

Question 1



Office Ergonomics

The Basics... and Beyond

Steve Thompson, ARM, COSS  
[www.ergohealthy.com](http://www.ergohealthy.com)

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Question 2

Recap of Recent findings – sedentary lives

- Prolonged standing increases heart disease
- Inactivity disrupts DNA repair mechanisms
- Exercise only slightly lessens the health risks of sitting
- Frequent breaks help stabilize blood sugar levels
- Prolonged sitting may increase diabetes risk in women
- Transition between sitting and standing is beneficial



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Recap - Why office ergonomics

- Sedentary workforce
- Frequently ignored (versus “high hazard” work)
- “Remote work”
- “Explosion” of social networking/communication
- Gaming



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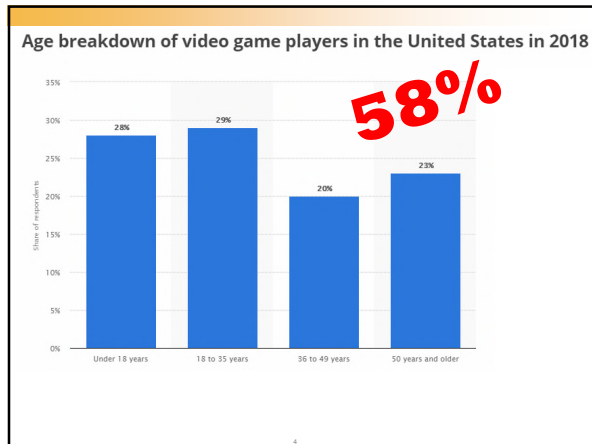
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- In modern times, does engineering and technology reduce ergonomic injury rates**
- Desk vs. Workstation
  - Typewriter vs. PC vs. laptop vs. tablet vs. smart phone
  - Metal chair vs. padded chair vs. expensive ergonomic chair vs. inexpensive ergonomic chair
  - Small ergonomic equipment (document holder, foot rest, other, etc.)
  - Regular rest breaks vs. sit-stand workstations

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**Melding of work, non-work activities**

- With mobile devices... houses, cars, subways, libraries, bars, airports, parks, beach, etc. become workplaces
- Email when on vacation... home ill, or at kid's b-day party?
- 24/7 global economy

*The lines between work and personal time are now permanently blurred*

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## Remote work resources

- Telework Toolkit (free) (<http://teleworktoolkit.com/>)
  - Sample policies
  - Q&A for employers/employees
  - Manager toolkit
  - Training materials
- CalHR Telework Policy (free good samples)  
<http://www.calhr.ca.gov/employees/Pages/telework-policy.aspx>

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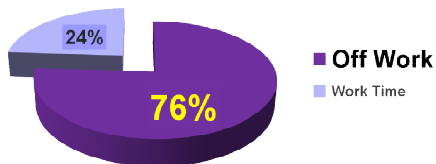
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## How much time do we really spend at work

24 hours/day X 7 days = 168 total hours  
Average work hours = 40  
40 work hours / 168 total hours = 24%



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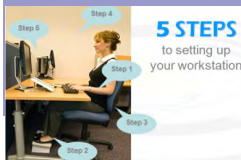
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## Sitting, Sit-Stand, and Standing Work

- Standing workstations and health outcomes
- Sitting requirements (California)
- Myths of standing workstations (versus reality)
- Best approach to workstation ergonomics



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## Health outcomes

- Sitting did not increase mortality risk (16 year study)
- Previous studies may have related to overall health versus associated sitting time
- Sitting burns 80 calories per hour... Standing... 88
- Health benefits from transition



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## Health outcomes – standing work

- 7,300 participants Ontario, Canada over 12 years
- Workers who predominantly stood for work were associated with a 2-fold risk of incident heart disease, compared with predominantly sitting occupations.



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**What  
Do I Do  
Now**



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- Request documentation from health care provider about accommodations to perform job duties, and for how long
- If doctor indicates sit-stand...

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- **ANSI/HFES 100 (standard ergo assessment)**
- **Requirement for physician note is not true accommodation**
- **ADA**
- **Education**



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## Back to basics... and the law in California

- Make sure seated workstations are appropriate
- Assist with chair adjustments... in majority of cases be sure to remove armrests
- Understanding of other workstation adjustments

*All working employees shall be provided with suitable seats when the nature of the work reasonably permits the use of seats.*



### The Basics



#### 5 STEPS to setting up your workstation



Start with your seat

- Knee height
- Lumbar support
- Depth of seat



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## Transition to standing/moving opportunities



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## Sit-stand or standing desk – the exceptions

- Some rare medical conditions
- Pain (related to medical condition) where sitting may increase pain
- Inability to change postures

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**Which working posture are you in right now?**

Question 4

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**Sit-stand**



Question 5



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**Sit-stand study**

**Health effects of sit-stand desks, interventions aimed to reduce sitting at work are still unproven**  
<https://www.sciencedaily.com/releases/2016/03/160316215136.htm>

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## Sitting workstation guidance

Sitting to do computer work...

- About every 20-30 minutes take a posture break and stand and move for a couple of minutes.
- Simply standing is insufficient. Movement is important to get blood circulation through the muscles.

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## Sit-stand guidance (Cornell University)

Based on current data 30 minutes...

- 20 minutes sitting (in a good posture)
- 8 minutes standing (for sit-stand workstations)
- 2 minutes of standing and moving
- For a 7.5 hours workday (lunch is excluded) this means a daily regimen with a total of 5 hours of sitting, 16 sit-to-stand changes, 2 hours of standing and .5 hours of moving.



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## Standing or Sit/Stand... should you give?

- Engagement
- "Feel goo"
- Most individuals... 3 months



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## Sit, Standing or Sit/Stand... Summary

- Furniture versus ergonomics
- Good seating and workstation
- Postural education



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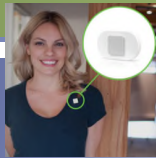
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## Apps for Health

- Posture
  - Lumo Lift (shoulder sensor)
  - UpRight (lower back)
  - MacBreakZ (stretching and breaks)
  - Posture Man Pat (webcam app for posture)



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## Getting Practical



Don't Let Your Tablet or Phone Ruin Your Sleep

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## Practical tools and tips for health

- Shut down one hour before bed
- Dim your tablet or phone or use a filter
- Distance from face
- Alternatives (books, magazine, newspaper)
- Turn off alerts
- Filter content
- Zencast, Headspace, Buddhify



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## Apps for Health

- Anti-sedentary... getting up and move
  - *Big Stretch* Reminder (breaks and reminders)
  - *Move* (stretches and exercises)
  - *Workrave* (breaks and exercises)
  - *Break Time* (alerts for breaks)



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## Apps for Health

- Eyes
  - Orange-tinted glasses (acts as filter for blue light)
  - *Flux* (auto adjust of monitor tint and brightness)
  - *Awareness* (break reminder with singing bowl)
  - *EVO* (breaks and screen blackout)
  - *Eyelo* (eye exercises)



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## The Basics

### Start with your seat

- Knee height
- Lumbar support
- Depth of seat



### 5 STEPS to setting up your workstation




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## Remember this... Smart Phone & Tablet Ergonomics




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## Texting Health

- Limit activities that may cause neck problems
- When possible, bring your tablet, books, and smartphones up to eye level during use
- Integrate stretching of your neck muscles regularly
- Sit with correct posture. Take regular breaks from prolonged sitting.

- 25 pounds = an average 2 year old
- 33 pounds = a cinder block
- 36 pounds = a mid-size microwave
- 40 pounds = a 5-gallon bottle of water
- 50 pounds = a small bale of hay
- 55 pounds = a 5000 BTU air conditioner

Effective weight on the spine as forward tilt increases

0°	15°	30°	45°	60°
12lb	27lb	40lb	49lb	60lb



GUARDIAN GRAPHICS

SOURCE: SURGICAL TECHNOLOGY INTERNATIONAL

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## Individual Injury Factors

- Gender - some studies have found a higher prevalence of some musculoskeletal disorders in women
- Cigarette Smoking - some studies have found smoking related to pain in the extremities, including the neck and back
- Strength - the risk for musculoskeletal injuries (in some studies) was three times greater in weaker subjects
- Anthropometry - weight, height, body mass index, and obesity have all been identified as indicators for certain musculoskeletal disorders
- Physical Activity - a lack (or over exertion) of physical activity may increase susceptibility to injury (sedentary lifestyles?)



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## Today's summary

- A ton of good reasons to live an anti-sedentary life
- Proliferation of social media, gaming, and other sedentary activities. Shouldn't technology be our friend?
- We only spend 24% of a given week at work
- Sit-stand workstations are not yet proven to enhance health in general
- There are a number of apps and tools available for ergonomic health

Question 6

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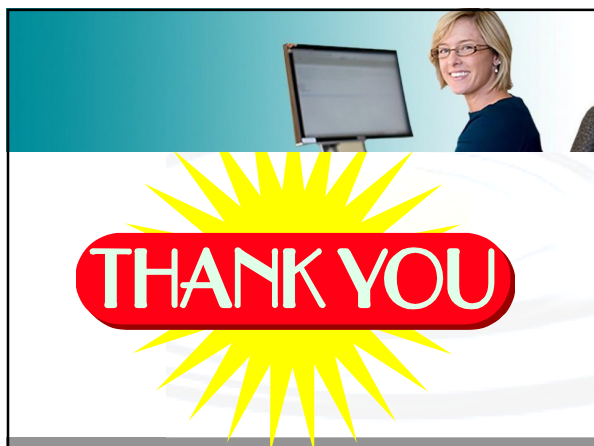
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