Set up your Mac the right way

Or: Why does it hurt? (And does it have to?)

We asked ergonomist Shelby Cass for some professional ergonomic advice, starting with the simple act of sitting

Like many other computer users, you have probably thought, heard or even uttered these words: "I have naturally horrible posture," "I've always slouched," "It's how I'm used to working," "It's normal to hold tension in my shoulders."

You're not alone. However, many of our bad computer habits didn't happen on purpose. They are the results of repeatedly having to accommodate ill-fitting work environments. We are good at adapting ourselves to fit things that weren't built to fit us, but slouching, bending, reaching and leaning for hours on end will take its toll. The key is making the world fit you; this is otherwise known as 'ergonomics'.

Slouching, bending, reaching and leaning will take its toll – the key is making the world fit you

You probably know some ergonomic basics, which we will review in the desktop section, but what do you do when your equipment doesn't accommodate those things?

The world is designed from a one-size-fits-most approach, which means the moment you sit down, you are probably already compromising your body to accommodate your environment. For instance, the typical desk height is 74cm, but an average well-seated person should have their keyboard about 66-69cm up. Sitting at a desk that is too tall begins the descent into awkward postures. Wrists hit desk edges, so keyboards get pushed back. Arms extend forward, so monitors get pushed back. Eyes want to see screens, so forearms are leaned on. Shoulders creep up towards ears and static postures reign supreme. Before you know it, you've got a burning sensation between your shoulder blades and at the base of your neck. This is Repetitive Strain. More than four hours a day at an unadjusted computer workstation is high risk for a Repetitive Strain Injury (RSI). And we're not even talking about laptops yet.

RSIs develop over days, weeks, months or even years from repetitive microtraumas that accumulate until we reach a state of actual injury. Preventing the injury is preferable to treating one, and it's never too late to improve your ergonomics, especially if you're already noticing some of the symptoms. Manipulate your environment to fit you – your stature, your work, your process and your needs. Your body is worth it.

SPOTTING THE DANGER SIGNS

Computer-related RSIs typically involve muscles, tendons, ligaments and nerves in the hands, arms, wrists, shoulders, back, neck and eyes. Some common RSIs: tendonitis, De Quervain's tenosynovitis (thumb/wrist), epicondylitis (tennis elbow) and carpal tunnel syndrome.

Signs and symptoms in order of severity:

⚠ **Fatigue** One part of your body gets tired before the rest – for example, the right hand before the left.

⚠ **Discomfort, tightness, stiffness,** ache and muscle burn

⚠ **Pain** Working on a computer should not physically hurt.

⚠ **Numbness and tingling** This means circulation and/or nerves are compromised. You should never disregard these symptoms.

All of these signs are your body asking for attention. It is important not to brush any of them off as a necessary evil to getting your work done.
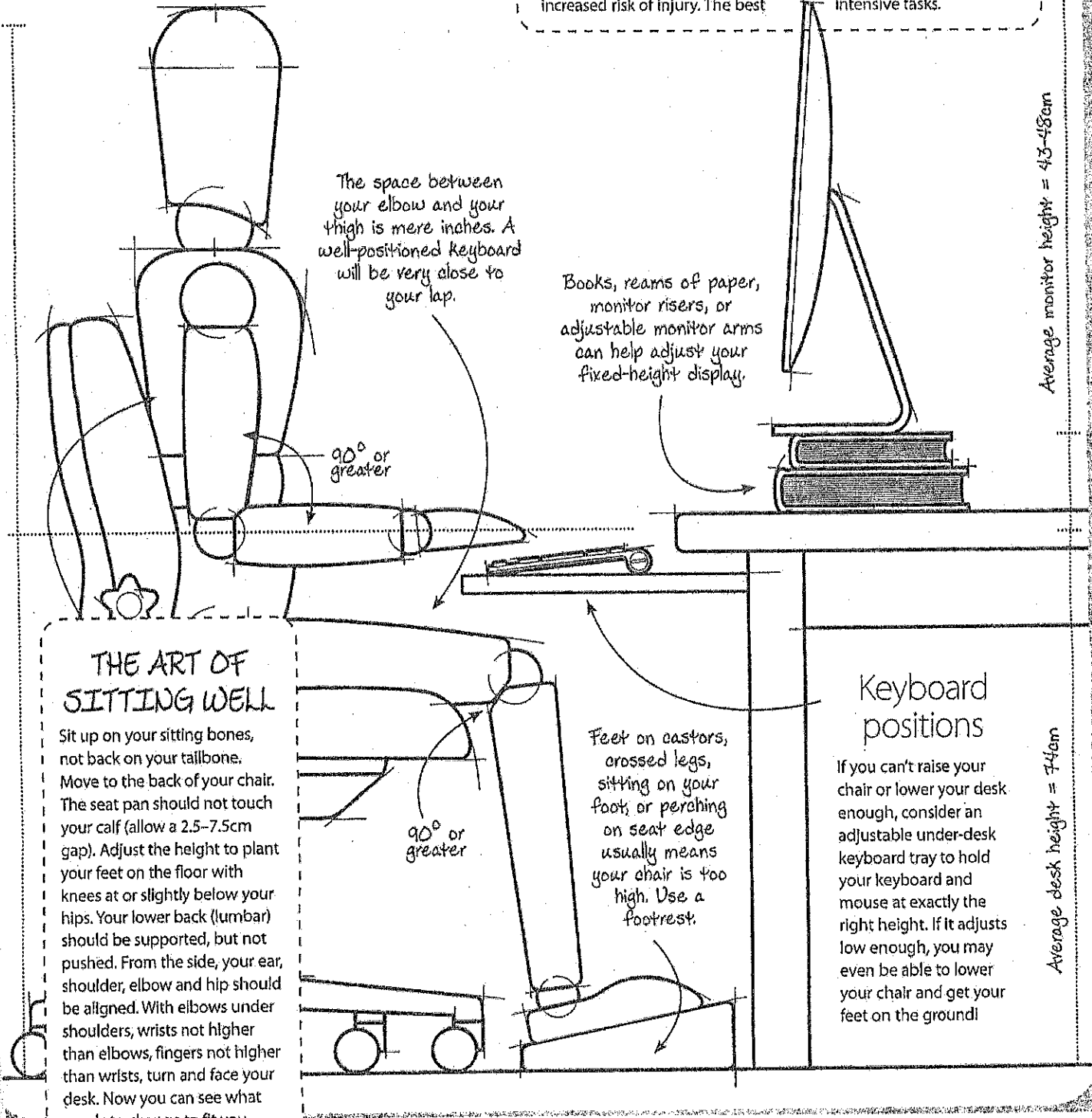
Desktop Macs

Make your iMac (or Thunderbolt display) fit you
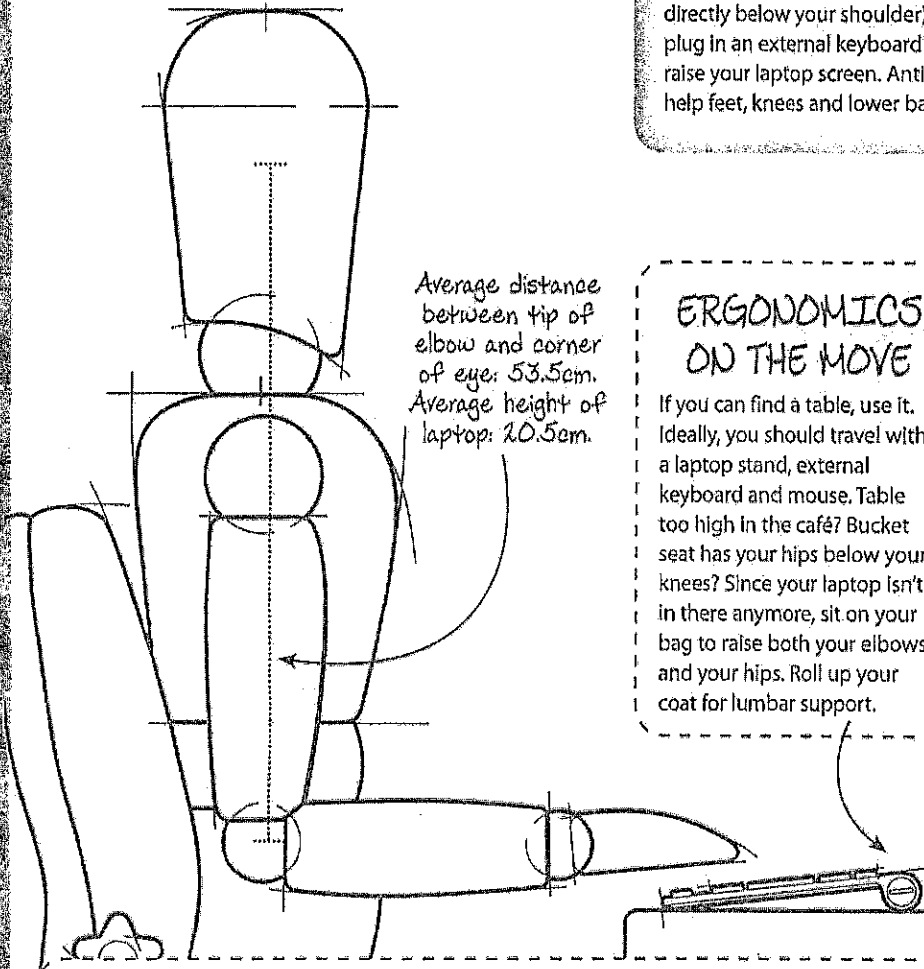
MOUSE RIGHT OR LEFT?

Using the mouse on the right side of a standard keyboard can bring on shoulder, elbow, wrist and hand injuries. This is because of the numeric keypad. Centre yourself on your keyboard (bellybutton dividing the letters 'G' and 'H'). The extra 15cm reach over the number pad makes it tricky to use your mouse on the right without an increased risk of injury. The best option is to use the mouse on the left side with your left hand, and/or get a keyboard without the attached number pad and switch back and forth between right and left-sided mouse use, especially if you're right-handed. You can always add a separate external number pad, but move it out of the way when doing mouse-intensive tasks.

The space between your elbow and your thigh is mere inches. A well-positioned keyboard will be very close to your lap.

Books, reams of paper, monitor risers, or adjustable monitor arms can help adjust your fixed-height display.

90° or greater

Average monitor height = 43-48cm

THE ART OF SITTING WELL

Sit up on your sitting bones, not back on your tailbone. Move to the back of your chair. The seat pan should not touch your calf (allow a 2.5-7.5cm gap). Adjust the height to plant your feet on the floor with knees at or slightly below your hips. Your lower back (lumbar) should be supported, but not pushed. From the side, your ear, shoulder, elbow and hip should be aligned. With elbows under shoulders, wrists not higher than elbows, fingers not higher than wrists, turn and face your desk. Now you can see what needs to change to fit you.

90° or greater

Feet on castors, crossed legs, sitting on your foot, or perching on seat edge usually means your chair is too high. Use a footrest.

Keyboard positions

If you can't raise your chair or lower your desk enough, consider an adjustable under-desk keyboard tray to hold your keyboard and mouse at exactly the right height. If it adjusts low enough, you may even be able to lower your chair and get your feet on the ground!

Average desk height = 74cm

Laptop on a desk

If you have a desk, it can save your neck

CAN YOU STAND IT?

Who said you have to sit at your desk? Standing desks are another option, but make sure they are set up correctly. The distance between your eye and elbow still needs to be the same as if you were sitting, and you need to be aware of hunching and leaning, locking your knees, and aching backs and feet. The ideal desk height is about 2.5-5cm below your elbow (which should be hanging directly below your shoulder). Make sure you plug in an external keyboard and mouse and raise your laptop screen. Anti-fatigue mats help feet, knees and lower back.

Average distance between tip of elbow and corner of eye: 53.5cm. Average height of laptop: 20.5cm.
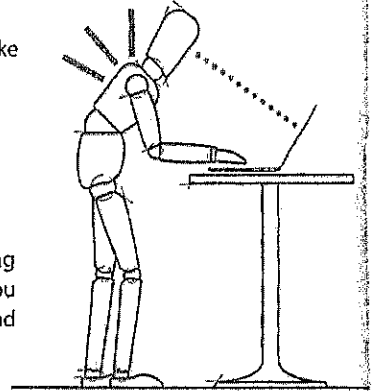
ERGONOMICS ON THE MOVE

If you can find a table, use it. Ideally, you should travel with a laptop stand, external keyboard and mouse. Table too high in the café? Bucket seat has your hips below your knees? Since your laptop isn't in there anymore, sit on your bag to raise both your elbows and your hips. Roll up your coat for lumbar support.

Looking down is a precursor to hunching. If a laptop stand isn't enough, add books, a few magazines or reams of paper.
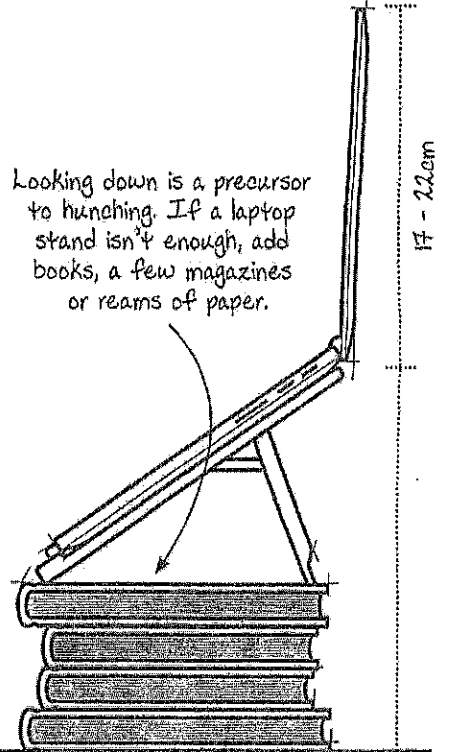
17 - 22cm

ERGONOMIC URBAN MYTHS EXPLAINED!

If it says 'ergonomic', it must be good

FALSE The truth is there is no particular standard that dictates what a product needs to do for it to be deemed 'ergonomic'. What is ergonomic for one person may not neccesarily be ergonomic for you. One size does not fit all. A big rule to follow: If it hurts, don't do it.

Exercise balls are better than chairs

FALSE Maybe... for about 15 minutes. However, lower back support is more important than working out your core all day. When your core gets tired, you'll need lower back support to prevent the inevitable slouch that happens on a ball when you're done 'exercising'.

My monitor should be at arm's length

FALSE The length of your arm does not necessarily dictate the screen-viewing distance your eyes find most comfortable. If you are leaning forward to view your screen, move it closer. If it's too bright to keep it there, adjust the brightness and the contrast.

'Blind' touch typing is a neck-saver

TRUE Just the mere act of looking down to place your hands upon the keys can quickly add up to hundreds of weight-lifting reps per hour of your 15lb head. Learning to type while keeping your eyes ahead can prevent that all-too-distracting neck pain.

Laptops on lap tops

Think the couch is comfy? How's your neck?

You'll probably feel the burn here first, since you're using these muscles to counterbalance your head.

Pillows! Support your lower back. Lift your feet so you don't use your wrists to prevent the laptop sliding.

A rest – even a ring-binder – can help raise the screen a little bit while keeping wrists from hitting hard edges.

90° or greater

Remember that footrest! You don't have to get fancy. Your laptop box might do the trick!

THE BIGGEST LOSER

The laptop is small. You are not. When you use the laptop as-is, you shrink (slouch) yourself to fit the 20.5cm space between the keys and the top of the screen. That's more than a foot of compromise and it's mostly from your spine. Limit as-is laptop use to less than two total hours a day.

THE BEST APPS AND KIT

Best ergo-ware
Goldtouch GO! Travel Keyboard

£120 A short, slim keyboard with no number pad. It has an adjustable split to address ulnar wrist deviation (pain on the little-finger side of wrist) and dual Mac and PC layouts. The Bluetooth Go! is currently only for handheld devices.
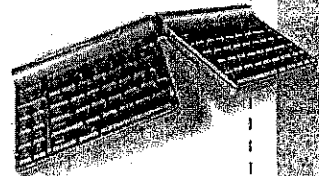
Best laptop stand
Several on Amazon

£30 Carry out a quick Amazon (amazon.co.uk) search for laptop or notebook stand or riser and you should find plenty of portable and non-portable solutions for laptop stands.

### Best software for breaks
Several available

Free Track the distance your mouse travels, as well as your keystrokes. Schedule breaks and stretches. All of these are free to try: Time Out by dejal; MacBreakZ ($9.95/£6.50); RSI Guard ($65/£41.50) If you like reminders, break software might be your thing.

Best cross-platform software
Synergy

Free Want to see all your machines on separate displays at the same time but stay with one keyboard and one pointing device? Try Synergy. It's even better than a 'keyboard, video and mouse' (KVM) switch. Plus, it's free.
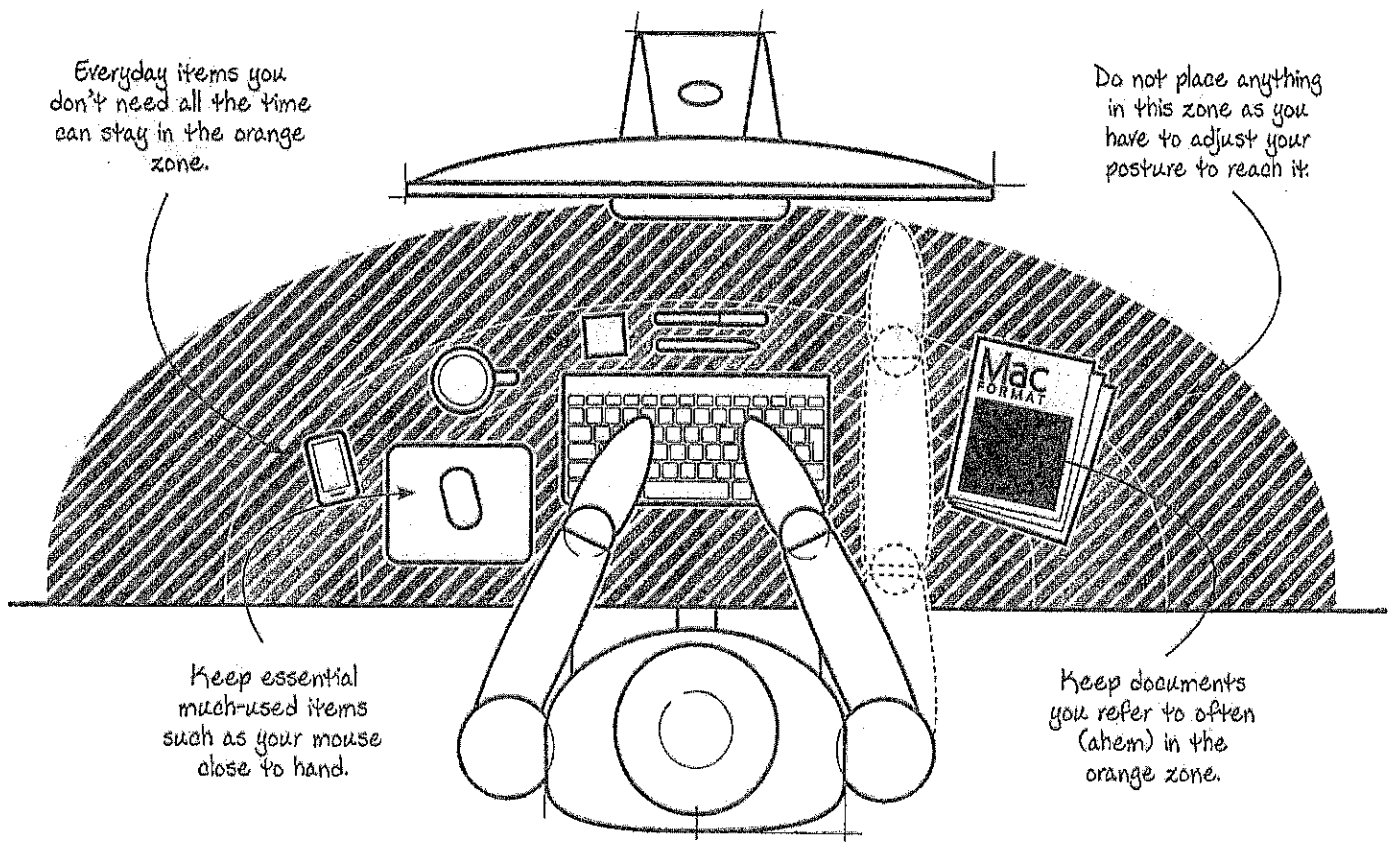
Best typing tutorial
Mavis Beacon

£20 Mavis Beacon stands the test of time for finger placement, drills and games. For fun and speed practice, check out Typing Maniac on Facebook.
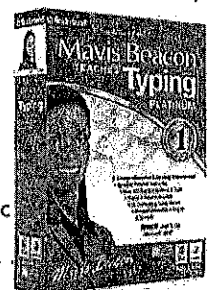
Your neutral reach zone

Everyday items and where they should be placed.
If you have to reach for it, then it isn't right...

Everyday items you
don't need all the time
can stay in the orange
zone.

Do not place anything
in this zone as you
have to adjust your
posture to reach it.

Keep essential
much-used items
such as your mouse
close to hand.

Keep documents
you refer to often
(ahem) in the
orange zone.

ACCESSIBILITY TO IMPROVE YOUR iOS EXPERIENCE

Kots of Mac users forget to check out their machine's accessibility features (aka: Universal Access) unless they feel it is a need, but Apple's assistive technology is always worth exploring.
Basic accessibility features include:
MouseKeys Uses a numeric keypad to move and click your mouse.
Speed up your trackpad Work quicker.
Ignore trackpad input Use your laptop keyboard without accidentally moving your cursor.
Inkwell Recognises most stylus devices and transcribes your handwriting into typed text with some accuracy.

Ergonomic favourites include:
Enable touchpad drag lock This means no more clicking the trackpad with your thumb and trying to drag an item, just double tap and drag (and it works in the scroll bar area, too).
Change your modifier keys If you're using a non-Apple keyboard (which obviously don't have many Apple keyboard options), you can remap your ⌘ key back next to your space bar where you're used to having it. You can also turn Caps Lock into something else like ⌥ so you don't accidentally yell at people when you email them...
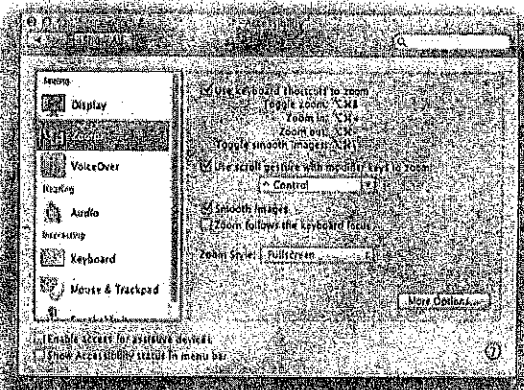
Universal Access features are everywhere, not just under Accessibility.
Read more at apple.com/accessibility/macosx/physical.html