

Ergonomics Toolkit

Impromptu Ergonomics

CHUBB®



Connected

We have become an e-mobile society. Many people are constantly connected to work and family via smartphones, tablets, laptops, Webcams, virtual meetings and the Cloud. Unfortunately, the advances in all this connectivity have not necessarily translated into advances in most workers' personal ergonomics.

The typical road warrior may spend countless hours in awkward unchanging positions that often occur in tight or cramped spaces and doesn't have height-adjustable keyboard trays or even peripherals. Costly checked bag fees mean that many road warriors have had to limit what they bring along to what fits in the overhead compartment and under the seat in front of them. That typically means stripping down the office workstation to just a laptop computer or tablet and lugging everything through the airport to get to their final destination. Since ergonomics is about fitting the task to the person, it's important to provide frequent travelers with information on how to handle working in challenging situations. With knowledge about ergonomics principles and some

creativity, the savvy worker can make impromptu adjustments to reduce stress and discomfort while working on the go.

Traveling Offices

Because prolonged holding or carrying a 2- to 8-pound laptop has a direct effect on posture, workers should eliminate the carry by using a wheeled bag or backpack. Lighter-weight bag options are preferred since travelers frequently lift them into a vehicle trunk or into overhead airline storage compartments. The bag should have high-quality wheels and a long-enough handle for easy maneuvering. If the bag doesn't have wheels, the carried laptop load should be balanced on both sides of the body. Travelers should avoid carrying laptops by the bag handle. At the very minimum, a bag with a padded shoulder strap should be used, and the load should be shifted between right and left shoulders frequently to provide mini-rest breaks to each side of the body. Two padded shoulder straps, as on a backpack, are preferred to distribute the load across both shoulders more evenly. Backpacks should be worn high on the torso.

Risk Engineering Services

Whether at the airport, in the car, in a hotel, or in a remote office setting, travelers frequently find that the equipment provided at the temporary work location is not ideal. Knowing a few tricks of the trade can minimize potential musculoskeletal risks they encountered.

Sitting Posture

A pillow, cushion or even folded towels can be used to raise the worker high enough in the chair so that the elbows are level or slightly higher than the keyboard. A rolled-up bath towel or pillow can be used to support the lower back. If the feet cannot be placed flat on the floor with the altered sitting height, consider placing them on a book, briefcase or other solid object in order to keep them supported with the thighs parallel to the floor. A stable ironing board can serve as an impromptu adjustable keyboard tray. A lightweight foldable laptop stand can ensure that the laptop monitor is positioned at the proper height.

If there isn't a surface low enough or a chair high enough to work comfortably, then the lap is always an option. Sit so the knees and hips are level to allow the laptop to rest comfortably in the lap. Laptops can produce significant amounts of heat, so it is a good idea to place a heat-dissipating barrier, like a towel or large thin book, between the laptop and the user's lap. It is not advisable to use the laptop in bed, but, if it can't be helped, pay close attention to the body's posture and ensure that the lumbar region of the back is properly supported. Try to sit up straight so as to avoid neck, shoulder and back discomfort. Pillows can be used to support the lower back and head. And remember to use a heat-dissipating barrier.

Breaks

Frequent work breaks are especially important in a mobile computing environment—even brief ones. Listen to the body and take a short break when the first signs or symptoms of discomfort arise. Short stretching exercises, a trip to the bathroom, or a walk to the water fountain are purposeful ways of



incorporating breaks into the worker's routine. Taking a break to change working positions is perhaps the best reason to take a break. Alternating between working with the laptop on the desk for better screen position and with the laptop in the lap for better arm position is a common position toggle. Remember, the best position is the next position!

Airplane

Few people would describe current airplane coach seating as comfortable, let alone expansive. If travelers need to use a laptop on the airplane, a bulkhead seat or an exit row may be the best compromise between cost and space. Bulkhead seats are not limited by a reclined seatback in the row ahead. Exit rows provide more seat-to-seat spacing and will allow travelers to keep their arms in more-neutral positions. A small pillow or folded in-flight magazines can provide support to the neck or lower back, and the tray table can serve as a great heat-dissipating barrier between the lap and laptop.

Technology

With new technologies emerging every day, it's good to take a step back and ask how the technologies are used and if there are any inherent risks. Smartphones can keep travelers connected while on the move, but their size also introduces some risk of injury with overuse. Frequent text messaging can lead to tendonitis of the thumb, also known as De Quervain's disease or "Blackberry Thumb". Keyboard use can be minimized with the use of the dictation mode supplied on many of the newer phones.

Tablet computers are larger than smartphones yet lighter in weight than laptop computers. Their built-in touchscreen keyboards also induce poor neck posture (flexion) like smartphones and laptops. Tablets may be an alternative to a heavy laptop, but, if using a tablet for an extended period of time, a tablet stand, external keyboard, and external pointing device are recommended.

Travel keyboards and travel mice can be handy space-saving devices since they are usually smaller than their standard full-size counterparts. However, they can create smaller pinch-like grips and additional awkward postures in the hands and wrists which lead to a more-rapid increase in fatigue and a greater potential for musculoskeletal disorders (MSDs). If travelers spend large amounts of time using these external devices, make sure that the devices fit their hands comfortably. The one-size-fits-all approach definitely does not apply here.

Technology advancements have many upsides, but they also present some new challenges especially for the telecommuter and frequent traveler. These workers can easily slip into an always-on lifestyle with extended working hours in awkward postures. Using ergonomics principles to fit the task to the person can prevent pain at home and on the road.

Connect With Us

For more information about protecting your employees, contact your local Chubb risk engineer or visit us at www.chubb.com/engineering.

Impromptu Ergonomics Checklist

Transport	Y	N	N/A	Potential Fixes	✓
Is a wheeled bag or a backpack used to transport the computer and its peripheral equipment?	<input type="checkbox"/>	<input type="checkbox"/>		Use a wheeled bag or backpack	<input type="checkbox"/>
Does the wheeled bag have a long-enough handle to prevent awkward back postures while using it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use a wheeled bag with a longer handle	<input type="checkbox"/>
Does the nonwheeled bag have at least one padded shoulder strap? (Two straps are preferred.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use a bag with at least one padded shoulder strap (two straps preferred)	<input type="checkbox"/>
Is the nonwheeled bag strap shifted from one shoulder to the other frequently to provide mini-rest breaks to the other shoulder?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Switch shoulders frequently when using a bag with only one strap	<input type="checkbox"/>
Are both straps of the backpack used (one on each shoulder) to distribute the weight of the computer and its peripheral equipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use both straps of the backpack	<input type="checkbox"/>
Is the backpack worn high on the torso?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wear the backpack high on the torso	<input type="checkbox"/>

Sitting	Y	N	N/A	Potential Fixes	✓
Can the chair be raised high enough so the elbows are level with or slightly higher than the keyboard?	<input type="checkbox"/>	<input type="checkbox"/>		Sit on a pillow, cushions or folded towels to raise the worker	<input type="checkbox"/>
Has the laptop screen been raised, assisted by the use of an external keyboard and pointing device in an effort to keep the elbows level with or slightly higher than the keyboard?	<input type="checkbox"/>	<input type="checkbox"/>		Use an external keyboard and external pointing device	<input type="checkbox"/>
Is the lower back supported?	<input type="checkbox"/>	<input type="checkbox"/>		Support the feet with a book, briefcase or other solid object	<input type="checkbox"/>
Can the feet be placed firmly on the floor with the thighs parallel to the floor?	<input type="checkbox"/>	<input type="checkbox"/>		Support the feet with a book, briefcase or other solid object	<input type="checkbox"/>
Is the laptop used at a workstation instead of on the lap? (Lap use is recommended only if the chair/user cannot be adjusted high enough or the work surface cannot be lowered enough.)	<input type="checkbox"/>	<input type="checkbox"/>		Adjust the chair higher or the work surface lower if possible	<input type="checkbox"/>
Are the knees and hips level to allow the laptop to rest comfortably in the lap?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Position the knees and hips level	<input type="checkbox"/>
Is a heat-dissipating barrier used between the laptop and the lap?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use a large thin book or folded towel as a barrier	
Is the laptop used at a workstation instead of in bed? (Bed use is recommended only as a last resort if the chair/user cannot be adjusted high enough or the work surface cannot be lowered enough.)	<input type="checkbox"/>	<input type="checkbox"/>		Use a chair and workstation if possible	
Is the user able to sit up straight with the lower back and neck supported?	<input type="checkbox"/>	<input type="checkbox"/>		Sit up straight and use a pillow or rolled-up towel to support the lower back and neck	
Are short breaks taken before signs and symptoms of discomfort arise?	<input type="checkbox"/>	<input type="checkbox"/>		Take a break to change to another working position, use the bathroom or walk to the water fountain	

Airplanes	Y	N	N/A	Potential Fixes	✓
Does the seat ahead provide ample space to use the laptop?	<input type="checkbox"/>	<input type="checkbox"/>		Consider sitting in a bulkhead or exit row seat or utilizing a laptop with a smaller footprint	<input type="checkbox"/>
Are the lower back and neck supported?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Provide support with a pillow or rolled-up blanket	<input type="checkbox"/>
Is a heat-dissipating barrier used between the laptop and the lap?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use a magazine or tray table as the barrier	<input type="checkbox"/>

Tablets & Smartphones	Y	N	N/A	Potential Fixes	✓
Is an external keyboard employed when using the tablet or smartphone for extended periods of time?	<input type="checkbox"/>	<input type="checkbox"/>		Consider sitting in a bulkhead or exit row seat or utilizing a laptop with a smaller footprint	<input type="checkbox"/>
Is an external pointing device employed when using the tablet or smartphone for extended periods of time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Provide support with a pillow or rolled-up blanket	<input type="checkbox"/>
Is a stand or prop employed when using the tablet or smartphone for extended periods of time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use a magazine or tray table as the barrier	<input type="checkbox"/>

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