Ergonomics for Telecommuters and Other Remote Workers

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Agenda

- Background
- Telework/Telecommuting overview
- Safety & Ergonomics
- Solutions
Part 1 – Telecommuting Programs
Telecommuting & Telework

- Terms coined by Jack Nilles in 1973 – Researcher at USC
- Work done someplace other than the corporate office (i.e., homes, coffee shops, airplanes, cars)
Telework Trends

- **Feb 2009 World At Work**
  - Employees who telework (at least 1 day per month) rose from 12.6 M in 2006 to 17.2 M in 2008
  - Just over 11% of total employee population in 2008
  - Contract employees who telework rose from 16.2 M in 2006 to 16.6 M in 2008
  - Total employees
    - 23.5 M in 2003
    - 33.7 M in 2008
    - 43% Increase

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# Telework Trends

<table>
<thead>
<tr>
<th>Location</th>
<th>2006 (n=140)</th>
<th>2008 (n=130)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>76%</td>
<td>87%</td>
</tr>
<tr>
<td>Customer/client's place of business</td>
<td>28%</td>
<td>41%</td>
</tr>
<tr>
<td>In the car</td>
<td>38%</td>
<td>37%</td>
</tr>
<tr>
<td>Café or restaurant</td>
<td>31%</td>
<td>23%</td>
</tr>
<tr>
<td>Hotel or motel</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>Park or other outdoor location</td>
<td>19%</td>
<td>14%</td>
</tr>
<tr>
<td>On airplane, train or subway</td>
<td>13%</td>
<td>21%</td>
</tr>
<tr>
<td>Airport, train depot or subway platform</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>Library</td>
<td>16%</td>
<td>10%</td>
</tr>
<tr>
<td>Employer's satellite location</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>Telework center (not their employer's)</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>None of the above</td>
<td>12%</td>
<td>4%</td>
</tr>
<tr>
<td>While on vacation</td>
<td>18%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Percentages are based on weighted data, while sample sizes shown ("n") reflect the actual number of respondents.
Telework Trends

**FIGURE 9: Profile of a Telecommuter, 2006 and 2008**

<table>
<thead>
<tr>
<th>Number of “employed. telecommuters,” U.S.</th>
<th>2006 (n=140)</th>
<th>2008 (n=130)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28.7 million</td>
<td>33.7 million</td>
</tr>
<tr>
<td>Men</td>
<td>53%</td>
<td>51%</td>
</tr>
<tr>
<td>Woman</td>
<td>47%</td>
<td>39%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>38%</td>
<td>42%</td>
</tr>
<tr>
<td>35-64</td>
<td>52%</td>
<td>49%</td>
</tr>
<tr>
<td>55+</td>
<td>11%</td>
<td>8%</td>
</tr>
<tr>
<td>Mean age</td>
<td>41.0</td>
<td>40.3</td>
</tr>
<tr>
<td>Median age</td>
<td>40.0</td>
<td>38.0</td>
</tr>
</tbody>
</table>

**Educational Attainment**

<table>
<thead>
<tr>
<th></th>
<th>2006 (n=140)</th>
<th>2008 (n=130)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School or Less</td>
<td>18%</td>
<td>23%</td>
</tr>
<tr>
<td>Some College/Vocational</td>
<td>25%</td>
<td>28%</td>
</tr>
<tr>
<td>College Graduate</td>
<td>57%</td>
<td>50%</td>
</tr>
<tr>
<td>Post Graduate Degree</td>
<td>22%</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Household Income**

<table>
<thead>
<tr>
<th></th>
<th>2006 (n=140)</th>
<th>2008 (n=130)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $40,000</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>$40,000 - &lt;$75,000</td>
<td>26%</td>
<td>32%</td>
</tr>
<tr>
<td>$75,000 or more</td>
<td>37%</td>
<td>52%</td>
</tr>
<tr>
<td>Refused</td>
<td>17%</td>
<td>5%</td>
</tr>
</tbody>
</table>

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Telework Trends – In the News

- “H1N1 fears could lead to rise in telecommuting”
  - By Peter Tertzakian, Calgary Herald
  - October 11, 2009

- “Telework 2011 | A WorldatWork Special Report”
  - Telework dropped with the drop in the economy
  - Edited By Andrea Ozias, WorldatWork
  - June 2011
Telework Trends – In the News

- “Yahoo CEO Marissa Mayer's ban on telecommuting sparks a firestorm”
  - Yahoo! eliminates telecommuting for random meetings in hallways and cafeterias
  - Brandon Bailey
  - MercuryNews.com
Benefits of Telework

- Happy employees
  - Recruiting and retention
  - Increase in productivity
  - Reduced absenteeism
  - Increase in morale
  - Decrease in stress
  - Reduction in the spread of illnesses
Benefits of Telework

- Reduce need for office space – Saves $$
  - Energy savings
  - Cost savings for smaller buildings
  - Insurance decrease
  - Less furniture
  - Cost savings are significant for those organizations that have reduced their real estate portfolio
    » An average annual cost savings of $3,000 to $10,000 per employee was reported
    » Two organizations reported annual cost savings of roughly $200 million related to real estate reduction through telework.
Benefits of Telework

- Green impact
  - Less traffic
  - Less CO₂ emissions
  - Corporate responsibility reports
- Aids with emergency planning
  - Pandemics
  - Natural Disasters
- Flexible dependent care
- Accommodates employees with disabilities
Drawbacks of Telework

- Concern by managers that staff is not working when at home
- Less face to face meeting time
- How to manage staff when working from home?
- Social dynamics can change
- Some work is difficult to perform remotely
Telecommuting Success Stories In the News

- Stanford University Study – February 2013
  - 16,000 Chinese travel agency, 9 month study
  - 9% increase in productivity - fewer breaks and sick days
  - 4% increase in productivity – more calls per minute – quieter
  - Employees also had less turnover and more work satisfaction

http://www.stanford.edu/~nbloom/WFH.pdf
Telecommuting Success Stories In the News

- Internal Revenue Service (IRS)
  - Telecommuting allowed office to stay open during 2006 flood that shut down headquarters
  - Real Estate savings of $585,000 for 150 pilot participants
Steps to Implementing a Telecommuting Program

- Identify Goals and Objectives
- Appoint a Telecommuting Advocate
- Create a Steering Committee
- Draft Telecommuting Policies and Worker Agreements
- Analyze Voice and Data Needs and Costs
- Secure Senior Management Buy-In
- Train Managers and Telecommuters
- Implement a Pilot Program
- Get the Word Out
- Provide Ongoing Evaluation and Support

Source: Telecommute Connecticut

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Teleworking Policies

- Definitions of Levels of Teleworking
  - **Location**--Will telecommuting be limited to working at home or will you allow other alternative work sites as well?
  - **Frequency**--Will your telecommuters telecommute full-time or part-time? One day a week or five?
  - **Hours**--Will they be allowed to set their own hours or, must they work during the regular work hours? Or will you set up core hours during which all telecommuters must work, leaving the rest of their work hours up to them?

(HR Magazine, *Telecommuting Policies that Work*)
Teleworking Policies

- Eligibility
- Liability Statement
- Workers’ Compensation
  - Employee’s home is an extension of the workplace so workers’ compensation regulations apply
- Homeowners’ and Liability Insurance
- Security
  - Data and employee
- Telephone / Data Connection
- Equipment and Supplies
Teleworking Policies

- **Dependent Care**
  - “The telecommuter shall have family arrangements, which allow the telecommuting work site to be a productive working environment.”

  (Finance and Administration – Telecommuting Program, State of Tennessee 2001)

- **Travel Expenses**

- **Safety & Ergonomics**
Possible Teleworking Equipment

- Ergonomically-designed desk and chair
- Surge protection
- Lighting
- Computer, laptop, software, peripherals
- Broadband or wireless
- Printer/copier
- Fax, scan capacity
- Phone
- Cell phone
- Voicemail
- Storage and shelves
- PDA, Pager
- Ergonomic and safety guidelines
NECE Participant Survey – What ergonomic equipment do you provide for your remote workers?
Is a laptop, keyboard and mouse enough?
How are people working at home?
How are people working at home?
How are people working at home?
How are people working at home?
How are people working at home?
How are people working at home?
Safety & Ergonomics

- Often an after thought once program is in place
- Important to track the impact of telecommuting on safety / injury record
  - Data lacking on impact of telecommuting on safety and injury records
  - Once an ergonomic program is implemented, need to show ROI - metrics are important
  - Need to work with internal HR departments on Workers’ Compensation data
NECE Participant Survey – Effect of Injury Rate due to Telecommuting Program

- Increased injury rate: 9.1%
- Injury rate remained the same: 18.2%
- Decreased injury rate: 36.4%
- Program is too new to determine impact: 36.4%
- Don’t know: 0.0%
Part 2 – Ergonomics & Safety
Why is Safety so Important?

- General Duty Clause – Federal OSHA
  (a) Each employer --

  (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

  (2) shall comply with occupational safety and health standards promulgated under this Act.

  (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.
OSHA on Home-Based Workstations

- Home offices will not be inspected by OSHA
- OSHA does “not expect employers to inspect the home offices of their employees”
- “OSHA may informally let employers know of complaints about home office conditions”
- Must still keep records of injuries regardless of location
- “this instruction does not alter or change employers’ obligations to employees”

Why is Safety so Important?

- Workers’ Compensation
  - If the employee is injured performing work duties then they will be covered under workers’ compensation laws regardless of where they are working.
Home Office Safety Issues

- **Fire Hazards**
  - Free of frayed wires
  - Not cluttered with large amounts of combustibles

- **Electrical Hazards**
  - Outlets should be grounded (3 pronged)
  - Circuit breakers should be labeled
  - Computer equipment should be plugged into a surge protector
Home Office Safety Issues

- Egress
  - Should have easy movement in the space and easy to exit
- Stairs with 4 or more steps need handrails
- Disaster Recover Plan
- Emergency Action Plan
Ergonomic Risk Factors

- Force
- Repetition
- Awkward Postures
- Static Postures
- Vibration
Ergonomic Risk Factors

- Working at home is no different than in the office in terms of risks but intensity may be increased – let’s take a look at some examples
Examples of Home Offices
Examples of Home Offices
Examples of Home Offices
Examples of Other Locations

- Coffee Shop
Examples of Other Locations

- In the Car
Examples of Other Locations

- In the Car
Hotel / Hot Desking

- Offices or areas within an office where employees use any workstation available
- Not assigned workstations
Hoteling / Hot Desking

- Accommodating individual physical needs
- Accommodating individuals tasks and function needs
- Employees may not adjust workstation each time they sit down at a new workstation to work.
- Making adequate resources available to maintain productivity versus creating distractions
- Concern over the spread of flu and diseases – sanitation
Hoteling / Hot Desking

- Benefits
  - Can work face to face with co-workers from time to time
  - Need less space than assigned cubes and offices
Ergonomic Considerations

- Supply each workstation with docking station, adjustable chairs, adjustable monitors (monitor arms), keyboard, mouse, keyboard tray
- Programmable phones where employees can be reached with their standard number or cell phones (depends on culture)
- Reminders in each work area on quick set up tips
- Reminders / cues where printers, copiers, standard office equipment supplies are located
Hotelining / Hot Desking
Part 3 - Solutions
NECE Participant Survey – How do you address ergonomics?
Informal Benchmarking Study – Home Offices

- 5 software / hardware industry clients surveyed
- Proactive Companies Programs Include –
  - Online ergonomic evaluation process. In some companies, it is also part of an initial qualification process.
  - Training and/or guidelines and tips on ergonomics
  - Phone evaluations to support remote setup in the event of discomfort report – most companies do not send ergonomists to the house
  - Ergo budget (range is $500-1,500 depending on the company). The budget includes the following preapproved equipment: chair, monitor, keyboard, mouse, keyboard tray, headset, and gel wrist rests etc. In one particular company, they also approve desks.
Informal Benchmarking Study – Home Offices

- Reactive Companies
  - Only provide equipment once a requested or a complaint is made.
  - Equipment recommendations are the same as the company standard product recommendations
  - One example company - when pain, discomfort or claim of injury is reported,
    » Employee takes pictures of his/her remote workstation
    » Request that the employee visit a preapproved occupational health clinic
    » Send the pictures to the clinic and have the medical provider determine the work relatedness of the injury/discomfort.
Esuites / Remote Leased Offices

- Esuites
  - Small offices
  - Leased
  - Majority include furniture with the lease of building

- Concerns Raised
  - How to get these staff ergonomic equipment if not provided within lease?
  - Can lease be negotiated to provide ergonomic equipment?
  - If equipment purchased and sent to site, how do you keep inventory and retrieve furniture if office closes?
How do you address ergonomics remotely?

- Digital Pictures
- Web Cameras
- Checklists
- Online Self Evaluations
- Phone Evaluations
- Pre-established resources (vendors, equipment, etc)

Note – Onsite evaluations needed in Ireland
Digital Pictures

- **Advantages**
  - Give you a quick look at what equipment employee is using
  - If employee is in picture gives idea of possible issues and how employee interacts with the workstation
  - Employee can see their own posture and position

- **Disadvantages**
  - Only a snapshot
  - How does the employee sit and work when not on camera?
Web Cameras

- **Advantages**
  - Live pictures of employee working
  - Employee can also see evaluator who can show how they want employee to be positioned

- **Disadvantages**
  - Everyone may not have a camera
  - If camera built into monitor only one view – can’t see employee from the side
Home Office Safety Checklists

- **Advantages**
  - Quick for employee to complete and evaluator to review

- **Disadvantages**
  - Typically yes/no questions
  - No visual of the workstation
  - Employees may have different interpretations of questions
  - No feedback mechanism unless evaluator calls employee to discuss and make recommendations for improvement
Home Office Safety Checklists

- Includes Ergonomics and General Safety
  - Ergonomics
    » Adjust your chair and use your back support
    » Adjust the position of your monitor (top at eye height, arm’s distance away)
    » Adjust your position or your keyboard and mouse to elbow height.
    » Adjust equipment to keep your arms relaxed and wrists straight
    » Use a document holder if referencing printed materials
    » Ensure that there is enough room under your desk for your legs.
Home Office Safety Checklists

- Includes Ergonomics and General Safety
  - General Safety
    - Keep office clean and neat and free of excessive amounts of combustibles
    - Electrical hazards (frayed cords, overloaded circuits, daisy chained power strips, etc.)
    - Easy egress
    - Secure wires to reduce tripping hazards
    - Use a chair in good repair – fix loose casters, chair rungs, etc.
    - Secure carpets and make sure they are free of worn or frayed seams
    - Emergency action plan developed
Online Self Evaluations

- Advantages
  - Teaches employees how to adjust their own workstation
  - Can integrate online training (Cal-OSHA regulation)
  - Includes checklist with feedback on what changes to make
  - Automated customized communications

- Disadvantages
  - Limited personal interaction with employee
Online Self Evaluations
Online Self Evaluations

Do you frequently experience upper back and/or neck fatigue as a result of viewing documents that are lying flat on your desk?

[ ] No
[ ] Yes

Which picture best demonstrates the rotation of your head when viewing your monitor(s)?

Note: Select the image that best matches your head rotation, even if your monitor configuration differs from what is shown. If you use 2 or more monitors, answer this question with respect to the monitor(s) you use the most.

[ ] I look straight ahead
[ ] I rotate my head slightly
[ ] I rotate my head significantly

Select the picture that best represents your typical chair height and body position:

[ ] Knees higher than hips
[ ] Knees same height as hips
[ ] Knees below hips
[ ] Chair too high, feet don’t easily reach floor
Online Self Evaluations

Workstation Setup: Chair Positioning

Seat Pan: To facilitate a neutral spine and distribute body weight evenly throughout your back and legs, position your seat pan parallel to the floor, or tilted slightly forward - only as far as is comfortable. It should be far enough forward to support your thighs, but the seat edge should not contact the back of your knees.
YOUR RECOMMENDATIONS

The following recommendations are based on your profile:

**Work Habit Considerations**

When Using Your Notebook Computer

- A docking station for your notebook computer can make connecting to an external monitor, mouse, and keyboard quick and easy.
- Whenever possible, you should connect your notebook computer to a full-sized monitor, keyboard, and/or pointing device so that you can adjust the positions of each independently.
- If you feel tension in your shoulders when working in a non-office setting, use hotel or airplane pillows to support your forearms.
- When using your notebook computer, remember to alternate tasks/positions and stretch at least once every hour.
- When working in a non-office setting, adjust your notebook computer height frequently if possible.
- Consider wheeled luggage for transporting your notebook computer.

When Typing or Using a Pointing Device

- To see an example of proper typing technique, click on this link: [http://login.remedyint.com/ergoanswers/typing.html](http://login.remedyint.com/ergoanswers/typing.html)
- To view and perform various stretches, click on the link below. If the link is inactive, copy and paste the URL into your internet browser: [http://login.remedyint.com/ergoanswers/micro_stretch.html](http://login.remedyint.com/ergoanswers/micro_stretch.html)
- Make sure that movement initiates from your larger shoulder and arm muscles, movement in your wrist should be minimal.
- Do your best to not look at the keyboard while typing.
- Concentrate on “floating” your hands over the keyboard, using the larger shoulder and arm muscles when typing and mousing.

**Good Habits**

- Stand up while you talk on the phone.
- Increase circulation by changing your position at least once every hour.
- Alternate computer work with other activities such as filing or phone work.
- Stretch every hour for 1-2 minutes.
- If you experience increased discomfort, take more frequent breaks.
- Rather than phoning or emailing colleagues nearby, walk to their desks to convey messages in person.
Phone Evaluations

- **Advantages**
  - Direct interaction with employee
  - Can ask questions
  - Can direct employee how to set up workstation

- **Disadvantages**
  - Have to rely on employee’s description of workstation
  - Need practice in asking questions and experience with enough in person evaluations to understand challenges and solutions
  - Takes evaluators time
Pre-Established Vendors and Equipment

- **Advantages**
  - Employees and Evaluators know what equipment is available
  - Quick and easy ordering
  - Discount prices

- **Disadvantages**
  - Employees do not select own equipment
  - Mercy of vendor if only choose one
The Best Solution?

- Tiered Approach
  - Online Self Evaluation with Checklist & Training
  - Email triage of requests
  - Phone Evaluation with Pictures and/or Web Camera when needed
- Use pre-established vendors and equipment
Summary / Wrap Up
Summary / Wrap - Up

- Telecommuting is still on the rise and is a huge benefit to companies and employees
- Safety is important in home offices
- Use a Tiered Approach to address ergonomics
  - Online Self Evaluation with Checklist & Training
  - Phone Evaluation with Pictures and/or Web Camera when needed
  - Use pre-established vendors and equipment
Questions?

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