

HEALTHY COMPUTING EMAIL TIPS^{1,2}

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HOW TO INCORPORATE THE EIGHT COMPONENTS

Healthy computing incorporates optimum **work style, ergonomics, mind/body fitness, and positive work setting** as a whole while working at the computer. Integrating the eight components below improves health, decreases discomfort, and increases performance. Here, the eight components are illustrated by the common activity of walking:

1. **Work Style:** Develop work habits that will help you maintain health and avoid injury, such as taking breaks and pacing your workload.

Work Style describes the way you walk. Do you pace yourself so that you can finish your walk without exhaustion? Do you stop to take a breather? Do you relax your leg muscles as you shift from side to side, getting into the rhythm of walking?

2. **Ergonomics:** Adjust your workspace and equipment to suit your individual needs.

Ergonomics describes your shoes. Are they appropriate for the type of walk you are embarking upon? (Ever try jogging in high heels?) Do they fit comfortably so as to avoid blisters and chafing?

3. **Mind/Body Awareness:** Sense tension and reactivity and let go physically, mentally, and emotionally.

Mind/Body (or Somatic) Awareness is listening to your body and following your inner voice. Do you stop to drink water when you are thirsty? If your heart is racing, do you slow down? When you feel warmth in your feet, do you stop to change socks to avoid a blister?

4. **Stress Management:** Handle life's compulsory stresses effectively whether at work or home – in a way that does not adversely affect your health (e.g., reframing events, communicating your needs, etc.). Work stress can include having too much responsibility with too little control, poor social support and/or conflicts with coworkers or supervisors, a heavy workload, and/or being bored with your job.

Stress Management is taking care of situations as they arise and not forcing yourself to do too much or getting bored from doing too little. Do you tell your walking companions that an advanced trail is too difficult for you or that the slow pace is not challenging? Do you let them know that you would prefer to listen quietly to nature as you walk rather than talk during the entire trek?

5. **Regeneration:** Allow your body to rebuild its storehouse of energy before becoming exhausted, thus preventing burnout and ill health.

Regeneration is allowing your body to rest and not pushing yourself to the point of exhaustion. Do you stop when you feel like you're getting tired, before you become exhausted? Do you give your body time to recuperate after pushing your limits with a short rest or a walk?

6. **Vision Care:** Protect your eyes from excessive strain and dryness (e.g., vision breaks, glare reduction, screen in focus) and wear prescription glasses that are appropriate for computer use.

Vision Care includes exercising your eyes and wearing appropriate eyewear. Do you alternate between looking at distant and close objects?

Do you wear sunglasses when walking in the bright daylight? Do you wear a visor to protect your eyes from glare? Do you stumble on the rocky path because you need prescription glasses?

7. **Fitness:** Working at the computer is a daily athletic event that requires fitness for optimum performance and injury prevention.

Fitness includes stretching, strengthening, and movement. Do you warm up slowly as you begin your walk? Do you gently stretch after you are done?

Do you exercise or cross train during the week to prepare for your next hike?

8. **Positive Work Setting:** Social support reduces arousal, ameliorates stress and increases performance.

Do you have a group of friends with whom you exercise? When you lack motivation do your friends encourage you to exercise? Do you get together with your friends for fun other than hiking?

MIND/BODY AWARENESS

STRESS MANAGEMENT

REGENERATION

How to send goodwill

As workload increases and job pressures build, we sometimes feel frustrated, irritated, angry, or resigned. At times we may even think that our coworkers don't care or want to help. These negative thoughts are natural when we are frustrated and tired but may increase neck and shoulder tension. Reduce worksite tension and spread caring and hope.

- Begin with yourself. Sit quietly and for a moment focus on diaphragmatic breathing. Let your exhalation go slower and slower. Now, inhale slowly.
- As you exhale, imagine that as you blow your breath out and that your breath carries the feeling and intend of goodwill (the positive potential for growth combined with a sense of peace and comfort) to a person.
- Whenever you think of someone with whom you are having difficulty, send the person goodwill as you exhale.
- Practice sending goodwill every time you think of a situation that produces conflict. Anticipate the situation by sending goodwill to reduce the negative interactions.

How to assume goodwill

As workload increases and job pressures build, we sometimes feel frustrated, irritated or angry. At times we may even think that our coworkers don't care or don't want to help. These negative thoughts arise easily when we are frustrated and tired and often increase neck and shoulder tension. Reduce worksite tension and spread caring and hope when you **assume goodwill**.

- Before automatically reacting to a stressor, take a deep breath and exhale slowly. Then, think of a past memory when you felt safe and secure. Once you have that memory, take another deep breath and, again, exhale slowly.
- Observe your negative thoughts, such as: "They don't care" or "They don't want to help."
- Stop and ask yourself, "If I were my co-workers what would my experience be?" "Does he or she feel overloaded and have too much work to do?" If this is the situation, assume that your coworker is trying to do his or her best.
- Take another deep breath and exhale gently as you envision everyone doing the best job they can. Assume that you are all working as a team toward the same goal.
- Increase goodwill with your co-workers by offering support, help and understanding. Sometimes all it takes is bringing them some tea or snacks.
- Finally, if there is a problem, take a moment to define it. Ask yourself what needs to be done to resolve it. Invite your coworkers to go on a problem-solving walk in the fresh air. Just let go and ask what needs to be done now to solve the problem. Focus on solutions instead of blame.

How to complete the stress reaction

Are you wondering how you can survive this economic downturn? Do you get tied up in knots and feel totally stressed? The more we are stressed, the more our bodies activate the immediate survival mechanisms with less awareness of future consequences. We often quickly react and say things that we wish we had not or we become paralyzed and do nothing. Regain control and shift to neutral state when you exercise and **complete the stress reaction**.

- Remind yourself that when you are stressed and feeling overwhelmed, the body's intrinsic survival mechanisms are activated – you are ready for flight, fight or freeze. At this moment we become more and more controlled by our primitive brain and it is more challenging to think, plan and create new possibilities. Under high stress our behaviors may regress – we lash out to coworkers or family members, we drink and eat away our sorrows with sweets, stimulants and alcohol or we *veg* out in front of the TV – and these habits only increase the paralysis.
- Do movement and exercise for at least twenty minutes after being stressed to reduce and complete the fight, fight or freeze response. Only after the body has completed the cycle of the alarm reaction can regeneration occur and it will be easier to engage positively with others and explore new options.

How to decompress

At the end of the day do you feel a little shorter? Does your back feel a little stiff from sitting at the computer for hours on end? People generally tend to shrink throughout the years, which can contribute to back discomfort. Take a moment in the day to feel a little taller when you **decompress**.

This exercise involves bending while sitting. If your chair easily rolls, move to one that is more stable. Remove eyeglasses before doing this exercise:

- Move your chair away from your desk or sit in a chair where there is room to bend over while sitting. Sit slightly forward in the chair and place your feet shoulder-width apart.
- Take two or three deep breaths, allowing your body to relax with each complete exhalation.
- On an exhalation, gently pull your belly button toward your spine and bend over slowly while holding a little tension in your abdomen. Let your arms hang between your legs and your hands touch the floor.
- Let your whole body melt for at least one breath. Feel your back gently stretch.
- On inhalation, gently begin to lift your torso vertebra by vertebra, returning to an upright position.
- When you return to sitting upright imagine a string attached to the back of your head, pulling you up even taller. Let your chin stay tucked as the back of the head and neck lengthen. Imagine that the back of your head is reaching towards the ceiling. Feel the lessening of the disc compression in your back.
- Relax and let go.
- Do this or other large movements every 30 to 60 minutes throughout the workday.

OPTION: When you lay down for the night, before falling asleep, stretch your heels toward the foot of the bed and the back of your head – with the chin tucked in – toward the top of the bed. Straighten out your whole body and exhale. Sense the lengthening of your body as it decompresses.

How to remember **XX**

Have you ever listened to world-class tennis players as they compete? Do you hear the grunt when they hit the ball? World-class athletes train themselves to exhale whenever they exert energy – regardless of the sport. When we exhale while exerting, we reduce the tension in our body and are able to perform the activity with less effort. Be like a world class athlete and reduce the tension in your body when you **remember XX**. (**XX** stands for **eXhale when eXerting**). Practice exhaling during the day during these simple exertions:

- Sitting down and standing up
- Getting in a car or bus; exiting a vehicle
- Getting in or out of bed
- Lifting heavy files and boxes, a child, or pet
- Opening doors

In addition, throughout the day, check on your breathing to make sure you have a natural rhythm as you work.

How to do the Quieting Reflex*

The ringing telephone, a looming deadline, a frowning supervisor, financial worry, resentment towards a coworker – stress comes in many forms. When we are alarmed or startled, our bodies react with a stress response. Our sympathetic nervous system becomes activated and we hold our breath and experience increased muscle tension, cold hands and feet, clammy hands, and butterflies in the stomach. Chronic stress can have cumulative effects on our bodies such as decreased immune function, hypertension, musculoskeletal pain, migraine, irritable bowel syndrome, decreased fertility, and more. Over the long run, chronic stress decreases our ability to perform by depleting our resources and results in burn-out.

Almost any threatening thought or stimuli (such as being late) will trigger an alarm reaction. It takes just seconds to respond to a stressor. Take control of your reactions to stressful situations by practicing the **Quieting Reflex**.

- Become aware of the stress stimuli (a worry, annoyance, or anxiety, or muscle tension). Ask yourself: "Is it life threatening?" If not, go on to the next step.
- Smile inwardly with your mouth and with your eyes sparkle to the left and right. Just moving your eyes side to side can remind you that there is more than one way of seeing any situation, no matter how terrible it seems right now. Might it even seem amusing five years from now? Say to yourself, "Alert mind, calm body." Or substitute another coping phrase, such as "I can relax" or "I can choose peace instead of this."
- Inhale a slow, deep, abdominal breath. Exhale, and let your jaw, tongue, and shoulders go loose. Feel a wave of heaviness flowing through your body, all the way down to your toes.
- Take another easy breath. Exhale, and feel a wave of warmth flowing through your entire body, streaming through your arms and legs as though they were hollow tubes, and feel the warm air flowing out your fingers and toes.
- React to every stressor with the Quieting Response.

Optional: Smile five times today at people you don't usually smile at: service people, check-out clerks, toll collectors, complete strangers and even your co-workers. What was their response? What was the effect on you?

*Adapted from Stroebel, C.F. (1982). *QR: The Quieting Reflex*. New York: G.P. Putnam's Sons and Peper, E., Gibney, K.H. & Holt. C. (2002). *Make Health Happen: Training Yourself to Create Wellness*. Dubuque, IA: Kendall-Hunt.

How to let go of ruminations

When frustrated, angry, or upset, our thoughts often run amok. We keep thinking more and more negative thoughts, even though we may know that miring ourselves in them can increase muscle tension, especially in the neck and shoulders. These negative thought patterns can also suppress the immune system. We acknowledge this mind/body connection when we speak of our troubles, such as, "He is a pain in the neck" or "I can't stomach this." Improve health and release stress when you **let go of ruminations**.

- During the day, observe your thoughts and master your wandering mind. If you find yourself in a negative pattern, ask the following questions:
 - "Is it worth thinking this way and harming my own health over the conflict?"
 - "Is this way of thinking really helping me?"
 - "Are these thoughts true or am I exaggerating?"
 - "Are there other options or other ways to think about this?"
- Master your wandering mind. Take 10 to 20 minutes each day to sit quietly and simply focus your attention upon your breath. Gently observe the exhalation. If your attention wanders, just let go of the thought or shift your attention and re-focus gently upon the exhalation.

How to breathe effortlessly

As soon as someone begins using a keyboard or a mouse, his or her breathing rate increases. Adults' breathing rate increases by 30% from 12 to 18 breaths per minute and boys' breathing rate while playing computer games increases by 68% to 25 breaths per minute. This rapid breathing often contributes to cold hands, increased neck and shoulder tension and general fatigue. Learn to relax and regenerate when you **breathe effortlessly**.

- Begin by observing your breathing patterns as you sit quietly and while you work. Sense whether you have more movement in your chest or in your abdomen. Most adults tend to breathe faster and higher in their chest when they work at the computer, which can lead to gasping, sighing, tiredness and shoulder/neck tension.
- To breathe effortlessly, slow your breathing rate and lower the location of the movement. Imagine that your lungs are like a balloon located in your abdomen. When you inhale allow the balloon to expand and when you exhale allow it to contract. As you practice this breathing remember to:
 - Loosen your belt so that your abdomen can expand
 - Exhale very quietly with a slight smile
 - Whisper "Haaaah" very softly as you exhale
 - Allow the exhalation time to be twice as long as the inhalation time
 - Focus on exhalation and forget about inhalation
 - Imagine exhaling the air down and through your arms, wrist and hands and out your fingers

Practice this slower breathing many times at the computer. Observe yourself while working and purposely exhale slower and as you inhale, feel your abdomen expand.

Optional: Breathe and regenerate at home while reclining.

- Lie on your back with a pillow under your knees and with your feet shoulder-width apart; let your hands rest palms up about 6 to 12 inches from your sides.
- Place a 3 to 5 pound weight on your stomach (a bag of rice or beans works well)
- When you inhale push the weight up and away from you as your abdomen expands and during exhalation allow the weight to push your abdomen downward as the air flows out.
- Allow the exhalation to go slower and slower and gently focus your attention to the sensations of movement in your abdomen as you continue to breathe. If your attention drifts, bring it back to the movement of your breath. Continue this for 20 minutes.

How to stay grounded

Without knowing it, we often tighten our back and neck when we stand up or sit down. This reflexive bracing can contribute to neck and back discomfort. Therefore, reduce neck and back bracing during movement when you **stay grounded**.

- Sit on your chair and then stand up and sit down two or three times. As you stand and sit, observe what happens to your toes. Many people curl their toes upward as they stand up while others turn their toes down or grip. The movement of the toes may be different during the process of standing up or sitting down. People whose toes go up tend to have more neck and shoulder discomfort.
- After having observed what happens with your toes, sit quietly for a moment and focus on your breath. Now stand up and sit down three or four times; perform the movement as you exhale and keep your toes and the soles of your feet in complete contact with the floor. In order to do this, you may have to bend more at the hips to keep feeling the contact of your feet as you stand up. In most cases, the work of standing up or sitting down is felt in the legs instead of in the neck and back.
- Each time you get up, practice sitting and standing during an exhalation while keeping your feet and toes grounded.

How to do it now

Ongoing stress without relief is a well-known contributing factor to illness. Unending workload without time to regenerate increases fatigue, the risk of accidents and depresses our immune system. Even at home we can still be preoccupied by the stress of work or relationships. Reduce the damaging effects of stress and mobilize health and joy when you **do it now**.

Like a battery we can run ourselves down and need to take time to recharge. Carry positive feelings and energy into your work setting when you take time to do some of the following (schedule time without guilt so that you feel refreshed):

- Relax during a holiday and being with the people you like.
- Read for fun, exercise, and/or talk to and share with family members.
- Be with your kids now (you can never make up for the time when they were young!)
- Enjoy nature, discovering the world, star gazing, and learning something new.
- Dance and sing.
- Reflect on all of your good qualities.
- Think about the good qualities of your loved ones.
- Appreciate your coworkers.
- Buy a simple secret gift for a co-worker (fresh fruit often does the trick on a hectic afternoon).
- Offer yourself a break – you've worked hard – and take the rewards. If you procrastinate, it might be too late someday! What can be more necessary and urgent than to live now – to enjoy your life and share it with the ones you love? If you still find some excuses why everything else is so important that you can't postpone it, do the following:
- Take time to visit people in a retirement home or a hospice and talk to them. Let them narrate from their past and ask them what they would change if they had a second chance or if they could do so now.
- Imagine it could be you that has only very limited time to live.

How to let it go

By the end of the day do you feel tension in your back and neck? Do you find that your shoulders start to ache as the day progresses? Sitting most of the day and working at desks and computers, especially when we lean forward in our chair, contributes to chronic low-grade tension in our backs, necks and shoulders. Ease the tension in your body when you **let it go**.

- Stand-up and look at your chair. Does it have a back that fully supports you? Sit down and lean back to feel the support. If your chair does not provide adequate back support, we encourage you to find one that does. For the purpose of this exercise, sit in one that provides solid support. Chair backs help relieve tension during the day; however, we see that most people lean forward when working at the computer or even in meetings.
- Simply lean back, relax and let the tension out. When you do so, close your eyes for two to three seconds and slowly exhale. Feel the tension flowing out of your body with your breath. Sit back when you are:
 - On the phone
 - Talking with a co-worker
 - Reading an email or hard copy
 - In meetings
 - Pondering the solution to a current problem

How to take breaks

"I have more energy" and "There is life after five" are common comments reported when people begin to integrate micro- and larger breaks during their computer work.

Micro-breaks are one- to two-second moments of muscle relaxation to interrupt the low level static tension. Larger breaks include standing up and moving around. These movements allow the blood to flow in and out, bring oxygen and nourishment to the tissue and remove waste products. Prevent discomfort and increase your energy when you **take breaks**.

- **Take many micro-breaks.** Every 30 to 60 seconds drop your hands to your lap and let your arms, shoulders and hands go limp. At the same time wiggle your shoulders. Use every opportunity such as:
 - Dropping your hands to your lap with a plop when reading an email instead of continuing squeezing the mouse
 - Dropping your hands to the side of your body after finishing a web-based data form
 - Roll your shoulders backwards in a small circle after entering a column of data
 - Dropping your hands to your laps after hitting return and then continue to type
- **Take frequent large movement breaks.** Every 15 to 60 minutes change positions, alternate tasks, or perform movements for about one to five minutes. These large movements assist lymph return, improve blood flow and reduce physical strains and pressures, such as disc compression from sitting. Use every opportunity to change your position such as:
 - Standing up to answer the telephone
 - Walking over to the next desk instead of sending an email
 - Alternating work tasks (e.g., data entry then, filing then, data entry)
 - Standing up and actively performing stretch and strength exercises
- **Install a computer interrupt program.** These programs remind you to take breaks. The following programs can be downloaded from the web for a free test ride.
 - <http://www.paratec.com>
Stretch break: For PC and Mac--one of the best programs to guide you through breaks and stretches
 - <http://www.mindfulnessdc.org/mindfulclock.html>
Mindful clock: For PC only. It sounds a gong during the day to remind you to take a break – free for personal use

How to increase your energy

While working, do you find yourself tired and quickly irritated by minor hassles? Do depressive thoughts quickly arise? Do you realize that you have responded excessively only after you have lashed out and reacted? A state of tense tiredness is common after a restless sleep, lack of a balanced breakfast, consuming multiple cups of coffee or caffeinated drinks, eating sugary snacks, and/or lack of exercise. Low energy contributes to negative moods that increase shoulder (trapezius) muscle tension. Decrease your tension and change your mood when you **increase your energy**.

- Begin each day by eating breakfast that includes protein such as whole grain cereals with nuts, leftover dinner, or the traditional egg.
- Listen to yourself and when you begin feel tired, **stop!** Take a short walk instead of reaching for a snack or a cup of coffee. At work, schedule walking meetings. A twenty-minute walk will increase your energy, loosen your neck and shoulders and help to transform irritations into solvable problems. Exercise also lengthens the time before desiring a snack or cigarette (Thayer, 1996).
- During the day take many breaks to interrupt the low-level chronic tension that is common during computer work. Breaks allow your body to regenerate.

For more information read: Thayer, R.E. (1996). *The Origin of Everyday Moods*. New York: Oxford University Press.

How to energize

Are you dragging and feeling less energetic? Are you glued to your chair and workstation? Is the impulse to move too much work? Take the initiative and recharge your battery when you **energize**.

The moment you feel your energy dropping, get up and move. Movement is the quickest way to energize and increase positive mood.* Take a short walk down the hallways (who can deny anyone a bathroom break?). As you walk, put a spring in your step, a slight smile on your face, and with each step, push off with your big toe. As you walk like this you will move faster, feel lighter and build energy.

*<http://peperperspective.com/2012/09/30/take-charge-of-your-energy-level-and-depression-with-movement-and-posture/>

How to get energized

As we continue to work without interruptions at the computer, we often get tired and drained.

Increase your vitality when you move and **get energized**.

- Stand up, bend your knees slightly, and let your arms hang along your trunk. Gently bounce your body up and down by bending and straightening your knees. Allow the whole body to shake and move for about one minute like a Raggedy Ann doll.
- Then, while exhaling, bend your knees and reach downward with your hands to touch your toes. As you inhale, straighten up, bring your hands and arms upward to chest level, and clap both hands twice together. Continue bringing your hands and arms upward to the ceiling as you explosively exhale.
- Repeat the cycle of movement (reaching toward your toes and upward to the ceiling) three times. Sit down and observe your increase in awareness and energy.
- Remember to take many movement breaks during the day.

How to regenerate while waiting

When working at the computer, we often wait with bated breath and poised fingers in anticipation of the next move, such as when reading emails and composing our responses. As the computer processes information or when there is a delay while cruising the net, we still remain fixated on the screen and ready to jump back into action when the moment arrives. As we wait, we hold our breath or breathe shallowly, keep tension in our hands and arms, and generally tighten our shoulders. These patterns of holding and breathing rapidly contribute to discomfort and tiredness. Interrupt these tension patterns and improve your energy when you **regenerate while waiting**.

- Take every opportunity to let go, move and regenerate.
- Don't wait with index finger poised over the mouse click button. Instead, use those few seconds to relax your whole body: drop your hands to your lap and exhale, and let all unnecessary tension drain out of your body.
- When you notice that your fingers are raised over the keyboard ready to enter another data point let that be the cue to relax your hands and body. Drop your hands to your lap and relax your shoulders by shrugging them up and then letting them drop down.
- Avoid staring at the monitor/flat screen when thinking or waiting for the computer. Instead, blink your eyes or close them when thinking about your responses. Take a second or two to relax your eyes by looking out a window or across the room; gently blink one more time.

How to be oh so British

Working intensely and continuously without breaks may contribute to discomfort and pain. Although we know that frequent breaks provide a respite, we are generally unreliable in reminding ourselves to take a break because we get captured by our tasks and only stop working after we experience discomfort. To reduce discomfort and increase social support, learn to be **oh so British**.

- Stop work and take an actual ten to fifteen-minute break twice a day (morning and afternoon). (Remember, the law mandating breaks was written to help you maintain your health.) Place a sign on the office door letting people know the office is closed for a specific time period. During this break, leave your work area and, if appropriate, take this break with your co-workers while drinking tea (it appears to have anticancer properties) and sharing positive experiences.
- Bring snacks to be shared with co-workers to increase social support,.

Although taking breaks seems unproductive, research studies have demonstrated that people who take breaks are generally equally (and sometimes more) productive than those who work without breaks.

WORK STYLE ERGONOMICS

How to tape your wrists

Do your wrists begin to hurt when you type at the keyboard or use the mouse because you bend them? Do you rest the palm of your mousing hand on the table when you mouse or read email? Although we know that it is best to maintain a neutral wrist (the top of the hand is in the same plane as the top of the forearm) when working at the keyboard we often get caught up in our work and bend our wrists. When we do this, our wrists take most of the workload of typing and mousing. Avoid this un-neutral position when you **tape your wrists**.

- Cut a piece of scotch tape about 6 inches long. Starting in the middle of the back side of your left hand, place the tape so that it runs across your wrist and onto your forearm. Keep your left wrist neutral as you do this.
- Place a similar strip of tape on your right hand, wrist and forearm while maintaining a neutral wrist position.
- Begin typing. When you dip your palms or bend your wrists, the tape will pull on your skin to remind you to return the wrist to the neutral position.
- Each time you feel the pull on the tape, take a micro-break.

How to place yourself in a good working position

A comfortable working position is when your joints are naturally aligned while working at the computer. While working at the computer check the following:

- Hands, wrists, and forearms are straight, in-line and roughly parallel to the floor.
- Head is level or bent slightly forward, forward facing, and balanced. Generally it is in-line with the torso.
- Shoulders are relaxed and upper arms hang normally at the side of the body.
- Elbows stay in close to the body and are bent between 90 and 120 degrees.
- Feet are fully supported by floor or footrest.
- Back is fully supported with appropriate lumbar support when sitting vertical or leaning back slightly.
- Thighs and hips are supported by a well-padded seat and generally parallel to the floor.
- Knees are about the same height as the hips with the feet slightly forward.

Working in the same posture or sitting still for prolonged periods is not healthy. You should change your working position frequently throughout the day in the following ways:

- Make small adjustments to your chair or backrest.
- Stretch your fingers, hands, arms, and torso.
- Periodically, stand up and walk around for a few minutes.

*Adapted from: <http://www.osha.gov/SLTC/etools/computerworkstations/positions.html>

How to expand your waist

Our stomach expands when we sit down; however, we do not loosen our belt or waistband to allow for expansion. This constricts our abdomen and forces us to breathe slightly higher and more rapidly in our chest. This upper chest breathing pattern, punctuated with sighs, increases neck and shoulder tension and may contribute to cooler hands (poor circulation). Reduce neck and shoulder tension and induce slower and lower breathing when you **expand your waist**.

- Each time you sit down at the computer, loosen your belt and undo the button of your waistband (be sure to buckle up when you stand up).
- Wear clothing that has a looser waistband; wear slightly larger sized slacks, skirts or dresses; and/or explore wearing suspenders instead of a belt.
- Ask yourself if it is okay for your stomach to become slightly larger to allow breathing to occur.
- Remember to breathe diaphragmatically while working at the computer. As you inhale allow your abdomen to expand; as you exhale allow your abdomen to decrease in diameter.

How to increase symmetry in movement

Performing repetitive one sided movement or sitting in a skewed posture increases the risk of injury.

- Observe your movement patterns and use that to analyze your workstation layout for the presence of asymmetry such as:
 - Turning your head to the side to look at the monitor/flat screen
 - Mousing with the same hand
 - Reaching for the phone with the same hand
 - Tucking the phone between ear and shoulder on the same side
 - Rotating the chair in the same direction when getting up
 - Twisting to the same side to greet people entering the office
 - Reaching to the same side for reference materials
 - Reaching to the printer
 - Crossing the same leg on top of the other
 - Carrying work materials or purse/briefcase on one side

- What you can do
 - Rearrange your workstation so that your movement alternates from one side to the other such as, moving the location of the monitor/flat screen from one side to the other; carrying your purse or briefcase in alternating hands; getting up from your chair by rotating in alternating directions; re-arranging commonly used reference material so that it is closer to the center of the desk.
 - Use equipment which avoids unilateral movements such as a headset for the phone. Practice physical movements to counter balance the asymmetry (e.g., if the monitor/flat screen is placed to the left, rotate your head to the right a few times during the day).

How to implement beer budget ergonomics

Have you heard the saying, "Champagne tastes on a beer budget"? We often feel that way when we think of ergonomics. If you look at your workstation and think, "If only I had more money, I could have a better ergonomic set-up," you probably have a beer budget. Ergonomic changes don't necessarily have to cost a lot of money. What is required is creativity. Take a moment to assess your workstation. Then explore the following inexpensive ergonomic solutions:

- Desk too low: Place 2x4 boards, bricks, etc. under the legs of the desk.
- Desk too high: Trim the legs or raise your chair and use a footrest or create a platform upon which you can sit.
- Need a footrest: Use phone books or firm pillows.
- No room for a mouse on your keyboard tray: Place a mouse bridge over the 10-key pad or use a c-clamp with a small board next to the keyboard tray to create a mouse pad.
- No document holder: Prop a 1-inch 3-ring binder between the keyboard and monitor/flat screen (use a small piece of anti-skid material or a large clip to keep documents from sliding). Or, if you are reading a book, use a fork to keep the pages open-place it across the top with the prongs slipped through the pages on the right and the handle pressing against the pages on the left.
- Need a slant table for writing: Use hard cover 2-inch 3-ring binder with anti-skid material.
- Uncomfortable chair: Use a pillow for better back support, remove the armrests if they get in the way of working at the keyboard, roll a towel and hang it over the back so it supports your spine and helps you to maintain a neutral posture, wrap the armrests with soft, spongy material if they are too hard, or sit on a large gym ball instead of a chair.
- Incorrect keyboard tilt: Place a row of post-it pads underneath the front of the keyboard.
- Sharp edges on the desk: Glue a strip of weather stripping to the edge.
- Monitor/flat screen too close: Move your desk away from the wall and push your monitor/flat screen to the back.

Regardless of your ergonomic situation, always remember to take your micro and large movement breaks.

How to assess the ergonomics

*"The reasonable man changes himself to fit the conditions of the environment. The unreasonable man changes the conditions of the environment to fit him. All progress depends upon the unreasonable man."
---George Bernard Shaw*

Assess your own workstation or know what to look for when you buy new workstation equipment. Do a self-assessment using the U.S. Department of Labor Occupational Safety & Health Administration's (OSHA) Ergonomic Check List. This check list helps identify ergonomic factors that may need improvement in order to create a safe and comfortable computer workstation. If you are planning to replace or purchase new equipment, use OSHA's Checklist Purchasing Guide. The checklists and suggestions to improve the computer workstation can be downloaded from:
<http://www.osha.gov/SLTC/etools/computerworkstations/checklist.html>

How to check your seat

The seat on which you sit is the foundation for comfort; however, the seat design may not provide a solid platform or allow your hip sockets to be higher than your knees. To improve comfort, adjust or transform your sitting platform. Inspect the seat on which you sit and check:

- Is the seat bucket shaped? If yes, modify the seat so that it is a level platform by placing a hard pillow or folded blanket on it. Transform it so that it offers a solid base to support your bottom.
- Is the front edge higher than the back edge of the seat? If yes, adjust the seat angle so that the front edge of the seat is lower than the back edge. If the seat angle can not be adjusted with one of the levers, use a foam wedge pillow to change the angle. Make the adjustment so that your hip sockets are slightly higher than your knees while sitting.

Remember, immobility is a significant contributor to discomfort. Use every opportunity to get up and move. See: <http://peperperspective.com/2012/02/22/maintain-energy-and-health-at-work/>

How to make the chair yours

Are you too petite for your chair? Do your feet dangle as you sit? Do you raise your arms and shoulders when you write or do the arm rests constrict your movements? If so, your chair is most likely unsuited for you. Adjust the chair to your individual body and work needs. Explore some of the following solutions to eliminate discomfort caused by a large chair:

- Adjust the chair to fit you. Many chairs have levers that can adjust the height, seat angle, seat depth, back support angle and back height.
- Strap a firm, foam rubber pillow to your chair to support your back. This pillow should be the full length of the chair back so that, when sitting with your back resting against this pillow, the undersides of your knees are approximately 1-2 inches away from the chair.
- Support your low back with a small pillow or rolled towel. Position it to provide support and comfort for your low back. Use velcro or straps to hold it in place.
- Place a box, book or footrest under your feet to support your legs (e.g., place old phone books under your desk so that your feet can touch the ground). There are many inexpensive varieties of footrests available.
- Lower or remove the armrests if they are detachable.

Although we often adjust ourselves to the environment, it is better to change the environment to fit us. If possible, replace your chair with one that fits you.

How to sit back

By the end of the day do you feel tension in your back and neck? Do you find that your shoulders start to ache as the day progresses? Sitting most of the day and working at the computer, especially when we lean forward in our chair, contributes to chronic low-grade tension in our backs, necks and shoulders. To reduce the tension in your body possibly caused by the chair do the following:

- Stand-up and look at your chair. Does it have a back that fully supports you?
- Sit down and lean back to feel the support. If your chair does not provide adequate back support, find one that does.
- For the purpose of this exercise, sit in one that provides solid support. Chair backs help relieve tension during the day; however, we see that most people lean forward when working at the computer or even in meetings.
- Simply lean back, relax and let the tension out. When you do so, close your eyes for 2 to 3 seconds and slowly exhale. Feel the tension flowing out of your body with your breath.
- Sit back when you are:
 - On the phone
 - Talking with a co-worker
 - Reading an email or hard copy
 - In meetings
 - Pondering the solution to a current problem

How to adjust your armrests

Is your chair like an airplane seat, ergonomically designed for most bodies yet uncomfortable for you? Although many office chairs have adjustable features, armrests are often too high, too hard or impede movement and they can cause us to raise our shoulders or tighten our arms when typing and mousing. To improve comfort explore the following:

- Feel and observe the armrests:
 - Sit comfortably in your chair with your hands on your lap, your shoulders relaxed and your elbows against your trunk. Check your elbow height in relation to the arm rests. If your elbows are lower, you are forced to raise your shoulders when using the armrests. Sitting in this position can result in chronic shoulder tension.
 - Let your arms rest on the armrests. Are they soft and comfortable or firm and rigid? If not comfortable, you may tense your arms to protect yourself from the discomfort of the hard surface.
 - Pull fully up to your keyboard and mouse and begin working. Do the armrests bump against the keyboard tray? Do you have to twist your wrist or hand to get around the armrest in order to use the mouse?
- Make adjustments:
 - If the rests are too high, lower the armrests so that you do not have to raise your shoulders when resting. If too hard, wrap a soft cloth or padding around the armrests.
 - If they constrict movement, check to see if the rests can wing out (banana wing rests).
 - If you cannot adjust the armrests to suit your body, the best option is to remove them completely (most can be unbolted from the bottom of the chair) and allow your arms to rest on your lap during micro-breaks.
 - Eliminating the armrests also offers more freedom for "flow typing" so that your arms, shoulders and trunk can move instead of held rigid and constricted.

How to adjust the monitor/flat screen height

Are you looking upward to read the text on the screen? The higher the screen the more you look upward which tightens the neck, inhibits blinking and increases eye irritation. Check for the correct monitor/flat screen height by sitting comfortably with your feet on the floor while looking at the screen.

- If the top of the screen higher than your eyebrow height, lower the screen so that the top is equal or slightly lower than your eyebrows.
- If you cannot lower the screen explore some of the following:
 - Every couple of minutes while exhaling drop your head down to relax your neck.
 - After typing a few lines, look down and close your eyes then while exhaling open your eyes and return to work.
 - Every fifteen minutes or so wiggle and move your shoulders .

How to use a headset

Do you tuck the phone when you multi-task, such as searching the computer for information to answer a question? Raising one shoulder and tilting your head in an asymmetrical position causes excessive muscle contractions and reduces blood flow to the muscles. Arm, wrist and hand symptoms often become aggravated. Use a headset when talking on the phone while simultaneously performing other tasks such as data entry and writing notes. Headsets are economical and lightweight and most have good sound quality. Headsets are readily available for cell phones, making it easier to talk while working, walking, driving, gardening, cooking or sipping a cooler. Test ride different models until you find one that is comfortable.

- If you do not have a headset and must multi-task when conversing on the phone:
 - Do only one task at a time. Put the person on hold, put the phone down, take a breath and smile, perform the task and then pick up the phone and continue your conversation.
 - Use a speakerphone.
 - Hold the handset with your hand while talking; switch sides during the conversation.
- If you absolutely must tuck the phone, do so infrequently and for very short periods of time. Practice frequent neck and shoulder relaxation and alternate sides.

Avoid attachable phone rests that claim to make tucking more comfortable. They DO NOT significantly reduce neck and shoulder tension.

How to get a reminder/vibra mouse

"I know I should take breaks, but I forget and get captured in my work!"

Working continuously without allowing the muscles to relax tends to contribute to discomfort. Avoid continuous low level tension and take a micro-break when cued by your REMINDER MOUSE.

A reminder mouse is a normal optical mouse that senses when you are just holding your hand passively on the mouse and are not using it. If there is no mouse activity for fifteen seconds then it automatically begins to vibrate to remind you. The vibration is the trigger to take your hand away from the mouse and drop it on your lap. Thus, you are reminded to take a micro-break and relax the muscles of your neck, shoulders, arm and hand. Obviously, you can do any other small or large movements as well. It is one of the best reminders to take micro-breaks we have seen.

The reminder mouse-- Hoverstop Mouse-- available from: <http://www.hoverstop.com/>

Highlighting keystrokes

Is your arm and shoulder getting tired while mousing? In Microsoft Windows there are numerous keyboard alternatives to using the mouse. By using the keyboard, you can increase your efficiency and reduce your mousing. The more you use them the easier they become. Some helpful keystrokes specific for highlighting text for Windows users are:

- One character - [Shift+Arrow (right or left)]
- One word - [Shift+Ctrl+Arrow (right or left)]
- One line, to the start or end - [Shift+Home or End]
- One line, up or down - [Shift+Arrow (up or down)]
- Next paragraph - [Shift+Ctrl+Down Arrow]
- Previous paragraph - [Shift+Ctrl+Up Arrow]
- One screen - [Shift+Page Up or Down]
- Beginning or end of document - [Shift+Ctrl+Home or End]
- Everything in the document - [Ctrl+A]
- Some easy mouse tricks for highlighting:
 - One sentence - Control click.
 - One paragraph - position the cursor to the left of the paragraph until it turns into an arrow and double click. Or, click three times on the paragraph to highlight it.
 - A large selection in a document - Click on the first word and hold down the Shift as you click on the last word.

Remember to take frequent breaks, regardless of using mouse or keystrokes.

How to adjust the keyboard height

Does the furniture fit you or are you reaching up to a high keyboard? Working at a keyboard that is too high may contribute to neck, shoulder and arm tension. Begin by checking your position at the keyboard. Let your upper arms hang straight down, bend your elbows at about 90 to 110 degrees, and keep your forearms and wrists level as you extend your fingers to the keyboard. If the keyboard is too high lower the surface upon which the keyboard is sitting or raise the height of your chair. Explore the following:

- Install an adjustable keyboard tray beneath the desktop (be sure it does not bounce).
- Cut a few inches from the legs of the desk.
- Raise the chair height so that your arms are in the correct position (pillows work well); however, if you raise your chair create a footrest so that support your feet to avoid dangling your feet (another use for telephone books).

Regardless how you change the ergonomic situation, take charge and listen to your body. Check in with your body throughout the day and observe unnecessary tension when typing and mousing. Become proactive! Stop your shoulders from inching upward. Relax your neck, shoulders and arms. Integrate breaks and movements into your computing routine by taking micro-breaks (e.g., drop your hands to your lap at every opportunity, such as at the end of a paragraph or when waiting for the computer to process your input), and get up from the desk and walk around. Remember, human beings are made to move and not to freeze in place.

How to use the keys

Do you find yourself reaching out to use your mouse, which is shunted to the side of your wide keyboard? Are you developing mouse shoulder or mouse arm because of the increased muscle tension from arm abduction as you reach for your mouse? In Microsoft Windows there are numerous keyboard alternatives to using the mouse. By using the keyboard, you can increase your efficiency and reduce your mousing. The more you use them the easier they become. Learn and use the following commands:

- Open the START MENU Windows key or Ctrl + Esc
- CLOSE window or program Alt + Spacebar then C
- SHUT DOWN the computer Windows Key, then U, then enter
- MINIMIZE the active window Alt + spacebar then N
- MAXIMIZE the active window Alt + spacebar then X
- COPY selected items to clipboard for later use Ctrl + C
- CUT selected items (and copy to clipboard) Ctrl + X
- PASTE items from clipboard at position of cursor Ctrl + V
- SELECT ALL items in a folder, window, or document Ctrl +A
- UNDO last action Ctrl + Z
- REPEAT last action Ctrl + Y
- SAVE changes to current file Ctrl + S
- PRINT current file Ctrl + P
- OPEN a file from within a program Ctrl + O
- Create a NEW file within a program Ctrl + N

Regardless whether you use the keyboard commands or the mouse, take many micro and movement breaks to regenerate.

How to have a narrow keyboard

Do you find yourself reaching out to use your mouse, which is shunted to the side of your wide keyboard? Are you developing mouse shoulder or mouse arm because of the increased muscle tension from arm abduction as you reach for your mouse? If you are not using the number pad as the major part of your data entry, and you have the budget to do so, replace your keyboard with one that is narrower or one that is split with the 10-key pad imbedded in the keyboard. A narrower keyboard will help you maintain your health, especially if you are petite or small.

- The split feature helps reduce wrist (carpal tunnel) irritation by allowing straight (neutral) wrists when typing.
- The narrow keyboards reduce unnecessary arm, shoulder, and neck tension by allowing placement of the pointing device in the center or closer to your side.

Test ride and substitute narrow or split keyboards without attached number pads for normal or ergonomic wide keyboards. (Research studies* at SFSU have shown that the wider, ergonomic keyboards contribute significantly to arm and shoulder tension when mousing.) Check out the following:

- Goldtouch Adjustable keyboard <http://www.ergodirect.com/default.php?cPath=145>
- MAXIM adjustable ergonomic keyboard <http://www.kinesis-ergo.com/max-spec.htm>
- Ergomagic keyboard <http://www.comfortkeyboard.com/>
- TypeMatrix Comprehensive ergonomic design <http://www.typematrix.com>
- Logitech di Nov Cordless Desktop keyboard and mouse <http://www.logitech.com/en-us/keyboards/keyboard/devices/192>

If your budget prohibits purchase of a new keyboard, check out EBay auctions for used or wholesale keyboards. Or, adjust your workstation keyboard space:

- Create a keyboard tray by clamping a plywood board on the shallow middle drawer of your desk. Make sure that it is wide enough for both the keyboard and the mouse.
- Clamp an extension (e.g., clip board) onto your keyboard tray if it is too narrow for mouse use.
- Use a mouse bridge over the 10-key pad if you infrequently use the 10-key pad.

Regardless of ergonomics, take your micro-, meso- and macro-movement breaks. Remember, remaining healthy while working at the computer includes work style and work attitude.

How to give your laptop a raise

Do you use a laptop at home or at work? Are you forced to look down at the screen or do you have the screen at the right height, causing you to reach up to type? Are your neck and shoulders tired from struggling to adapt to laptop ergonomics? Stop laptopitis and optimize laptop ergonomic factors.

- Observe how you relate to your laptop. Is your laptop sitting on a desk or table with the keyboard and trackpad/mouse too high, forcing you to lift your hands up to type? Or is the keyboard at the right height with a screen too low, causing you to drop your head to look down?
- To minimize laptopitis, use an external keyboard and mouse placed at the appropriate height so that when typing your upper arms hang at your sides, your elbows bend at about 90 degrees with your lower arms and wrists parallel to the floor. Raise the laptop with a support so that the top of the screen is at eyebrow level (see model laptop supports <http://www.backshop.nl>)
- Take many large movement breaks to interrupt the static tension of sitting in one position while working.

How to reduce laptopitis

"Can't you leave the computer at work instead of being married to it and taking it on our vacation?" is no longer an uncommon complaint. The ubiquitous laptop is used at work, in subways, planes, cars and on the kitchen table, writing desk and sometimes even in bed. When using of the laptop, we often collapse to see the screen or place our hands at incorrect heights. Presently more laptops are sold than desktops.

- Optimize the ergonomic set up and check your angles.
 - Are your hands too high because the laptop is on a kitchen table or regular desk? Raise your seat so that your elbows are in a 85-110 degree range and your wrists are level (e.g., sit on a pillow).
 - Are you tilting your head down to read the screen? Look down with your eyes while holding your head slightly more erect. Take every opportunity to look away from the screen while you work. Move and rotate your head from side to side and back and forth. Curl and uncurl your spine by gently arching and rounding your back and neck.
 - Use a laptop stand for convenience with an external keyboard, mouse, trackball or track pad.
 - Use a docking station for ease of use and/or use an external monitor/flat screen that can be adjust to the correct height so that the top of the screen is at eyebrow level.
- Practice micro- and large movement breaks.
 - Move your head, neck and back every 15 minutes (e.g., imagine a pointer at the top of your head and draw figure "8" on the ceiling while relaxing your shoulders and continuing to breath).
 - Relax your shoulders and arms every minute (e.g., drop your hands to your laps after hitting return and then continue to type).

How to create leg space

Are you forced to keep your knees close together or your feet tucked under your chair because the space beneath your desk has become your personal locker? Do you cram a wastebasket, purse, files, computer or supplies under your desk? Restricting movement of our legs and feet while sitting at the computer may reduce circulation to the legs and increase back discomfort and stiffness (think of how you feel when flying coach on a long flight).

- Inspect whether your legs and feet have space to move and play.
 - Is there enough room to straighten your legs so that your heels rest on the floor and carry the weight of your legs?
 - Can you move your legs and feet around so you can move in your chair to change positions for different activities?
- If there is not enough leg and feet space clear the space under your desk so that it is possible to extend your legs and move your knees feet in a ten-inch circle.
- After you have created space, integrate leg and foot movement during the day so that more freedom of movement is possible for your hips and back. Explore the following playful foot movements during the day:
 - Write your name with your big toe on the floor--be sure to continue to breathe.
 - Draw small circles in the air with your feet.
 - Imagine that you are playing the bongo drums using your feet and tap a beat with the ball of the foot on the floor.

Remember: fidgeting is healthful and encourages good circulation.

FITNESS/EXERCISES

How to drop your shoulders

We often tense our shoulders as we rush through the day, focusing on our tasks and anxious to complete our jobs. Tense shoulders, which often creep up toward our ears, can contribute to tension in our arms, wrists and hands, and interfere with blood circulation, resulting in cool hands.

Allow your arms to relax and warmth to flow into your hands by practicing the following:

- Sit in your chair with your hands resting on your lap.
- Breathe slowly and diaphragmatically. Raise your shoulders up and then let them go, allowing them to drop straight down and bounce slightly. Repeat five times, rapidly shrugging and dropping, letting your shoulders bounce with each release. Feel the bounce shake your whole body. Continue breathing as you shrug and drop your shoulders.
- Now, let your arms hang straight down at your sides. (If your chair has arm rests, sit forward so that your arms move freely.) Lift and drop your shoulders five more times as your arms and hands hang down loosely. Your arms should bounce around as if you are a rag doll.
- Finally, sit back in your chair resting against your back support. Lift your hands up and let them drop onto your lap. With your eyes closed, continue breathing diaphragmatically. Feel your shoulders and arms hanging down and your hands weighing heavily upon your lap. Imagine that your arms are hollow, like drinking straws, and that you are gently blowing your warm breath down and through your arms and out your fingers. Make each exhalation longer as you slowly and gently blow the breath out and down your arms. Repeat for 5 to 10 breaths.
- Notice the sensations down and through your arms. Sometimes you may feel a streaming sensation or an increase in finger and hand warmth.

Do this or other large movement every hour.

How to do shoulder rolls

Sitting immobilized for extended time periods often deactivates our back muscles even if we have good ergonomic chairs. Reduce immobility induced discomfort when you do movements such as a shoulder roll.

- Sit or stand comfortably erect. Slowly roll your shoulders forward in large circles for 3 or 4 times. Then reverse. Make sure you breathe comfortably and maintain relaxation in your whole body.
- Explore and play with different ways to perform shoulder rolls (e.g., rotate one shoulder more quickly than the other or rotate shoulders in opposite directions).
- Keep breathing while rotating your shoulders.

Do this in your office, before meetings, on the bus , subway or trains, or when sitting in your car during rush-hour traffic.

How to do a shoulder and arm stretch

Do you feel as if you shrink during the day? Does sitting for long periods at the computer begin to gnaw at your back? Do you feel a little stiff when standing up? Immobility results in stiffness and soreness. Take a break, decompress your spine and feel taller when you perform the following movement:

- Stand up and push away from your chair. Have your feet shoulder width apart (preferably in flat shoes or in stocking feet).
- Breathe diaphragmatically for one or two breaths, allowing relaxation to flow through your body with each exhalation. Interlace your fingers and stretch overhead with palms facing upward. Reach for the ceiling and hold for 30 seconds. Relax and let your hands drop to your sides. Repeat 3-5 times.
- Do this or another large movement breaks every 20 to 30 minutes.

How to turn your head*

Have you noticed that your neck is stiffer and that it is more difficult to look behind you? So often as we focus on our work and we do not take breaks, our neck and shoulders stiffen. Loosen your neck when you practice the following movement.

- Scoot forward and sit straight up at the edge of your chair with your hands resting on your lap.
- Look to the left as far as you can and remember the spot on the wall. Look straight ahead and relax.
- Bring your right hand to the back of your right side of your neck so that your elbow is pointing straight ahead or slightly to the side. While gently holding on the back of your neck, move the elbow the right and left. Let the bend arm swing to right and left while the head rotates in the opposite direction of the elbow. Repeat about ten times and then drop your arm on your lap and rest.
- Bring your right hand to the back of your neck so that your elbow is pointing straight ahead. Reach forward and back with the elbow so that the shoulder moves forward and backwards. As you reach forward with your elbow let it go forward and back about three to 6 inches.
- Repeat about ten times and then drop your arm on your lap and rest.
- Finally, look to the left as far as you can and then come back and relax. Observe how much further you could now rotate to the left.
- Repeat the same exercise except look to the right and use your left arm with your left hand on the left side of your neck.

Practice this or other movement exercises to increase body flexibility.

* I thank Servaas Mes for teaching this exercise.

How to free your neck and shoulders

People who work at the computer often experience hand, wrist, arm and shoulders discomforts. Often the discomfort began following intensive high pressure work periods without interruption. Reduce discomfort and take breaks when you free your neck and shoulders.

- Sit at the edge of your chair with your feet shoulder-width apart and slightly forward of your knees. Let your arms hang along the sides of the chair with palms facing in. Raise your eyes to the ceiling and look as far back as you can and mentally marking the spot on the ceiling. Return to a relaxed, upright position.
- While keeping your shoulders relaxed and arms straight, raise your arms about a foot from your torso, keeping your palms facing your sides.
- Maintain the distance between your torso and arms while you do this exercise. Begin by rotating your thumbs inward and back, so that your palms are facing outwards. At the same time exhale and curl your spine and shoulders forward and tilt your chin downward toward your chest. Then, as you inhale, rotate your palms in the opposite direction so that they face outward and allow your chest to open, with shoulders and head back, chin tilted up and spine slightly arched. Feel your shoulder blades coming together along your spine. Repeat five times. Then rest in a relaxed upright position for a few breaths with your hands either at your sides or on your lap.
- Return to the position with your arms lifted about a foot from your torso with palms facing in. Repeat the same hand, arm and shoulders rotation except during exhalation, as you curl forward, tilt you chin up and look straight ahead. Then, as you inhale and slightly arch your back, tilt your head downward and look towards your stomach. Repeat five times, then rest while sitting up and feel your shoulders relaxing and dropping.
- Once again, raise your eyes to the ceiling and look upward and back as far as you can while sitting. Observe how much further back you can look than at the beginning? In most cases, your range of neck and back motion has increased.

Repeat this and other large movement breaks every 30 minutes.

How to increase rotation*

The neck and back often stiffen after working at the computer and it seems that it is more difficult to look behind you. The tension in the neck increases as the head thrusts forward to focus on the screen. Learn to reduce the neck and shoulder tension when practicing the following:

- Stand up and place your feet shoulder width apart. Stretch your arms out like an airplane wing and your index fingers are pointing to the walls.
- Rotate your arms as far as they can to the right and to the left and mentally mark the point on the wall where you right and left index fingers are pointing. Remember these points. Do not force the rotations--go as far as is comfortable.
- Let your arms drop along your sides while you look straight ahead. Lift your shoulders toward your ears and hold for the count of five. Drop your shoulders down and then let them relax even more for the count of five.
- Begin raising your shoulders; however, do it VERY SLOWLY and feel the tension increasing in the muscles as the shoulders are raised. Hold them up for the count of five and then let them go down VERY SLOWLY. When they are all the way down, let them relax even more Repeat this slow raising and lowering two more times.
- Again, Lift your shoulders toward your ears and hold for the count of five. Drop your shoulders down and then let them relax even more for the count of five.
- Finally, repeat the first rotation assessment by lifting your arms up and rotating your arms as far as they can to the right and to the left. Again look along the arms and index finger and observe how much further you can rotate.
- Repeat this or other movement exercises every thirty minutes to increase body flexibility.

* I thank Sue Wilson for teaching this practice.

How to rotate and breathe

Does your neck make crunching noises when you move your head, Do you experience tightness and pain or is your neck stiff? If you answer, yes, learn to loosen and free your neck with the following exercise.

- Sit forward on the edge of your chair with your feet shoulder width apart and the angle of the knees slightly greater than 90 degrees so that you can see your toes as you look over your knees. While sitting erect, look to the extreme right and the extreme left and remember the spots on the wall as a measure of head rotation.
- Gently tilt your chin slightly downward and begin to rotate your head to the left in a counter clockwise direction. Rotate very slowly and at any point you experience tightness, discomfort or pain, stop. At that point, take a breath and as you exhale image the air flowing down your trunk through your legs and out your feet and at the same time relax your shoulders. Then continue to rotate your head slowly in a circle and every time you feel discomfort or tightness, stop, breathe and relax your shoulders. After completing one rotation, repeat the same exercise except rotate your head to the right in a clockwise direction.
- When your have finished rotating, let your left arm and hand hang along the left side of your body and place your right hand on your left shoulder. Close your eyes, take a deep breath, and as you exhale gently stroke down your left arm with your right hand. While stroking, allow your shoulders to relax and lean forward and to the left. Repeat three times.
- Repeat the similar procedure except allow the right arm and hand to hand along your body and place your left hand on your right shoulder. Close your eyes and stroke down your right side while exhaling. Repeat three times.
- Sit up, and once again look as far as you can to the right and then to the left and observe if you rotated further. In most cases, the movement was freer and the head rotated further.

Practice this and other movement during the day.

How to twist and stretch

Do you feel as if you need to unwind at the end of the day? Do you feel compressed and scrunched down by all the sitting? Do yourself a favor, unwind and decompress when you do the following exercise.

- Sit comfortably in your chair with your feet flat on the floor. If your chair has arm rests, you may need to sit forward so that you have room for movement.
- Place your hands on your hips and slowly bend forward. Now, begin rotating your torso in a circle counterclockwise. As you rotate, feel your spine and ribs stretching and elongating. Make sure that you continue to breathe. Rotate in this direction 3 or 4 times. Then, reverse direction, making sure that you breathe while feeling a gentle stretch.

Do this or other movement exercises every 30 to 60 minutes, especially when performing tasks that require immobility.

How to do side stretches

Sitting immobilized for extended time periods often deactivates our back muscles even if we have a good ergonomic chair. Reduce discomfort with the following side stretch.

- Stand erect with feet a little wider than hip-width apart and knees slightly bent. Place your hands on your hips. Gently tighten your abdominal and buttock muscles.
- Slowly reach toward the ceiling with your left arm engaging your side muscles and reach over your head. Exhale as you stretch. Feel a gentle stretch on your left side. Hold for a count of 15 and slowly return your hand to your hip.
- Repeat with your right side, feeling a gentle stretch on your right while you exhale.
- Repeat 2-3 times on each side.
- Do the movements slowly as if the arm and body are moving through molasses. Always keep breathing.

How to do a body fold

Do you feel your back stiffening up and your shoulders aching after working at the computer for a few hours? As the day wears on, does it feel as if the blood is flowing slower in your brain? Back discomfort is the most common complaint of office workers. Stretch out your back, relax your shoulders and bring blood flow back to your head. To perform this practice you may need to loosen your belt or unbutton your waistband to relax fully. Also, remove high heeled shoes and glasses, if necessary.

- Sit back in your chair with your knees a little bit wider than hip width.
- Turn your toes slightly inward and let the palms of your hands rest on your thighs. Take 3 relaxing diaphragmatic breaths while allowing your shoulders to relax with each full exhalation.
- On an exhalation, tighten your abdomen and fold your torso over your legs. Let your hands slowly glide down your legs to your ankles. Remain folded over for 2 to 3 breaths as you allow your shoulders and back to relax. Feel the increased circulation in your head.
- Then, on an exhalation, tighten your abdomen and slowly return to an upright sitting position. Allow your hands to gently glide up your legs and return to your thighs as you sit up.
- Do this Body Fold 2 or 3 more times. Each time allow the relaxation to spread through your shoulders and back. Make sure that you tighten your abdomen when you fold and unfold-this helps to support your lower back.
- When you're done, stand-up and stretch your hands toward the ceiling. You'll probably feel a little taller.

How to make circles and sixes

Immobility is one of the major contributors to discomfort at the computer as well as increased weight gain. People who unknowingly wiggle and move often tend to be less at risk for obesity and illness. Practice wiggling and moving through out the day to avoid immobility and chronic low level tension. Do the following movement to reduce immobility and tightness and observe how there is a link between your hand and your foot.

- While sitting at your desk, lift your RIGHT foot off the floor and make CLOCKWISE circles.
- While doing this, draw the number '6' in the air with your right hand. Observe how your foot changes direction!
- Even as you try to continue the clockwise rotation, the moment you begin writing a 6 with your right hand, your foot will change directions and you are probably holding your breath!
- Repeat the same activity with your left foot and hand.
- Explore ways to break apart the automatic connection between hand and foot while you continue to breathe.

How to use your legs*

Without knowing many people use their hands to push while standing up from sitting. By using their hands and arms to assist in getting up, the muscles of the neck, back and shoulders automatically tighten. Keep your arms, neck and shoulders relaxed while standing up.

- Observe what happens with your breathing and your arms and hands when you stand-up and sit-down. Are you holding your breath and placing your hands and arms on your thighs or arm rests to assist in standing up?
- If yes, sit quietly for a moment and breathe diaphragmatically for three or four times.
- Then while sitting, stagger your feet by placing one foot under the chair and the other foot beneath your knee. Let your hands rest palms upward on your lap. While exhaling and with a straight back, bend your body forward while flexing at the hips. Continue the exhalation and forward movement of the head and shoulders while pushing yourself off with your backwards placed foot. Allow the back of the neck to lengthen and the crown of your head to lead as you stand. Leave your arms and shoulders relaxed so that they can swing by themselves to the front.
- Allow yourself to bend more at the hips in a fluid forward and up movement so that the work of standing-up or sitting-down is done by your legs instead of in the neck and back.
- If you catch yourself using your arms to stand up, sit down and repeat the standing up without using your arms. After three weeks your legs will feel stronger and your neck and shoulders more relaxed.

*We thank Annette Booiman for developing this tip.

How to engage our quads

Back pain often occurs when we sit for long periods of time. This is especially common when we anchor ourselves in a position of leaning slightly forward when looking at the monitor/flat screen and using the keyboard or mouse. This habitual posture engages the smaller muscles of the back and legs and can lead to a pattern of tightness when we stand and walk. Stop low back tension when you practice the following:

- Stand with your feet shoulder width apart (remove high heel shoes).
- Tighten your abdomen slightly and slowly squat down as you exhale. If you feel the need, hold onto a desk or wall for balance. Go down as far as you comfortably can. Inhale and, as you exhale, slowly stand up. Feel the muscles in your legs carry the burden of the movement. Squat down again and, as you slowly lower your body, allow your back to relax. Keep your back relaxed as you stand up, using your leg muscles. Slowly lower and raise your body two or three more times. (You may only be able to do a few initially, but if you continue doing these daily, you will strengthen your leg muscles.)
- Avoid bending over and do squats when your work allows:
 - When talking on the phone
 - When waiting for a report to print
 - When retrieving a book from a low shelf
 - Whenever you need to collect something from the floor

Remember: Pain equals no gain. If you feel pain, do not do this exercise.

Do this or other large movements every 20 minutes .

How to take a walk

Does sitting in your chair make you tired? Do you wish you had a better ergonomically designed chair? Even though we think that that appropriate ergonomics will solve the problems, in reality any position-even perfectly ergonomically designed-will lead to discomfort if maintained long enough. Just imagine lying in bed for weeks. After a little while the muscles atrophy. Health is the alternation between rest/support and movement. Take a walk to enhance your energy and health. When you walk - especially when you swing your arms and vigorously push off with the balls of the feet -you invigorate you body. The alternating movement of legs and arms allows the back to dynamically move and muscles to tighten and relax with every step, squeezing the lymph fluids and venous blood out of the muscle tissue (tightening muscles) and allows blood to bring rejuvenation (relaxing muscles) creating a healthy circulatory pattern.

- Take every opportunity to take a walk:
 - Park your car on the parking lot as far away from the entrance where you are going.
 - Get off the buses or trams one stop earlier and walk.
 - Take a 10 minute constitutional walk with your co-workers during breaks and after lunch.
 - Walk up the stairs and around the building when meeting a co-worker. Get a breath of fresh air as you walk outside and take a five minute break from the computer.

- After walking ask yourself:
 - How is my energy level?
 - How is my mood?

Universally, you will experience an increase in energy level and positive mood after walking.

How to pick flowers

Have you forgotten to move while working at the computer? Do you feel the need to loosen up? Do yourself a favor and let go of the static muscle tension when you move playfully.

- Push back the chair and stand up. Imagine that you are standing the middle of tall bushes and plants all in bloom. Reach up and bend down to pick the flowers.
- Pick enough to make a bouquet.
- Then imagine giving this bouquet to a friend or co-worker which evokes in them a smile or appreciation.
- Sit down and go back to work.

Repeat this or other movement many times during the day to reduce static tension and increase movement.

How to awaken your fingers

Ever notice your arm and shoulders are tight or your fingers are stiff and cold. Learn to relax them with the following practice.

- Stand up and step a short distance away from your desk and do the following:.
- Reach straight forward and rapidly open and close your hands about 5 - 10 times.
- Drop your hands along your sides and shake your arms and hands and let them relax.
- Reach straight out to your sides and rapidly open and close your hands another 5 - 10 times.
- Drop your hands along your sides and shake your arms and hands and let them relax.
- Reach straight overhead and, again, rapidly open and close your hands 5 - 10 times.
- Drop your hands along your sides and shake your arms and hands and let them relax.
- With your arms hanging along your sides feel the tingling sensations in your fingers and hands.
- Be sure that you continue to breathe while doing this exercise.

Do this or other large movements every 30 to 60 minutes throughout the workday

How to wiggle

Stress immobility syndrome is the process that usually creates discomfort at the computer. The chair and our work style inhibit body movements so we end up as a couch potato while looking at the screen. If you notice your energy level flagging or your body stiffening, increase your energy and flexibility by wiggling.

- Wiggle and shake your body many times during the day. The movements can be done surreptitiously such as, moving your feet back and forth in circles or tapping feet to the beat of your favorite music, slightly arching or curling your spine, shifting the weight on your buttock from one to the other, dropping your hands along your side while moving and rotating your fingers and wrists, rotating your head and neck in small unpredictable circles, or gently bouncing your shoulders up and down as if you are giggling.
- Every ten minutes wiggle to facilitate blood flow and muscle relaxation.

How to wiggle and reach

Being captured by the screen, working quickly and moving the cursor accurately tends to increase muscle tension. Without episodic relaxation and movement breaks, this can lead to chronic neck, shoulder and arm discomfort.

- Take every opportunity to interrupt your work (e.g., clicking on a new website, ending an email, finishing entering data) and wiggle and move. At least every half hour, wiggle or get up from the chair and move. Just wiggle and shake. The more you wiggle during the day the more tension is released.
- Do some stretching or active movement every hour when sitting. Explore the following while sitting:
 - Let both arms hang at your sides. Exhale as you reach across your lap with your right hand and stroke from your left thigh down your left calf to your ankle. As you stroke down, lift your left knee up 6 inches and rotate your head to the right. Inhale as you lower your knee, return your head to center, and pull your right hand up your left leg and across your lap until it rests hanging at your side
 - Repeat this with your left hand and right leg. Remember to exhale as you stroke down to your ankle while turning your head to the left, and to inhale as you return to neutral.
 - Repeat 5 times, alternating from side to side. Relax completely for 1 breath before resuming the movement.
- Take every opportunity to stretch and move. Explore some of the yoga practices illustrated on My Daily Yoga, see: <http://www.will-harris.com/yogaindex.html>

How to have a ball

Do you feel antsy after sitting in your chair for a few hours and begin to squirm? Do you wish that you could replace your chair but don't have the budget? Do you ache to inject more movement in your workday? The desire to be more mobile is the body's way of reminding us that it is healthy to move. Often we remain static, focusing on our work, forgetting to take our breaks. To have ease of movement, set aside that stuffy old chair and instead purchase a stability ball that is large enough for you to use instead of your chair and alternate sitting on the ball with sitting in your chair every thirty minutes.

The appropriate ball diameter depends upon your individual height, as well as keyboard and desk height. Many toy and exercise stores as well as ergonomic suppliers have sturdy stability BURST RESISTANT balls of varying sizes that are fun and healthful to sit on while working at the computer. The cost ranges from \$25 to \$40. Inflate the ball so that it is soft and comfortable to sit on. When you sit on the ball, let your hips be slightly higher than your knees (the angle of your hip is about 100 - 110 degrees).

Ball sizes may need to be increased or decreased depending upon how much you inflate the ball and how you are sitting in relation to the keyboard.

Explore the following guidelines for ball sizes:

- If you are over 6'3" and have long legs use a 75 cm diameter ball
- If you are between 5'2" and 6'2" use a 65 cm diameter ball
- If you are less than 5'2" use a fully inflated 55 cm diameter ball or a partially inflated 65 cm diameter ball

Enjoy bouncing, wiggling and rocking on the ball and keep track of your ball as co-workers may roll away with it. Even though you may suspect that your coworkers think that you are crazy, they will almost all want to use it.

How to move with fun

While working, do you find yourself tired and out of energy? Do depressive thoughts quickly arise? Low energy contributes to negative moods and often increases neck and shoulder muscle tension.

Decrease your tension, change your mood and increase your energy when you move.

- Listen to yourself and when you begin feel tired, STOP doing what you are doing! Stand up and begin the cross-crawl movements instead of reaching for a snack or a cup of coffee. (If you are wearing high heels, take off your shoes.)
- Move away from your chair and desk, lift your right arm up so that the fingers are reaching and pointing at the ceiling and simultaneously lift your left knee up as high as possible. Then drop the right arm and left foot. As the left foot touches the floor, begin to lift the left arm up and right knee. Alternate the cross-crawl movements and do it with a springing step so that you almost stand on your toes of one foot as you reach up with your hand. Repeat ten to twenty times.
- After performing the cross-crawl movements, most people report that their energy increased, their neck and shoulders muscles relaxed, and their attention was more easily focused on the task to be done, for more information see: <http://peperperspective.com/2012/09/30/take-charge-of-your-energy-level-and-depression-with-movement-and-posture/> Also, Robert Thayer (1996) observed that exercise lengthens the time before desiring a snack or cigarette

Thayer, R.E. (1996). *The Origin of Everyday Moods*. New York: Oxford University Press.

How to do keyboard calisthenics

OK. We confess. We really do think that keyboarding is an athletic event.

So much so that we look for any opportunity to make it fun for you to exercise.

- Sit back in your chair and let your hands rest on your lap. Begin by taking 2 to 3 diaphragmatic breaths, letting all the air out with each exhalation while relaxing your hands and arms. Remember to keep a nice breathing rhythm when you do these calisthenics.
- Prayer press: In each position hold for a count of 3 as you gently press your palms together. Place your hands together as if you were praying. Rotate your hands so that your fingers are pointing forward. Rotate so that your fingers are pointing toward the floor. Return to a prayer position. Then, rotate your hands so that your fingers are pointing to your chest. Repeat the sequence 2 to 3 times.
- Finger stretch: This exercise requires enough room to spread your arms wide. Stand up and step away from your chair. In each arm position, open and close your hands quickly 5 to 10 times, making sure that you really stretch your fingers and palms when your hands are open. Reach straight forward. Open your arms wide and stretch to your sides. Reach toward the ceiling. Reach behind your back. Open your arms wide with your hands to your sides and finally, to the front again.
- Wrist flop: Sit on the edge of your chair. In each position allow your wrists to hang for a count of 3, turning your palms down then up for 3 to 5 times. Stretch your arms straight forward and let your hands dangle, palms down, then, up. Stretch your arms out to your sides. Reach toward the ceiling, to your sides, and to the front.

Do these or other stretches every hour. Be creative and invent your own stretches. Share them with your co-workers.

How to achieve back flexibility

Sitting without interruption is a prescription for backaches. In fact, the most common workplace complaint is back discomfort. If you habitually sit for long periods of time, your hamstrings and hip flexors may shorten, resulting in stress on your lower back and pelvis when standing-up. Act more like a cave person (hunter and gatherer) and sit less and move more.

Use every opportunity to get up and walk around: schedule walking meetings, walk to the printer, stand-up to move from your desk to your computer work-station, stand-up when talking on the phone or when someone stops by your desk to ask a question. Every hour practice some of the following leg and back stretches to keep your back loose:

- Put your right foot on top of your desk and straighten your right leg as much as is comfortable, but do not lock your knee. (Be cautious to not push back if your chair is on casters.) Take a gentle breath in and then, while exhaling, slightly tighten your abdomen and bend forward, stroking your right leg with your hands from your knee towards your foot. Reach as far down your leg as is comfortable while, at the same time, keeping your back as straight as possible. Hold for one complete breath, slowly inhaling then exhaling. Then, while inhaling, let go of the stretch and slowly sit erect and relax your abdomen. Repeat three times.
- Change legs and put your left foot on your desk and repeat the stretching exercise three times.
- Optional: repeat the above exercise except stroke your right leg with the back of your left hand while you rotate your head to the left and look even further to the left with your eyes (make sure that you continue to hold slight tension in your abdomen). Repeat three times. Repeat the same movement, except rotate your head to the right and look even further to the right with your eyes as you stroke down your leg, repeat three times.
- Finally, repeat the same movement except rotate your head to the left while your eyes look to the right. Repeat three times.
- Do the stretch with your left leg extended, except that you stroke your left leg with the back of your right hand.

Take a large movement break every 15 to 20 minutes and stretch at least 3 to 4 times a day..6

How to become a computer athlete

Computing is an athletic event. It requires the frequent use of specific muscles hour after hour, day after day. Fitness is an important component in staying healthy and daily exercise is one of the best predictors of health in later life. Yet, when we have done working, commuting, and tending to family needs, most of us don't have that hour to go to the gym. Be like most world-class athletes and prepare for your daily event of computing. The exercises can be done during work or daily chores. Explore some of the following:

- Take a movement/exercise break just as you take a coffee break, or split your coffee break in half dividing it between exercise and relaxation.
- Take a walk with your colleagues instead of meeting them for coffee or lunch.
- Walk up or down the stairs instead of taking the elevator if you can't walk up, at least walk down until you build up your strength.
- When the phone rings, stand up and walk in place or do squats or desk/wall push-offs while talking.
- Do a few chair crunches each day to strengthen your abdominal muscles pull your pelvic bones and lower ribs closer together. Follow crunches with abdominal stretches.
- Do wall or desk push-offs to strengthen your arms vary the position of your arms so that you use your muscles differently.
- Get off or on the bus one stop earlier and walk that extra distance.
- Take at least 10 minutes to walk during your lunch break.
- Sit on a gym ball instead of a chair while working at the computer.
- Take a break from computing and make large circles with your arms, circling for 15 seconds in each direction

10 New Year resolutions.

It is the time of year that many of us reflect on what improvements we want to make. Most often, our resolutions involve improving our health. Take a moment to print and post this list near your computer and make a commitment to improve your health by integrating the following.

- I will take micro-breaks every minute (1-2 seconds).
- I will take meso-breaks every 20-30 minutes (20-60 seconds).
- I will take a large movement break every hour (1-5 minutes).
- I will alternate my tasks.
- I will stand-up to speak to my co-workers when they come to talk with me.
- I will encourage my co-workers to have walking meetings, whenever possible.
- I will take my morning, afternoon and lunch breaks away from my desk/computer.
- I will ask for help if I feel overwhelmed with work.
- I will laugh every day and try to see the humor in most situations.
- I will read and practice the email tips.

We wish you a new year filled with joy, prosperity and untold blessings.

VISION CARE

POSITIVE

WORKSETTING

How to see

Do you strain to look at the screen? Does it compete with the reflections of the lights? Is the light coming through the windows so bright that you squint to see the screen? Is there dust on the monitor/flat screen? As the text looks fuzzy, we unknowingly begin to squint or strain while looking at the monitor/flat screen. Explore the following to improve seeing.

- Clean the screen weekly to improve clarity since the screens static electricity makes it is a superb dust collector. If you wear glasses do not forget to clean them.
- Check and reduce the reflections on the screen. Turn the monitor/flat screen off to observe the reflections. If there are light source reflections visible in the darkened screen explore some of the following options:
 - Place the monitor/flat screen at a 90 degree angle to the light source instead of behind and/or above you.
 - Install an anti-reflection filter on the screen.
 - Buy a flat screen with anti-reflection coating when replacing equipment.
 - Tape a cardboard tablet backing to the side or top of the flatscreen to create shade.
 - Adjust window shades throughout the day to allow for the changing angle of the sun.
- Remember, clarity of vision also depends upon your ability to focus your eyes to see the screen. For many people older than 40, special computer glasses may significantly reduce eyestrain.
- Finally, blink and rest your eyes by looking away from the monitor/flat screen to a tree or other green object.

How to circle your eyes

We all know how the importance of vision. Yet, many of us sit staring at a computer screen most of the day, then go home and watch television, surf the net on our tablet, or play computer games. Extended viewing of a monitor/flat screen can lead to eye discomfort. Dry eyes, redness and itchiness can interfere with concentration and even interrupt sleep, both of which have a negative impact on productivity. Take a moment to pamper and relax your eyes.

- Turn your chair away from the monitor/flat screen, preferably so that you can sit facing a distant view. Sit fully in your chair and lean back. Breathe diaphragmatically one or two breaths and allow the tension to flow out of your body with each exhalation. This exercise is best done with eyes closed.
- Now, gently touch with the tips of your index fingers the inside edges of your eyebrows. Let the pressure of your touch feel similar to the weight of a quarter resting on your arm. Begin to make a circular motion with your fingertips, remaining in that one spot. Circle each finger outward - the right circling clockwise, the left counter-clockwise. Maintain contact with your skin, and continue to breathe diaphragmatically. Make sure that you do not lift your shoulders. Continue circling for 5 to 10 seconds.
- Slide your fingers along the edge of the bone that encircles your eyes maintaining contact with your eyebrows or skin and stop at the following points. At each point, make small circles for 5 to 10 seconds, always circling outward:
 - The center points above your eyes
 - The end of your eyebrows
 - The outside corners of your eyes
 - The center points below your eyes (you should feel a little notch in the bone)
 - The point where the bone begins to curve up
- Let your hands drop to your lap, inhale, and then as you are exhaling slowly open your eyes and look a distant object or view. In addition, limit the time spent watching TV or playing computer games.
- Give your eyes a break and go for walks in the fresh air where your eyes can feast upon luscious green plants.

How to practice eye-neck relaxation*

Did you know that when you sit still and look around with your eyes that you are moving muscles in the back of your neck? Your eyes guide your neck to move in the direction of visual focus. Using your eyes throughout the day without taking large movement breaks may slowly increase neck and shoulder tension as well as eye irritation. Notice how your neck tightens and releases when you look.

- Sit comfortably erect in your chair so that your head and neck are free to move. While looking straight ahead, place the tips of your ring, middle and index fingers of both hands on the back of your neck on each side of your spine, with the ring finger just below the base of your skull. Let your fingers relax so that they can gently sense the movement of the muscles.
- While facing forward, move only your eyes to look to the extreme right and then, to the extreme left. Continue looking from side to side a few times, keeping your head still. As your eyes move, feel with your fingers the movement of your neck muscles. Most likely you can feel the slight tightening and relaxation of these muscles as your eyes shift back and forth.
- While you did this exercise, were you breathing or did you hold your breath? If you held your breath, repeat the above while breathing diaphragmatically.
- Use the above awareness exercise to remind yourself that neck tension and breath holding tend to occur concurrently while looking at the monitor/flat screen:
- Take periodic vision breaks to reduce your neck and shoulder tension.
- Practice some of the following during your workday:
 - Relaxed blinking. Allow your eyelids to drop down and softly close your eyes every minute or so (e.g., while waiting for the computer, at the end of a column of numbers, while talking on the phone, etc.)
 - Drop your hands to your lap and gently shrug your shoulders or wiggle your head during a micro-break.
 - Slowly turn your head from side to side while keeping your eyes soft and feeling softness in the muscles in the back of your head.
 - Breathe diaphragmatically for three or four breaths every 15 minutes.

*We thank Kees Lanser for teaching how to sense the neck tension while looking.

How to increase clear vision

After working at the computer, do your eyes feel tired and irritated? Approximately 35 percent of people experience eye irritation, such as itching, burning, dry eyes or difficulty focusing on distant objects after computer work. To reduce eye discomfort and improve vision do the following:

- Blink frequently when looking (or is it staring?) at the screen. Consciously blinking counteracts the tendency to stare (our blinking rate decreases approximately 70% when concentrating on the monitor/flat screen). Remember to blink at the end of every paragraph or with every mouse click.
- Adjust the top of the monitor/flat screen so that it is equal to or lower than your eyebrows. When looking straight ahead or upward at the monitor/flat screen, our eyes tear less and the corneal surface dries. When looking slightly down, our eyelids will usually sweep down the whole eyeball when blinking, which moistens the cornea instead of only the upper eyeball.
- Look out a window (if possible) at a distant tree or lawn when taking a break, when talking on the telephone or when thinking about a task. Green is a soothing color for our eyes. If you don't have access to a window, decorate your work area with green plants that you can look at during your vision breaks.
- Have your vision checked since clarity of vision also depends upon your ability to focus your eyes to see the screen. Bifocals and progressive lenses usually force the wearer to look through a narrow slit to see the material in focus, which tends to stiffen the neck. Special computer glasses may significantly reduce eye and neck strain.

How to blink and breathe

Staring intensely at the monitor/flat screen may result in blurred vision, dry burning eyes, or difficulty in focusing. Reverse this computer-vision syndrome and enjoy comfortable vision when you master relaxing blinks.

- Take a microbreak and gently lower your upper eyelids so that your eyes close. As your eyelids close, sense your eyes rolling upward and simultaneously exhale. At the same time loosen your jaw so that your upper and lower teeth are not touching. Repeat every few minutes.
- Integrate blinks into your work. Blink at the end of every line, after entering a column of numbers, and with every mouse movement during typing and data entry. Repeat every fifteen seconds.
- Practice relaxing your vision. Look away from the screen to a distant object or place (e.g., look out the window or across the room). As you look into the distance, allow your jaw and upper eyelids to drop. Let your eyes close as you exhale. Feel your eyes sinking into their sockets. Exhale with a slight smile for one or two breaths and then while exhaling gently open them. Repeat every 30 minutes.

How to make it readable

Are you putting your nose to the screen to read the tiny icons, symbols and text? In many cases the icons and text are smaller and more difficult to read when the monitor or flat screen has been upgraded with a screen that has higher resolution. Readability depends upon your capacity to focus your eyes to see the screen and the actual size of the visual object. For many people older than 40, special computer glasses may significantly improve vision and reduce neck strain. Reading and focusing is easier when the icons and text are larger. Following are instructions for PC users to increase the size of the text and icons by changing screen resolution:

- Adjust the screen resolution so that the items and text are large enough for comfortable viewing. In most cases, the monitor/flat screen resolution can be reduced through the software (e.g. from 1280 x 1024 to 1024 x 800). To do this, left click on Start button, left click on Control Panel, double left click the icon labeled Display (for XP you will need to click on Appearance and Themes, then on Display), left click on the tab labeled Settings, left click and drag the tab underneath Screen resolution to the left--the numbers of resolution change as you move the tab, left click on Apply.
- Optimize screen for vision:
 - Adjust the height of the monitor/flat screen so that the top is at eyebrow level.
 - Adjust the monitor/flat screen so that it is about an arms length away from the eyes (about 23-28 inches). If it is too close, it may be possible to pull your desk away from the wall so that the monitor/flat screen can be pushed backwards.
 - Prevent reflection and glare by blocking bright light sources, or by moving the monitor/flat screen location so that it is at right angle to or blocking the light source.
 - Reduce light contrast: namely, if it is dark in the room, turn on lights; if it is too bright, close a curtain or turn off lights.
- Reduce eyestrain:
 - Blink frequently.
 - Rest your eyes by looking away from the monitor/flat screen at the far distance.
 - If possible, close your eyes and allow your face and jaw to relax when speaking on the phone.

How to clean the air

The recent concern that laser printers may produce pollutants that can lodge deeply in our lungs reminds us that the air in our work and home environments is potentially harmful. Materials and equipment in office buildings and homes usually contain micro dust particles and a chemical brew of volatile organic compounds (e.g., formaldehyde, benzene and trichlorethylene) that are outgassed from paper, inks, furniture, carpet, paints, wall coverings, cleaning materials, and floor tiles. These gasses stay in the rooms where there is limited air circulation due to sealed buildings or closed windows. Copiers and laser printers add to, and activate, this mix by producing microscopic dust particles and sometimes ozone. Indoor air pollution is often greater than outdoor. Be proactive to reduce pollution and enhance your health.

- After renovation or installation of furniture or carpets, be sure to allow for air circulation by opening windows and doors. Explore some of the following strategies to clean the air:
 - Ventilate your work area (open a window or door, if possible).
 - Move copier/laser printers to a well-ventilated space and/or place an exhaust fan near the printer.
 - Turn off copier or laser printers when not in use (purchase new equipment that is energy efficient and shuts down when not in use).
 - Install an air purifier/filter.
- Place plants in your office and home to help clear the indoor smog and remove the volatile organic compounds (VOCs). The following plants all mop-up VOCs and some gobble up specific chemicals in this brew.*
 - Azaleas, rubber plants, tulips, poinsettia, philodendron and bamboo palms (formaldehyde)
 - Areca palm (toluene)
 - Lady palm (ammonia)
 - Peace lily and chrysanthemum (acetone, methanol, trichlorethylene, benzene, ethylacetate)
- If you work in a sealed environment, take a walk at lunch or ask coworkers to have a walking meeting so that you can get out in the fresh air.

*Read: *How To Grow Fresh Air* by Bill Wolverton, Penguin, 1997.

How to keep warm

Winter chills are fast approaching. With the change in ambient temperature comes the need to maintain warm hands and bodies. Warm hands are particularly important in maintaining health at the computer because when chilly, people tend to tighten their neck and shoulders which may increase computer-related. Explore some of the following to become and stay warm:

- Eat breakfast. The most important thing you can do for yourself is eat a good breakfast that includes protein and preferably something warm, such as hot cereal, on a cold morning. When the body is not given sustenance, it will decrease blood flow to the periphery (hands & feet) to ensure that the brain and vital organs are maintained optimally.
- Dress smartly. Make sure that you layer your clothes so that you can adjust to interior warmth and exterior chill.
- Reduce stress. Stress often causes vasoconstriction of the peripheral blood vessels. By reducing stress, the blood vessels dilate and the hands warm up.
- Wear a hat or scarf. We lose approximately 30% or more of our body heat through our heads. To improve blood flow to the hands and feet, cover your head.
- Wear gloves. When walking outside on cold days wear gloves as well as a hat or scarf.
- Practice diaphragmatic breathing with hand warming. As you exhale, imagine that you can blow your warm breath down and through your arms and into your hands and fingers. Breathe with this warming imagery for 2-3 minutes throughout the day.
- Exercise regularly. Exercise increases blood flow. Walk on your breaks. If the weather is okay, get off your bus a stop or two early to increase walking distance.

How to control the sound

Do you notice it takes more effort to listen when there is lots of background noise? Do you feel exhausted after being in a room with lots of noise? Many sounds including white noise -- used mask out other unpleasant sounds--significantly reduce work productivity. In open plan offices, with lots of background noise, productivity often drops by one third. Reduce the sources of sound to increase your energy level and improve productivity*.

- Identify and locate all sources of noise such as equipment electrical hum, background music, and slamming of doors. Reduce the noise sources over which you have control such as turning the equipment off until you need it or closing doors or windows.
- Wear earplugs or sound attenuating headsets to improve your productivity when you do not have control over the source of the sound.
- Play nature sounds that include the chirping birds or pleasant music to induce a feeling a relaxation and safety. Biologically, we are primed to relax and feel safe when we hear birds chirping.

*For more information:

http://www.ted.com/talks/julian_treasure_the_4_ways_sound_affects_us.html

How to skip the white stuff

Do you get irritated and experience a drop in energy? Do you try to boost your energy with coffee and sweets? Is your breakfast mainly sugary cereals? Do you worry about arthritis, diabetes, heart disease or getting cancer? White flour, white rice, white potatoes, sodas, Danish, most commercial breakfast cereals all high on the glycemic index. These foods tend to increase our weight and girth and enhance inflammatory diseases that includes arthritis, heart disease and cancer. Use your diet as one strategy to improve your energy and health.*

- Whenever you shop for food, buy foods that are REAL and are not processed with content labels that do not list any unpronounceable multisyllabic words. Eat only the foods that existed before the 1940's. Eat whole grain foods instead of white flour foods.
- Reduce the use of corn, cane or beet sugars completely. Oh, yes, that means no sodas, no pastries or cakes, no processed foods and no foods with corn sweetener.
- When snacking, eat fruit and/or raw nuts.
- When in doubt what to eat, eat locally grown vegetables, fruits and nuts.
- When you reduce the white stuff, your ongoing energy will increase and you will significantly reduce your risk of cancer--including prostate and breast cancer--and other inflammatory diseases.

*For more information, see:

Pollan, M. (2011). *In Defense of Food: An Eater's Manifesto*. New York: Penguin Press.

Servan-Schreiber, D. (2011). *Anticancer: A New Way of Life*. New York: Viking

Gorter R. & Peper, E. (2011). *Fighting Cancer-A None Toxic Approach to Treatment*. Berkeley: North Atlantic.