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Healthy computing

Ergonomics and comfort at work

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Healthy Computing

Strategic Business Systems, Inc.



- **Based in Ramsey, Bergen County, New Jersey**
- **IBM Business Partner**
 - Power Systems hardware, software, development, consulting

Where to download these slides

From my site

<http://alanseiden.com/presentations>

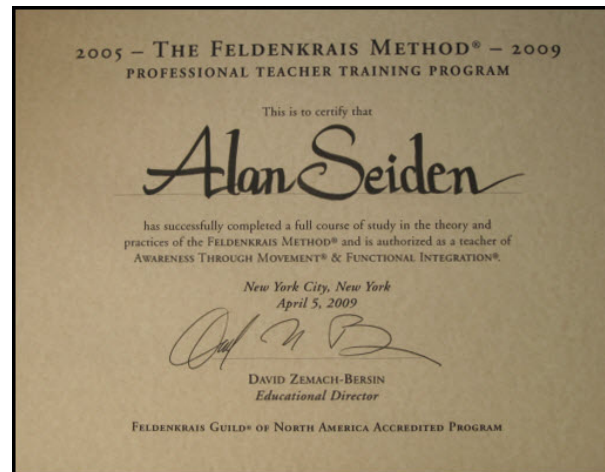
On SlideShare

<http://slideshare.net/aseiden>

The latest version will be available on both sites

About Alan

- **When not doing PHP, I help the deskbound**
 - **Author of ergonomics articles for MC Press Online**
 - **Guild Certified Feldenkrais Practitioner^{CM}**



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Why I developed this talk

- **I saw colleagues getting hurt**
 - Not from some high-impact sport, but from working at a computer
- **What they kept saying:**
 - “Ow, my back hurts—I have arthritis”
 - “Ow, my neck...my arm...”
- **It’s often the way we sit, or the position of our workstation, that is causing strain**
 - Focusing on getting the job done, we unwittingly contort our bodies to achieve our heroic deeds

My interest in healthy computing

- **Gawky childhood**
 - Slouched; could not catch a ball
- **Grandma said, “Posture! Posture!” but couldn’t help me improve**
- **In my late 20s, the combination of computing and trombone playing was causing repetitive strain injury (RSI)**
 - Numb forearms, tingle in hands, stiff back
- **I began to study how to improve**
 - Workstation organization
 - My own body organization and coordination

What we'll do today

- **Learn how to sustain healthy habits at the computer to remain pain free**
- **Discussion points**
 - Common pitfalls and solutions
 - Tips for arranging your workstation
 - The importance of short, frequent rest breaks
- **If you wear bifocals or trifocals, watch for an important topic**
- **We'll do a simple movement lesson that uses slow, gentle movements to refresh the mind and body**

The Problem

Computer workers are suffering

- **Common complaints**

- Back pain
- Stiff neck or shoulder
- Numbness in arms or hands
- Eyestrain

- **Symptoms of repetitive strain injury (RSI)**

- **RSI accounts for 60% of US occupational injuries, or 1.8 million workers (US Bureau of Labor Statistics)**

Why does it happen?

- **We stare at a computer screen all day**
- **“The eyes lead the body”**
 - James Sheedy, O.D., Ph.D., Dean of the College of Optometry, Pacific University, Forest Grove, Oregon
 - The body automatically positions the head and eyes for visual tasks even if this causes contortions elsewhere in the body
- **We create our own discomfort without even knowing it**

Help your fellow computer workers

- **Ask a coworker to observe your head, neck, and shoulders as you work at the computer**



Guidelines

Basic recommendations

- **Monitor position**

- Directly in front of you, to reduce twisting of neck
- ~ 20-26 inches (arm's length) from your head

- **Chair position**

- Thighs parallel to the floor. Knees at about the same level as the hips or slightly lower

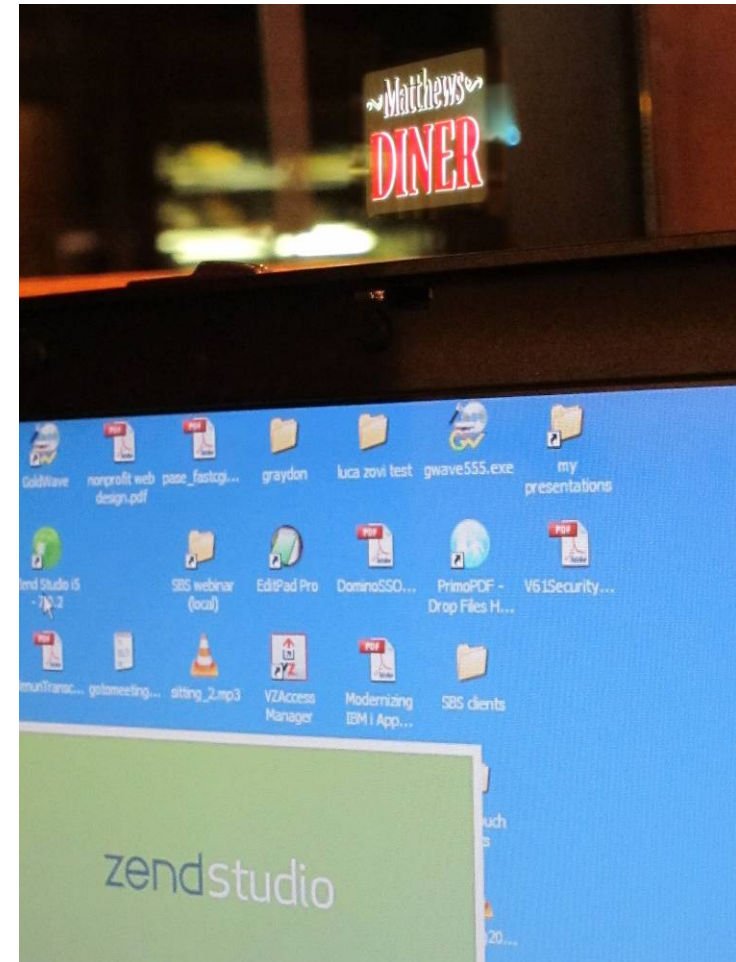
- **Keyboard position**

- Arms bent at 90°. Each wrist in a straight line with its arm

—National Institutes of Health, Division of Occupational Health and Safety: http://dohs.ors.od.nih.gov/ergo_computers.htm

The Mystery of Matthew's Diner

- **When I am working on deadline, I focus best at Matthew's Diner in Waldwick, N.J.**
- **Menu item #7, omelet with broccoli and Swiss, sets the scene**
- **Why?**
 - The coffee?
 - White noise from other patrons?
 - My brain runs best on cholesterol?



I thought about it scientifically

- **Why does this guy look relaxed yet focused?**
- **Head and arm placement is not bad, but not perfect**
 - Bad: table too high for arms
 - Arms should be bent at around 90°
 - Good: back seems happy resting against the booth's back-rest
 - Bad: head must tilt forward for long periods



What's the solution to the mystery? What's good about this place?

It's the chair (bench, in this case)

- **The coffee helps, but....**
- **Height of bench is perfect for me**
- **Positions my knees about even with, or slightly lower than, my hips**
- **Provides a relatively firm surface that helps my skeleton/spine to organize upright posture**



What I'm doing with this information

Took tape measure to diner and measured height of bench: 18.5 inches + ¼ inch vinyl padding.

- **I will try to adjust my chairs to that height**
- **Everyone is different (I'm 6'1") and must seek personal chair nirvana**



Alan's top tip

Get up once in a while

Department Of Health And Human Services Recommends Standing At Least Once A Day

JANUARY 31, 2011 | ISSUE 47-05

WASHINGTON—As part of an ongoing campaign to promote physical fitness and well-being, the Department of Health and Human Services is urging all Americans to set aside time at least once a day to stand.

Speaking to reporters Thursday, HHS Secretary Kathleen Sebelius extolled the numerous benefits of regular standing, explaining that it can be central to maintaining a healthy lifestyle.

[Enlarge Image](#)

HOW TO STAND



"We recommend placing two feet on the ground shoulder-width apart, straightening out the legs, and then locking the knees to hold an upright position," said Sebelius, adding that just about anyone can start standing regardless of age or prior experience. "Supporting your own weight while keeping your torso erect won't just make you feel better. It will also force much-needed blood to your legs—and the positive effects will continue long after you've sat back down."

"So get out there and stand," she continued. "One to two times a day, if possible."

In conjunction with the announcement, HHS officials are distributing a free poster to the public with guidelines on how to stand safely and efficiently. The instructions, along with illustrations to show each separate phase of movement, caution beginners to rise slowly, brace against a sturdy object for support, and always be under the supervision of a spotter.

While the poster lists as an initial goal the ability to stay up for five seconds, it suggests those who have mastered the basics aim for at least three minutes of moderate standing per session. Advanced standers, classified as those who can easily maintain the position for 10 minutes or more, are urged to also try lifting their arms to eye level and, if they're feeling up to it, taking a step.

"We don't want people to push themselves too hard too quickly and get hurt," said HHS Deputy Secretary Bill Corr, noting the importance of saving enough energy to bend one's knees and sit back down. "If done correctly, though, standing can be a fun activity people actually look forward to each day."

According to surveys conducted by the Pew Research Center, the number of Americans who stand daily has dropped 32 percent in the past decade. In an effort to reverse the trend, HHS is hoping to increase its education and outreach programs so that the majority of citizens are standing regularly by 2016.

Dallas resident Joshua Miller, who recently signed up for a standing class at his local gym, told reporters that while adding a standing regimen to his daily routine has at times been challenging, he believes that he will eventually see results.

"You can really feel it in your legs; it's hard work," Miller said. "There are some days when I'm so exhausted that the thought of putting on my clothes and standing just sounds like the last thing in the world I'd want to do, but I try hard to push through. I know the more I stand, the more energy I'll have later on for other things, like eating."

HHS officials were also quick to note that proper stretching and breathing techniques should be performed before and after every session in order to avoid common standing-related afflictions such as vertigo and stander's knee.

"Officials say standing for three minutes every day could have significant health benefits."—*The Onion* (satirical newspaper)



<http://www.theonion.com/articles/department-of-health-and-human-services-recommends,19000/>

Our bodies were not meant to sit all day

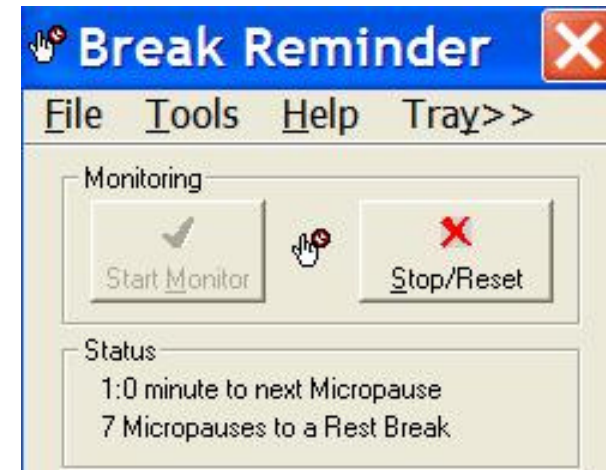
Recent study: Heart problems and sagging bellies result from too much sitting, even if you exercise after work

<http://esciencenews.com/articles/2011/01/12/study.finds.more.breaks.sitting.are.good.waistlines.and.heart>

- **Vary your position**
 - Even 20-second microbreaks make a big difference
- **Stand when speaking on the phone**
 - You are using a headset, right?
- **Walk to a co-worker's desk instead of IM'ing**
 - If you're in the same city!

Try break reminder software

- **It's easy to forget to take a break**
 - Software can help!
- **Being “forced” to take 20-second breaks improves back health**



- **Examples at <http://alanseiden.com/breakremind>**
 - Break Reminder: <http://www.cheqsoft.com/break.html>
 - This is what I use
 - WorkRave: <http://www.workrave.org/>
 - Instant Boss: <http://appsapps.info/instantboss.php>

Mouse Problem

The mouse introduced a source of strain

- **Many keyboards have number pad on right side**
- **Right-handed people must reach beyond the number pad to use mouse**
- **This puts you off balance, forcing your muscles to tighten to keep you upright**
 - Experiment by Paul Linden, PhD: “Try holding your right hand out just past the right edge of the keyboard, where the mouse would be. Then try holding your left hand out past the left edge of the keyboard. It is usually clear to people that holding the right hand farther out is a strain.”
- **Solution: Learn to use mouse with left hand**

Another option: keyboard without numberpad

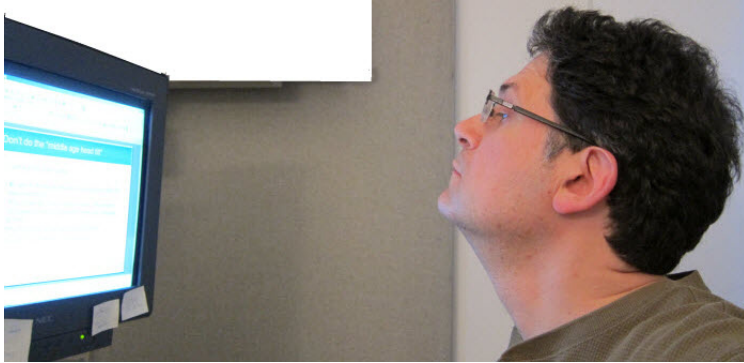
- **IBM/Lenovo SpaceSaver II keyboard, though discontinued, has loyal fans**
 - Model RT3200, Part 37L0888 (US/English)
- **Similar to ThinkPad laptop keyboards**
- **Has red TrackPoint “mouse” for those who want that**
- **Also good for righties who want to continue using mouse on right side**



This is Alan's RT3200,
bought on eBay

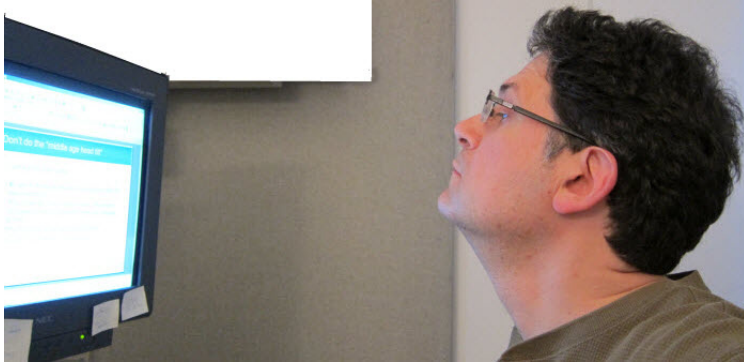
Glasses

Avoid the “middle age head tilt”



- **Bifocals and trifocals wearers often tilt head back instinctively**
- **This raises the “near” area of lens (bottom of glasses frame) for reading computer screen**

Avoid the “middle age head tilt”



- **Bad: strains neck and back**
- **Most people don't realize they're doing it**
- **Helpful: the buddy system (two people observe each other)**

How to eliminate the “head tilt”

- **Consider doing both:**
- **Low tech solution**
 - Lower monitor (maybe a lot) to read screen comfortably
- **Higher tech solution**
 - For computer work, use a second pair of glasses with “occupational progressive lenses”

Occupational progressive lenses

- The usual sliver of “reading/near” area is replaced with large reading area plus intermediate area on top
 - No long distance for trifocals wearers
- You may re-use old eyeglass frames (large is better)
- Ask your optician
- Some manufacturers of these
 - Cosmolit Office
 - Essilor InterView
 - Shamir Office
 - SOLA Access
 - Zeiss Gradal
- This really works! I’ve seen these glasses cure a neck-ache instantly

In a minute we will do an exercise together

- **Background on my training**

- I am a certified practitioner in the Feldenkrais Method[®] of somatic education
- I studied in New York City for four years (part time)
 - <http://www.feldenkraisinstitute.com>
- Helped me resolve my own RSI issues
- Now I help others

- **First, a few words about Feldenkrais (rhymes with “nice”)**

Feldenkrais Method

What is the Feldenkrais Method?

- **A system that uses movement to help the brain recalibrate and recalculate the optimum way to move and act**
 - Like a “recalc” or refresh routine for the brain, using current data
 - Can improve balance, restore lost function, increase proficiency in sports, music, etc.
- **Named for Moshe Feldenkrais (1904-1984), the physicist and Judo master who devised it**
- **Excellent for athletes, musicians, the elderly, children with cerebral palsy, many others**

Two modes for Feldenkrais

- **Group/class movement lessons**
 - Awareness Through Movement®
- **Session with practitioner for individual needs**
 - Functional Integration®
- **Today's Awareness Through Movement lesson is ideal for desk workers (this means you)**

Resources for this talk

- **Alan's four ergonomics articles**
 - <http://www.alanseiden.com/articles-and-publications>
- ***Comfort at Your Computer* by Paul Linden**
 - <http://being-in-movement.com/comfortbook.htm>
- **Resources for Computer Vision Syndrome (CVS)**
 - <http://doctorergo.com>
- **NIH computer ergonomics page**
 - http://dohs.ors.od.nih.gov/ergo_computers.htm
- **Feldenkrais Method® information**
 - <http://feldenkrais.com>

Questions

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