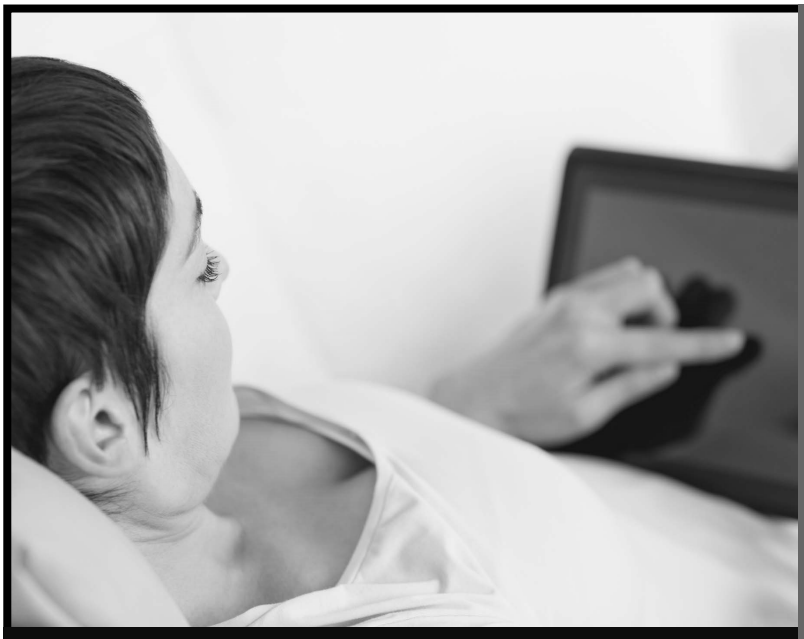
Speaker: Randolph Sparks, Psychologist from Higher Function Clinic.

When: 7pm, Thursday October 17th
Where: SHOUT, 1 Collett Place, Pearce (opposite Pearce shops)
Cost: Free, all welcome

The above talks are a part of the Chronic Conditions Seminar Series.

Helping people with RSI :

- *Telephone information service*
- *Referrals*
- *Guest speakers*
- *Events and social gatherings*
- *Treatment options*
- *Ergonomic devices*
- *Voice-operated computing*
- *Workers' compensation*
- *Tips and tools for daily life*



How safe are tablet computers? p 12

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Welcome to our new look newsletter, In Hand.

You'll notice that we've given our newsletter a makeover, with a fresh look and a new title. We hope you like the changes we've made and, as always, welcome any suggestions on how we can improve our newsletter in the future.

Please email us at admin@rsi.org.au or call us on 6262 5011 with any suggestions on topics that you would like to see covered in our newsletter or any tips or tools to help other members.

Letter to the Editor

Readers may be interested in the letter below from Keshab Baidya, a member who has a PhD in Ergonomics. He has recently written a book on theories of treatment for RSI based on traditional Indian ayurvedic medicine. If you are interested, you come into our office to have a look at a copy, or contact Keshab via email at keshabbaidya@hotmail.com.

Dear members,

Workers have suffered from Repetition Strain Injury (RSI) since 1713 but known with different names. In 1875 *The Lancet* published the following quote: "The constant repetition of any one act is liable in persons of a certain constitution to bring about a disability to perform that act". This suggests that there is a correlation between a repetitive works, constitution of the workers and their health problems. However, the researchers have not considered the constitution of the workers in their researches till now. This may be the reason that the researchers are unable to unfold the mystery of RSI.

Dr. William Sheldon divided the human embryology into ectomorph, mesomorph and endomorph in 1940. These three constitutions have different physiological and psychological traits. Some doctors do not study the constitution of patient before prescribing drugs, which may cause problems in the treatment of RSI.

Doctors are discovering the active chemicals in herbs and drugs are similar. Hence both are relieving health problems. Herbs will take longer time to cure due to less concentration of chemicals. The sufferers should take right type of herbs along with right type of diet for their constitution. In my book, *Understanding of Repetition Strain Injury (RSI) with Preliminary Proposal to Treatment*, (2012) I have explained how to identify different constitutions and also listed types of herbs and diet for each constitution.

Keshab Baidya

Do you have any ideas or comments that you'd like to share with other members? You can email us at admin@rsi.org.au or leave your comments via phone message by contacting (02) 6262 5011.

Bits & Pieces

Doctors Hit by RSI

Forty per cent of male doctors, and most female doctors, experienced repetitive strain-related neck, shoulder, upper and lower back pain at least once a week, according to a recent study by Cornell University. Over 30 per cent reported pain in the right wrist at least once a week. "These rates are alarming. When more than 40 per cent of employees are complaining about regular problems, that's a sign something needs to be done to address it," Alan Hedge, Professor of Human Factors and Ergonomics, said. "In a lot of hospitals and medical offices, workplace safety focuses on preventing slips, trips and falls and on patient handling, but the effects of computer use on the human body are neglected."

In another study, he found that more than 90 per cent of doctors and nurse practitioners used a desktop computer for an average of more than five hours a day. Hospital staff said that the amount of computer use at work was increasing, with more than two-thirds saying they had no input in the planning and design of their computer and clinical workstation. Only about 5 per cent had an expert knowledge of ergonomics. This is not good news for medical professionals in a computerised work environment.

Bad News for Gamers

There's been a lot of discussion in the gaming world recently about the dangers of RSI. The man who is overseeing the development of the next Smash Bros has a badly affected right arm. Masahiro Sakurai says "My arm hurts, and there is this chronic dull pain in my elbow joint as well. In the lower arm, there is this feeling of fatigue around the flexible muscles that turns into pain when I use a keyboard and game controller with my fingers."

He's had to cut days out of his normal schedule to recover and to the distress of many gamers, it's officially impacting on the games that he's been overseeing. In a recent interview, he said, "the reality, and very unfortunate reality of the situation is that it's still a considerable problem. I'm in a lot of pain. I'm in a position where I can't use the mouse at this point, so I'm using the trackball, and as the creative director behind an action game, that's a real critical issue, unfortunately."

Free Online Course for Chronic Pain

Macquarie University's Centre for Emotional Health is offering a free online course to help people manage chronic pain, anxiety and depression, as part of a research trial to develop an effective evidence-based online support program.

The Pain Course, delivered through its eCentreClinic, is in its second phase, following the success of the first randomised controlled trial completed 12 months ago.

Outcomes of the first trial, published in the journal *Pain*, revealed significantly greater improvements in participants' reported disability, anxiety and depression, with more than 95 per cent of participants reporting the Pain Course was worth their time, and they would recommend it to others.

Spike in Workers' Compensation Claims

According to Slater and Gordon workplace injury lawyer, James Mourdhuj, there has recently been a spike in workers' compensation claims for repetitive strain injury in manufacturing, assembly lines and construction industries in Queensland.

"The injuries are occurring because there has been a failure to rotate duties and give adequate rest to workers who are performing the same duties day-in, day-out. Regular breaks also help reduce the risk of injury as they give the body time to rest and recover," he said.

Mark Goodsell from the Australian Industry Group agreed that RSI needed to be taken seriously. "The greater risk can be on production lines, where you are standing in one position doing one movement over and over again. Sensible employees and employers are aware of these things."

Research in Brief

Chronic pain after carpal tunnel surgery

A four-year study has investigated the incidence of chronic postoperative pain (CPOP) in 324 patients who underwent carpal tunnel surgery. The French study found that a year after surgery, 12 per cent of patients complained of pain similar in character to what they had before, while 22 per cent complained of a pain different from the preoperative one and therefore considered as CPOP. This incidence is similar to the one observed after other major orthopaedic surgeries. A good reason to get a second opinion before surgery!

Belze, O., 2012, "Chronic pain after carpal tunnel surgery: Epidemiology and associated factors", *Ann Fr Anesth Reanim,* 31(12): 269-74

Mental load linked to muscle tension

A new study has tested the impact of sustained attention, vigilance and maintaining posture on muscle tension in fifteen participants. The results show that mental demands result in tension in the arm and shoulder girdle muscles and, to a lesser degree, in forearm muscles. This is especially significant for people with RSI and overuse injuries who experience pain and tension in their arms and shoulders.

Roman-Liu, D., et.al., 2013, "The influence of mental load on muscle tension", *Ergonomics*

Musculoskeletal disorders in IT

Work-related musculoskeletal disorders (WRMSDs) are common among computer professionals. A new study has looked into the prevalence of WRMSDs among IT professionals in India. The study found that WRMSDs were widely reported among this group, with 59 per cent reporting they had experienced some pain in the last 12 months. Of those, neck pain was the most frequently reported (30 per cent), while pain in the wrists and hands (14 per cent) and in the shoulders (13 per cent) were also common.

Vijay, S., 2013, "Work-related musculoskeletal health disorders among the Information Technology professionals in India: A prevalence study", International Journal of Management Research and Business Strategy, 2(2)

Reducing pain in office workers

A pilot study has examined the effectiveness of a biofeedback mouse in reducing upper extremity pain and discomfort in office workers. The biofeedback mouse vibrates if the hand is idle for more than 12 seconds. The feedback reminded users to rest the arm in a neutral, supported posture. The study found that using the mouse resulted in reduced pain and discomfort in the shoulder. This suggests that this could be a useful tool to reduce upper extremity musculoskeletal disorders among office workers.

King, T.K., et.al., 2013, "A pilot randomised control trial of the effectiveness of a biofeedback mouse in reducing self-reported pain among office workers [with consumer summary]", *Ergonomics,* 56(1): 59-68

Kinesio taping—does it help?

Kinesio taping is used to prevent and treat musculoskeletal injuries. Kinesio tape is a thin, adhesive, elastic cotton strip that is applied to injured areas of the body. A recent review has looked into the effectiveness of kinesio taping in treating musculoskeletal injuries. Two of the six studies reviewed looked at musculoskeletal injuries in the shoulder. The first found insufficient evidence to indicate that kinesio taping decreases pain and disability in young patients with shoulder injuries. The second study suggested that this treatment may provide short-term pain relief for patients with shoulder injuries. Overall, the review found that there is insufficient evidence to support the use of kinesio taping as an effective treatment for musculoskeletal injury, and suggests that further research in necessary.

Mostafavifar, M., et.al., 2012, "A systematic review of the effectiveness of kinesio taping for musculoskeletal injury", *The Physician and Sports Medicine,* 40(4): 33-40

Risk factors for carpal tunnel syndrome

A recent study has examined the incidence of dominant-hand carpal tunnel syndrome (CTS) in relation to personal characteristics, and estimated associations with occupational psychosocial factors and years worked. The study found that **personal** factors associated with an increased risk of developing CTS were body mass index, age and being a woman. In the **workplace**, risk factors were high job strain, while social support was protective. There was also an inverse relationship between CTS incidence and years worked among recent hires, which suggests the presence of a *"healthy worker survivor"* effect amongst the participants. That is, injured workers tend to leave their jobs earlier, while those who are uninjured stay on.

Harris-Adamson, C., et.al., 2013 "Personal and workplace psychosocial risk factors for carpal tunnel syndrome: a pooled study cohort", *Occupational and Environmental Medicine*

Tips & Tools — New Gadgets

Swivel Sweeper

This swivel sweeper has been recommended by a number of our members as a great way to do a quick cleanup on hard floors and carpet. While it certainly doesn't do a deep clean and won't replace a vacuum cleaner, it's extremely handy for a 10 minute sweep of your floors so that they look clean and you can relax. It works with rotating brushes that sweep the dirt into the head, which is very easy to empty, even for people with RSI. It's powered by a rechargeable battery that lasts reasonably well (45 minutes – that's quite a few uses), and is easy to remove and charge. The head has a low profile so that you can get it under furniture and the whole thing is very light at under 500 grams. It requires very little effort to push around, as the battery is doing most of the work. You do need to clean the rotating brushes to remove pet hair and threads, and that can be a bit fiddly even with the tool supplied. It costs about $100 and is available over the net.

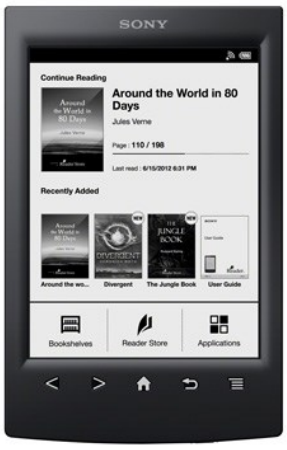
Palm Peeler

The" palm peeler" looks like a great idea. It hooks over your middle finger and rests in the palm of your hand so that the effort of peeling is transferred from your fingers to your arm. For people whose RSI is worst in their fingers, this seems like a very good idea. However, my impression is that it's not very well made — the blade on mine was rather blunt, for example. It tends to peel only a very narrow strip, so you're working quite hard to get your vegies ready for the pot. I much prefer the Oxo Goodgrips soft-handled peeler, which is a pleasure to use and lasts many years. Both are available from department stores.

Ann Thomson

Sony eReader

The eReader from Sony is a great choice for people making the switch from paper to electronic books. I have been using the Sony eReader for more than a year now and it is a convenient and easy-to-use alternative to reading heavy, bulky paperbacks.



Weighing only 164g, the Sony eReader is incredibly lightweight making the eReader perfect for travel. As a student, the eReader has been really useful. Its 2GB memory can hold up to 1,300 books. This means I can carry all my books and PDF documents easily wherever I go and have access to them with the touch of a button.

The E-Ink Pearl technology ensures the paper-like display reads like a real book. The screen is glare-free even in direct sunlight and there is no backlight, so it does not fatigue the eyes like a computer screen or tablet. The contrast and brightness can also be adjusted as necessary. No backlight also means the eReader has a long battery life, lasting up to 30,000 continuous page turns.

The Sony eReader can be held portrait or landscape and the font size can be adjusted to suit your personal reading needs. This is a great feature for someone who has trouble reading small-size text. For people with RSI, one of the best features is the ease of turning pages. Pages are turned with a simple swipe of the touch screen or, alternatively, can be turned using the navigation buttons below the screen.

Swiping tip: you can use your knuckles or a pen instead of your fingers. Swiping can be hard for people with RSI, so switching between swiping and a navigation button is a good idea.

Electronic books can be purchased online at the Sony Reader Store (au.readerstore.sony.com) and loaded onto the eReader via a computer. WiFi capabilities also allows for books to be purchased straight from the eReader directly.

Rebecca Cuzzillo is the Clerical Assistant at the RSI Association.

Mindfulness to Manage Chronic Pain

Randolph Sparks is a psychologist specialising in chronic pain and mindfulness. He works at the 'Higher Function' clinic in Civic and he is a guest lecturer at the School of Psychology at the Australian National University. In April this year, Randolph gave a public seminar for the Association on how we can use mindfulness to manage chronic pain. This is an edited version of his talk.

Pain and danger

In order to feel pain, a sensation must be interpreted at some level as dangerous. For instance, there may be a time when you have noticed a bruise but don't remember hurting yourself. There must have been some blunt force trauma but you don't remember feeling any pain. This is because there was no danger signal. While this is not always the case, it is a general rule that there has to be some message of danger in order for us to feel pain.

Danger will activate a system in our brain that allows us to cope with it, called our danger response, or our "fight or flight" system. Our danger response is part of what we refer to as the reptilian brain, a series of areas that control our other survival mechanisms, such as eating, breathing and sleeping. Our frontal lobes, on the other hand, control higher order thinking including creativity, planning and positive emotions.

When we are in danger, our fight or flight system will fire up and can override our frontal lobes. This is because sheer survival trumps higher order thinking. So when we are in danger, we cannot easily access our capacity to be creative, or make plans, or think positive thoughts. We are going to react physically, emotionally and cognitively to survive.

Physically, our breathing is going to move to the upper chest, as hyperventilation will help to oxygenate our muscles and give us more energy to run or fight. Our blood flow will go to our extremities, our muscles will tense, we start to sweat more, our digestive system switches off and our immune system is compromised as our body is flooded with adrenaline and cortisol.

With our frontal lobes less accessible, our emotional response will be limited to our amygdala, which controls two emotions—fear and anger. These are really important survival emotions. Fear will help you run away really fast, and anger will help you to stay and fight.

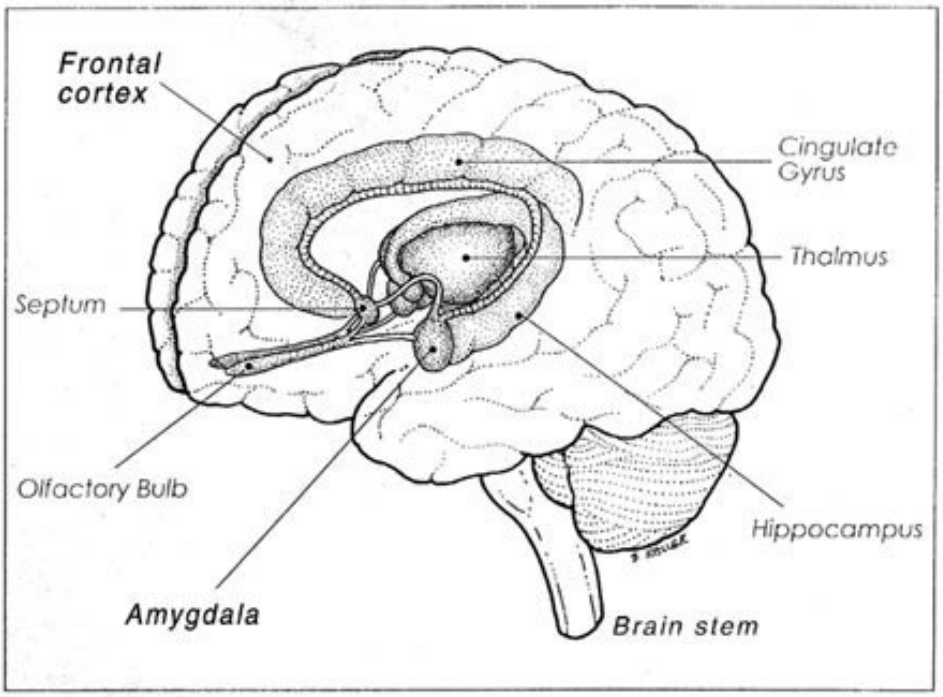
For a person with chronic pain, persistent continual messages of danger are constantly activating the body's danger response. This results in feelings of being overwhelmed and in some cases, depressed.

Cognitively, our thinking processes are going to change to protect us. Firstly, positive information becomes irrelevant when we are in danger. Secondly, we are constantly on the look-out for danger and we are more likely to interpret experiences as threatening. And finally, we have to instantly categorise information and we shift into black and white thinking—safe or dangerous, on or off, all or nothing, fight or flight.

When someone is in pain, their brain has interpreted the current situation as dangerous. The frontal lobes will be compromised, the body will go into survival mode and they will experience these changes, physically, emotionally and cognitively. This is very problematic, particularly for people with chronic pain.

For a person with chronic pain, persistent continual messages of danger are constantly activating the body's danger response. This sets our threshold up higher so it takes less for our system to react. This results in feelings of being overwhelmed and in some cases, depressed. We become depressed because we cannot access our frontal lobe capacities—we cannot plan ahead or be creative, we cannot feel positive emotions or process new information.

There are two ways that we automatically try to deal with thinking about our pain. This is where the famous "fight or flight" response comes in.



Dealing with pain

There are two ways that we automatically try to deal with thinking about our pain. This is where the famous "fight or flight" response comes in. We may automatically fight or flee.

If we choose to fight there are often two strategies — equally as harmful. The first is that we catastrophise. We continuously ask ourselves "what if?" "what if this happens?" "what if that happens?" And we become overwhelmed and anxious. The second strategy is rumination. We spend time thinking about our pain, but we end up thinking in loops. Rumination of this sort can often lead to depression.

Our other automatic response when faced with danger is flight. We avoid our pain. But this presents us with a few problems. In general, avoiding something means that we are expending energy on it and we are giving it importance. If we try to avoid our pain, we are making it more dangerous because we are telling our brain that it is important.

Other strategies

When it comes to persistent pain, both fight and flight are unhelpful options. They can however, be appropriate for immediate pain, as we may actually be in danger. With persistent pain, what we need to do is down-regulate our danger response in order to access our frontal lobe functions. It is important for us to manage this system so that we can work with our thoughts constructively. Breathing exercises and muscle relaxation are really important strategies that can help us to calm down. One of the first things to happen when the danger response is activated is that our muscles tense and our breathing moves to the upper chest. Tense muscles and shallow breathing tell the brain that we are in danger. If we relax our muscles and take deeper breaths, we are telling the brain that we are safe. The message goes from the body to the brain and opens the pathways to our frontal lobes.

A really powerful **breathing technique** is to breathe deeper and to breathe **out** for longer than you breathe **in**. When we breathe in, we are activating our system, when we breathe out, we are calming our system down. If we breathe in for one count and out for two counts, then we can calm our system quickly.

This is one lesson we can take from smokers. People who smoke often talk about the calming effect of cigarettes, despite nicotine being a stimulant. The calming effect does not come from the cigarettes themselves, but how smokers breathe when they smoke one. We need to practice breathing like smokers—but please, without the cigarettes! Remember to breathe deeply and out for longer than you are breathing in, when you need to calm your system.

Progressive muscle relaxation is also a good technique to down-regulate our system. This involves tensing and releasing each muscle group in the body. When we experience pain we need to adopt techniques like this in order to tell our brain that we are safe and access our frontal lobe functions.

Mindfulness

This brings us to **mindfulness.** Mindfulness is another way to down-regulate the system. It is a unique strategy that can help us to deal with the fight-or-flight dilemma. Mindfulness, in its most basic form, is about being in the present moment. Catastrophising is thinking about the future, asking the "what if" questions. Ruminating is thinking about the past, mulling over it repeatedly. Ignoring the situation is an avoidance of the present moment. Mindfulness, therefore, walks a middle path between fighting a situation and trying to get away from it. It is about being **with** your experience in the present and down-regulating in that way.

Mindfulness walks a middle path between fighting a situation and trying to get away from it.

Meditation can be seen as a kind of mindfulness gym, it is the hard work of mindfulness, exercising the mindfulness muscle if you like. Brain-imaging studies have shown that when people meditate, they increase frontal lobe activation and decrease amygdala activity, resulting in less fear and anger, and more positive emotions during meditation. Mindfulness is much more than meditation, however; it is about present moment awareness, it is how we use our attention and is about coming out of autopilot.

Mindfulness is about asking ourselves a series of questions. We can ask ourselves objectively, what are my physical sensations in this moment? What am I experiencing emotionally? What am I thinking? When our system is activated, when we are in survival mode, our response is automatic. But if we can ask ourselves these questions, our frontal lobe activates and we can view our own experience objectively. This is called meta-cognitive awareness, or the ability to objectively observe our own experience.

We want to be able to do this during both pleasant and unpleasant experiences. If we are present while we are doing something we enjoy, then we are able to enhance the experience and enjoy it more. If we are present while we are doing something we do not enjoy, when we are experiencing pain, for instance, then we are able to get accurate information and make informed decisions. Remember that catastrophising and ruminating are keeping our attention away from what we are actually doing at the present moment, and so can serve to "rob" us of experience.

Mindfulness teaches us that thoughts are not facts, emotions are not facts, sensations are not facts. They are interpretations. What is happening is real but our brain needs to interpret it before we become aware of it. We can take a lesson from Shakespeare here, who once said, "there is nothing either good or bad, but thinking makes it so". Most of our interpretation occurs automatically in the brain. If our fight or flight system is activated, then we often interpret things as threatening or negative. What we want to do is come out of autopilot and change our relationship to our thoughts.

This is the fundamental difference between mindfulness and cognitive therapy as a technique to deal with pain and other conditions. Cognitive therapy asks us to catch negative thoughts and change them to positive ones. Mindfulness, on the other hand, asks us to change our relationship to the thoughts and not the thoughts themselves. And in my experience, I have found that it is much easier to change your thoughts once you have changed your relationship to them.

Someone who has depression, for instance, may repeatedly have the thought "I am worthless". Mindfulness can help this person to change their thinking to recognise this thought and say to themselves instead, "oh hey, there is my ‘I’m worthless’ thought again!" They have changed their relationship to the thought where it is now just a thought, not a reality.

There is a three-step process that can help us when we feel pain or when we have any negative thoughts:

1. Acknowledge the pain, acknowledge the thoughts. Do not try to ignore them.
2. Down-regulate. Take some deep breaths, relax your muscles and open the pathways to your frontal lobe functions.
3. Ask yourself, "what am I doing?" Use all of your senses to focus on what you are actually experiencing in the present moment.

When we practise this three-step process, over time it will become a two-step process. When you experience pain or negative thoughts and acknowledge them, you may realise that you have not yet activated the danger response system. If it hasn't been activated, then bring your attention to what you are doing—feel your feet, taste your coffee, listen to what is around you. If it has been activated, then down-regulate before bringing your attention to the present. This is using mindfulness directly. We want to reduce our fear of pain and that means coming to it and being there in the moment.

Rebecca Cuzzillo

iPads in Schools

The Victorian Department for Education and Early Childhood Development (DEECD) has begun testing the usefulness of using iPads in schools across the state. The "iPads for Learning" trial is an Australian first and aims to examine the impact iPads have on our students' learning at home and at school, as well as how iPads can benefit and transform teaching practice.

Experts are not convinced that iPads offer anything more to students than conventional laptops. However, Victorian Education Minister Martin Dixon says the trial has been "very positive". He argues that the major benefit of iPads over laptops is that they are cheaper and more portable. However, he has his concerns too. iPads cannot run advanced software and the touch-screen keyboard is far from suitable for typing long essays.

Expert Dianne Chambers from Melbourne University has said it is still too early to tell whether iPads are better than laptops. The Victorian trial is still ongoing, but what is clear is that opinions are divided. Even students involved in the trial have their concerns. One Year 5 student from Ringwood North Primary School has said that while her iPad was "fantastic", she has heard some students "complain that we use them too often".

Rebecca Cuzzillo

http://www.theage.com.au/victoria/schools-ponder-if-an-apple-a-day-keeps-ignorance-at-bay-20110730-1i5kr.html
http://www.ipadsforeducation.vic.edu.au/

Does acupuncture work for overuse injuries?

Scientific interest in researching the effects of acupuncture has been increasing in recent years. An international team of experts recently published a report which combined many of the studies into acupuncture and **chronic pain,** reaching the conclusion that acupuncture is quite effective in reducing pain. These researchers combined the results of 29 randomised controlled trials of acupuncture with over 17,000 patients involved. Conditions included back and neck pain, osteoarthritis, chronic headache and shoulder pain. In these studies, patients were given either true or sham acupuncture.

Acupuncture is effective for the treatment of chronic pain and is therefore a reasonable referral option.

Sham acupuncture involves placing needles fairly superficially in non-traditional positions. It's used to control for the placebo response, just like a fake pill in studies of pharmaceutical drugs. However, there's a problem here: it looks like sham acupuncture actually works to some degree, with MRI studies showing that it stimulates various body systems, but in ways that are not the same as real acupuncture. It could still be effective, though!

Acupuncture is fairly popular among people with **fibromyalgia**, with one in five using it within two years of diagnosis. The Cochrane Collaboration, an international government-supported research collaboration on evidence-based medicine, reviewed acupuncture for fibromyalgia and found nine trials with 395 participants. Some of these trials used electroacupuncture and the rest used manual acupuncture. The authors concluded that there was some evidence that acupuncture improves pain and stiffness in people with fibromyalgia, and that "electroacupuncture is probably better than manual acupuncture for pain and stiffness reduction and improvement of global well-being, sleep and fatigue." Effects lasted for up to one month but were not maintained at a six-month follow-up.

Electroacupuncture is quite similar to traditional acupuncture in that the same points are stimulated during treatment. As with traditional acupuncture, needles are inserted on specific points along the body. The needles are then attached to a device that generates continuous electric pulses using small clips. These devices are used to adjust the frequency and intensity of the impulse being delivered, depending on the condition being treated. Electroacupuncture uses two needles at a time so that the impulses can pass from one needle to the other. Several pairs of needles can be stimulated simultaneously. (Acupuncturetoday.com)

Nine research studies on acupuncture to treat **shoulder pain** were analysed by scientists at the Cochrane Collaboration. Together, there were 500 participants who had either acupuncture, fake acupuncture, ultrasound, gentle movement, or exercises as therapy. Unfortunately, most of the studies were small and not of the best quality, and the conclusion was that "there is not enough evidence to say whether acupuncture works to treat shoulder pain or whether it is harmful. From the little evidence that there is, acupuncture may improve pain and function over the short term (2 to 4 weeks)."

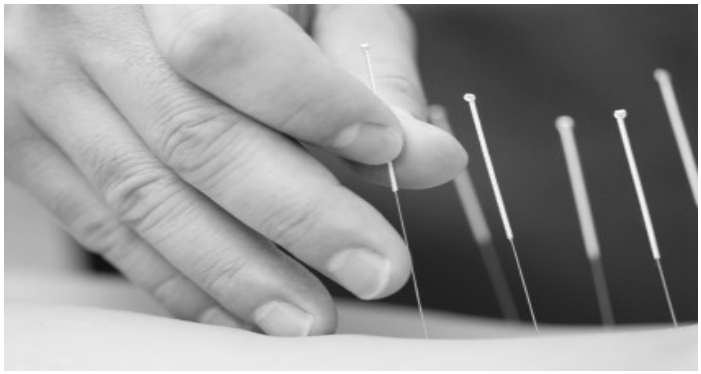
For elbow pain, studies were unfortunately again of poor quality and very small. The authors in this Cochrane study concluded that "there is insufficient evidence to either support or refute the use of acupuncture in the treatment of lateral elbow pain." There were studies which demonstrated needle acupuncture as being of short-term benefit with respect to pain, but this benefit did not last more than 24 hours.

The results were more encouraging for **neck pain.** Cochrane Collaboration researchers found 10 trials with 661 participants for acupuncture as a treatment for chronic neck pain. They concluded that "there is moderate evidence that acupuncture relieves pain better than sham treatments and patients reported less pain at short-term follow-up." And there was further

good news: "acupuncture treatments appear to be safe and only minor, transient and benign adverse effects were reported in the trials."

There is also good news for people with **tension-type headaches**. Two large trials found that patients who received acupuncture had fewer headaches, with 47 per cent of patients receiving actual acupuncture reporting a decrease of at least 50 per cent in the number of headache days. The authors conclude that "the available evidence suggests that acupuncture could be a valuable option for patients suffering from frequent tension-type headache."

However, in many of these studies, acupuncture was reported to have a relatively modest effect. The question is, though, **modest compared to what?**



"I think the benefit of acupuncture is clear, and the complications and potential adverse effects of acupuncture are low compared with medication."
Dr Lucy Chen, pain specialist, Massachusetts General Hospital.

One medical writer points out that while acupuncture might not be as effective as patients would like, neither is the most commonly used medically-prescribed form of pain relief, non-steroidal anti-inflammatory drugs. A Cochrane trial found that the effect size of these drugs for various pain conditions was "small". And the side effects of these drugs can be serious, including damage to the kidneys as well as the stomach.

Overall, the evidence suggests that acupuncture is worth a try for some chronic pain conditions with relatively few side-effects. It could also be worth trying electroacupuncture for some specific conditions.

Ann Thomson

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Deare JC, PEDro, *Acupuncture for treating fibromyalgia*, 2013, www.search.pedro.org.au/pedro/browserecord.php?recid=633

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Tablets: An RSI Risk?

First the Blackberry thumb, now the tablet neck?

For the last few years we've had an iPad at home. It is actually my iPad—I got it as a gift for my birthday. In reality, however, I rarely get to use it. My children have pretty much confiscated it and use the iPad as a replacement for the TV. When my husband and I don't allow them to watch TV, they use the iPad to go on Youtube to watch old episodes of Spangas [Dutch TV program about students at a High School called Spangalis].

As parents, we are not particularly pleased with this development. Surely staring at a little screen for hours on end—don't think my kids stop at one episode!—cannot be good for their eyes. But then again, is there evidence that staring at an iPad for long periods of time has negative consequences? The iPad (and other similar tablets) has not been around for very long and little research has been done on the effects of extensive iPad use. The PC and laptop both have user standards documentation but none have been developed for the iPad thus far.

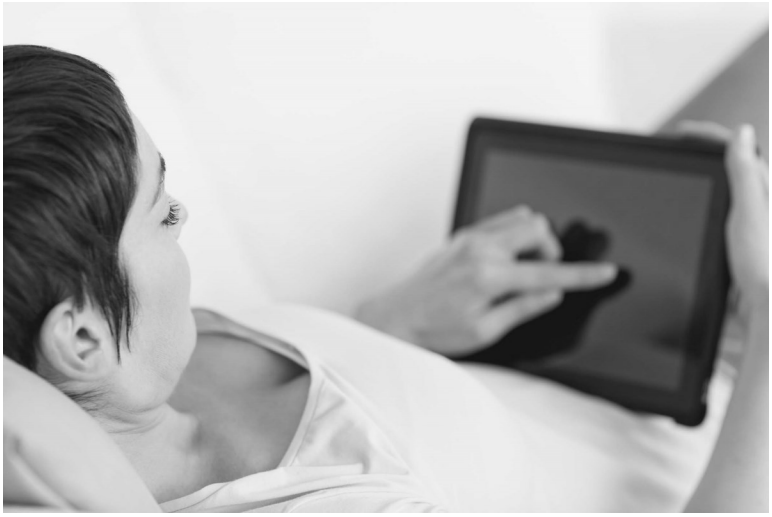
Reason to be worried?

Despite not having user standards in place, there have been warnings about iPad usage. Kerein Earney (Chief Executive of the Chiropractors Association of Australia) has stated that children can suffer from permanent skeletal damage when overusing tablets and smartphones. Often when kids use these devices, they are slumped in a chair with their head down, causing a large amount of pressure on the head. John Pappas (Medical Director of the Beaumont Centre for Pain Medicine in Michigan) has said that the continuous use of tablets can cause many forms of RSI in the fingers and hands. So it seems there are reasons to be worried.

On the other hand there are also positive stories. For suffers from fibromyalgia for example, using a tablet can actually offer some relief as there can be more flexibility in one's posture when using tablets. "The beauty of tablets and mobile devices is the flexibility they offer", says Jack Dennerlein, Director of the Occupational Biomechanics and Ergonomics Laboratory at Harvard School of Public Health. "You can use them almost everywhere, and in multiple ways. You can hold them on your lap or simply in your hands. The issue is that some people end up having really bad posture when using these devices and in the long-term this can lead to discomfort."

Experimental research

Dennerlein and his team recently carried out experimental research to determine the effects of the use of tablets on the head, neck and shoulders. They tested the tablet when used for a number of purposes and in a variety of different postures. The team found that the posture in which consumers use their tablet depends on the purpose for which the tablet is used.



They divided the reasons for tablet use into four broad categories and set-ups:

- Surfing the internet and reading (Internet-reading set-up)
- Playing games (Gaming set-up)
- Reading and replying to emails (Reading-email set-up)
- Watching movies (Movie set-up)

They also differentiated between the four main postures tablets are used in most frequently. The tablet can be held in the lap, or on a table. A tablet

can also be used in a tablet docking station, in which case it is placed at a relatively small angle, also called the 'movie set-up' (see figure 1). During the experiments they asked participants to complete a set of tasks while using a tablet in the four different set-ups. The researchers then measured the angle of the head and neck while completing the tasks (see figure 2 on next page).

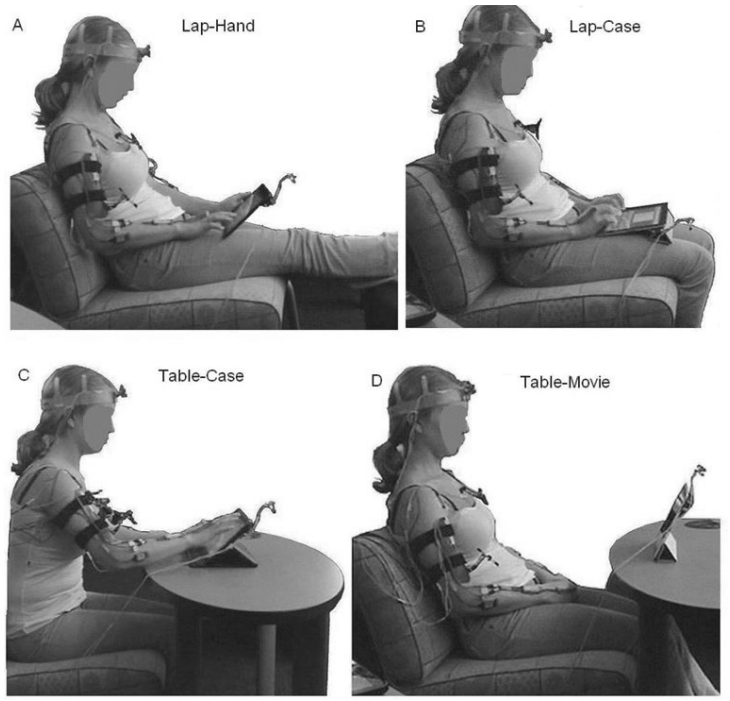


Figure 1

Apple vs Motorola

Throughout the experiment, two types of tablets were used: the Apple iPad2 and the Motorola Xoom. The official tablet docks were also used in the experiment. It should be noted that the docks of both brands cannot be placed at exactly the same angle: the iPad2 dock can be set at either a 15 or 74 degree angle, while the Motorola Xoom can be set at either a 45 or 63 degree angle. The experiment will show that the angle in which a tablet is used has substantial consequences.

Straining head and neck

An important finding of the experiment is that, compared to traditional PC users, tablet users bend their necks much more. **The most neutral posture** is when using the **tablet movie set-up**. All three other set-ups cause the head and neck to bend between 15 and 25 per cent in excess of the 'neutral' flexion of a normal posture. Generally speaking, the head and neck need to bend less when using a tablet on a table than when consumers hold the tablet on their lap.

The study found significant differences between the iPad2 and Motorola Xoom tablet, with bad news for devoted Apple users. As the iPad2 dock creates a smaller angle than the Motorola Xoom dock, iPad users need to bend their heads more when using the tablet. The iPad2, therefore, needs to be held or placed closer to the body compared to the Motorola Xoom. (It is worth noting here that this research was sponsored by Microsoft.)

The research team concluded that long-term tablet use can cause severe strain on head, neck and shoulders. They advise users to change posture at least every 15 minutes when using a tablet. Another interesting conclusion of the experiment is that the type of tablet dock consumers use can make all the difference. As mentioned above, the iPad2 dock has a much smaller angle than the Motorola Xoom dock, which causes users to strain their neck more. This, however, does not mean that a larger angle is better: try, for example, typing at a 45 degree angle without hurting your wrists …

The least taxing posture turns out to be the 'movie set-up' with the tablet in the dock on a table. More precisely, the least taxing interaction with a tablet is non-interaction. Put the tablet on the table and look, but don't touch.

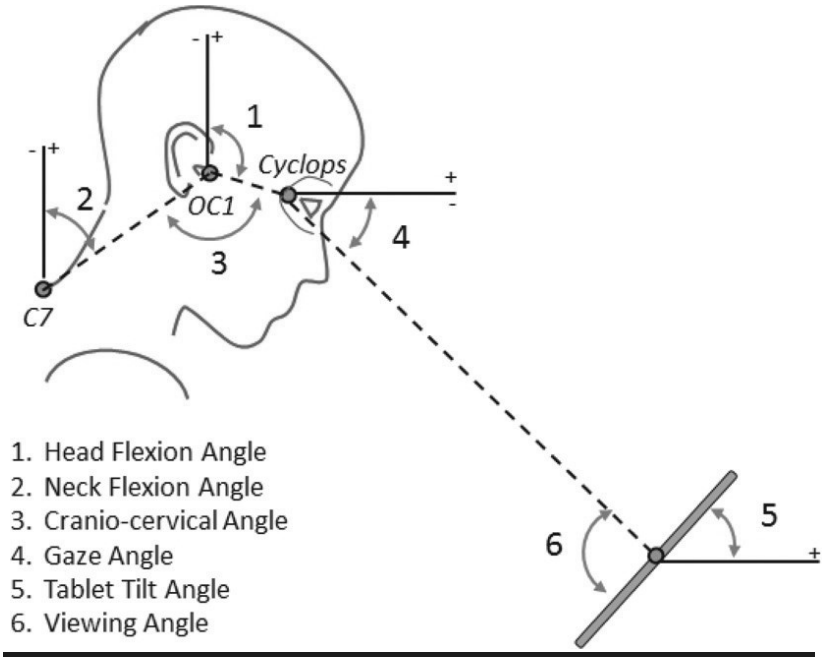


Figure 2

Future research

This research has only tested the effects of tablet usage on the head, neck and shoulders. It would be interesting to test the effects on other parts of the body, for example, the hands, arms and back. This research is also limited to studying two postures: sitting in a sofa without armrests and sitting at a table, back straight. Many more postures are of course common when using a tablet, for example, standing up, lying down or using a tablet when squeezed into a seat on trains or planes. Another limitation of this experiment is that the tablet is only held in landscape mode, while many applications are developed to be viewed in portrait mode.

A last remark about the size of the tablet: for this research the team still used 'standard' size tablets. In the meantime, however, the market has evolved and new size tablets are available (smaller than a tablet, yet larger than a smartphone). Rumour has it that Apple is about to release a new iPad with a smaller screen. In fact, new tablets come on to the market so frequently that it becomes difficult for research and experiment to keep up with development. On the other hand, the speed of change might actually make it less likely that people will develop any long-term usage injuries, similar to the SMS-thumb giving way to the Blackberry-thumb.

Sustainable tablet use

So, what is the safest way to use a tablet? Clear guidelines have not been developed yet, but, from an ergonomic point of view, we can make a few suggestions.

When using a tablet your posture should remain as neutral as possible. Keep your neck straight, relax your shoulders and let your arms hang to the side of your body. Most physical strain is caused when the tablet is placed or held in an indirect line to the eyes. It is therefore beneficial to try and hold your tablet right below eye level with your head and back in a neutral relaxed position. If you need to type, you should probably consider getting a separate keyboard. Typing on a tablet is far from ideal; you cannot 'feel' the keys and will therefore make more mistakes. A keyboard also takes up space on the screen. A separate keyboard makes typing easier and will be less physically straining.

Use common sense

What sort of advice would I give about using a tablet? First of all, the advice I often give in many situations: *use common sense*. Hanging on the sofa all day is not good for anyone, whether it is watching TV or using the iPad or any other activity. Go and enjoy some more time outside when you can. And, just to be sure, we've also activated the parental control on the iPad …

Annemiek Hutten

Translated by Ellen Poels from the August 2012 issue of the Dutch RSI Magazine. Thanks Ellen!

http://www.foxnews.com/health/2012/01/30/kids-suffering-injuries-caused-by-excessive-use-tablets-and-smartphones/
http://www.telegraph.co.uk/health/healthnews/9079334/iPads-carry-RSI-risk.html

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Swimming for RSI
Injections for RSI
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