

Smart Health Training & Services

**Is Sitting at a Desk the Single
Largest Health Issue in Your
Workplace?**



SISA General Meeting August 2013

Introduction

- Most of us look at sitting as safe and restful thing to do.

But...

- It's not just that we sit, it's HOW we sit and for HOW LONG.

Introduction

HOW?

- No-one likes being told how to sit
 - How many of us will confess to slouching?
 - Why do we sit badly?
 - Why is it so hard to change?
- The relationship between how we sit and how it affects us physically.

Introduction

HOW Long?

- Simple sample day from Wake up to Back to Bed.
 - Breakfast
 - Commute to work/school
 - At work
 - Lunch
 - Commute home
 - Dinner
 - Evening TV, Facebook, Catch up on work....

Sitting time survey.

Section of day	Activity	Time (hours)
Before work	Breakfast	.5
	Commuting	2
	Other	
At Work	Desk time	3
	Meetings	
	Lunch	.5
	Other	
After work	Commuting	1.5
	Dinner	.5
	Computer time	2.5
	Television	1.5
	Reading	
	Meetings	
	Spectating (children's sport/professional sport)	
	Other	
	TOTAL	12

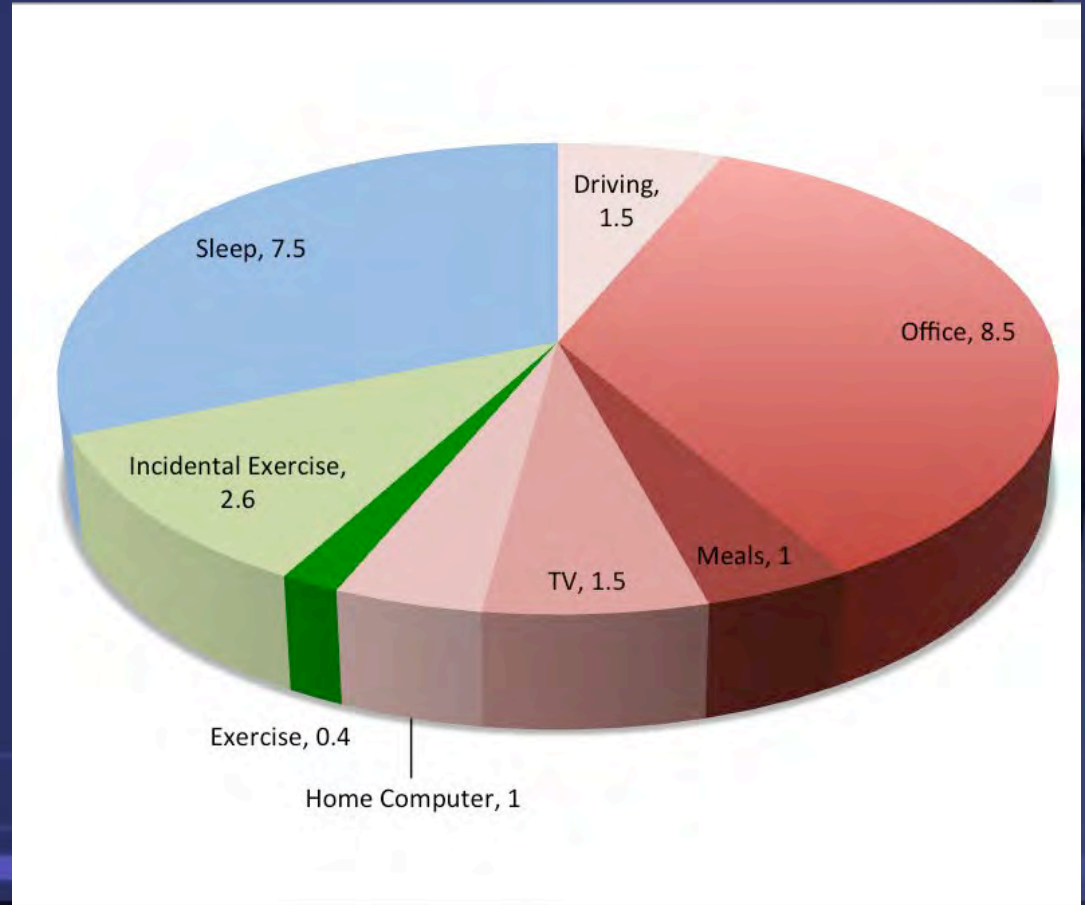
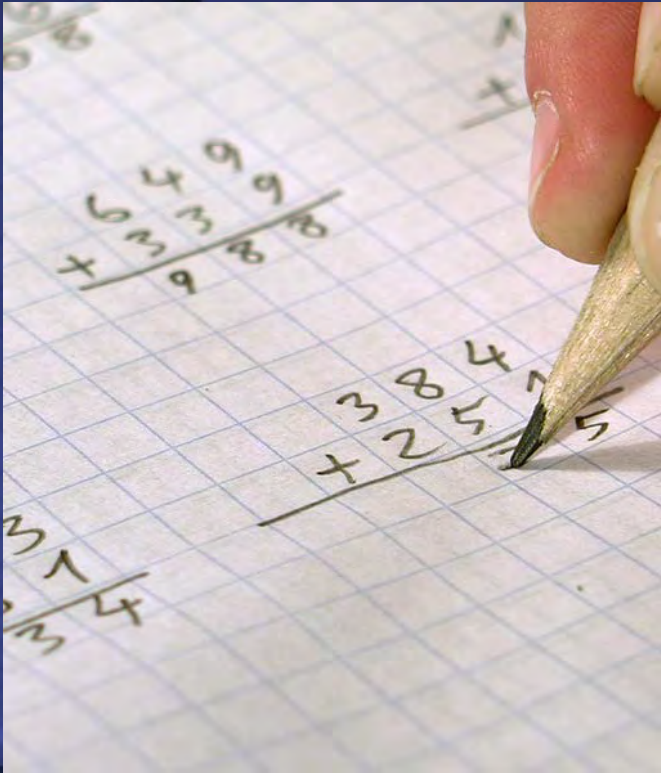
How Big is The Problem?



How Big is The Problem?

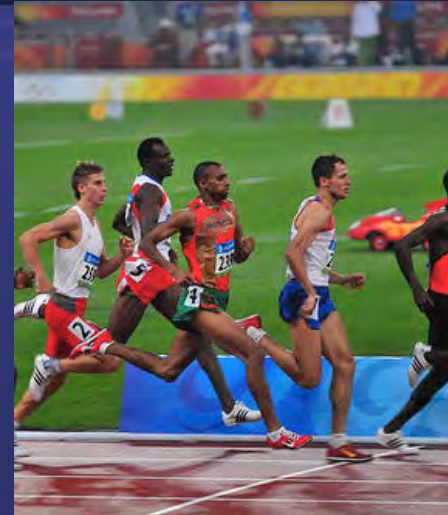
- Australian Health Survey 2011-12
 - Released this week
 - 5.1% of Australian Adults have Diabetes
 - Roughly one-fifth aren't aware of diagnosis
 - 6.2% of Australia Adults have long-term heart, stroke or vascular disease
 - 63.2% of Australian Adults have dyslipidemia
 - Take cholesterol medication
 - Have high cholesterol or cholesterol imbalance
 - 62.8% of Australian Adults are overweight or obese

How Much Do We Sit?



What Happens When We Sit

- Inactivity Physiology
 - Reduced Calorie Expenditure
 - 1.36 cal/min standing desk
 - 1.02 cal/min sitting desk
 - 18 cal/hour difference
 - 8 hour day = 144 calories
 - Over 2 months = 1kg of fat
 - Every day = 2km running or 3km of walking



What Happens When We Sit

- Inactivity Physiology
 - Metabolic Health with Prolonged Sitting
 - Sitting for 2 straight hours following a standardised meal increased the glycemic response by >45% compared with 40 minutes walking and 80 minutes sitting



What Happens When We Sit

- Inactivity Physiology
 - Reduced Respiratory Function
 - Breathing Slower, Deeper and More Effective in Standing



Overall Health Effects

- Diabetologica 2012, 2013
 - Meta-Analysis of 18 Studies
 - Almost 800,000 Participants
 - Sedentary Behaviours
 - Health Effects
 - In adults at risk of type 2 diabetes, time spent sedentary is strongly and adversely related to cardiometabolic health and may be a more important indicator of poor health than moderate-to-vigorous physical exercise
- 112% Increase in Diabetes
- 147% Increase in Cardiovascular Events
- 90% Increase in Cardiovascular Mortality
- 49% Increase in All-Cause Mortality

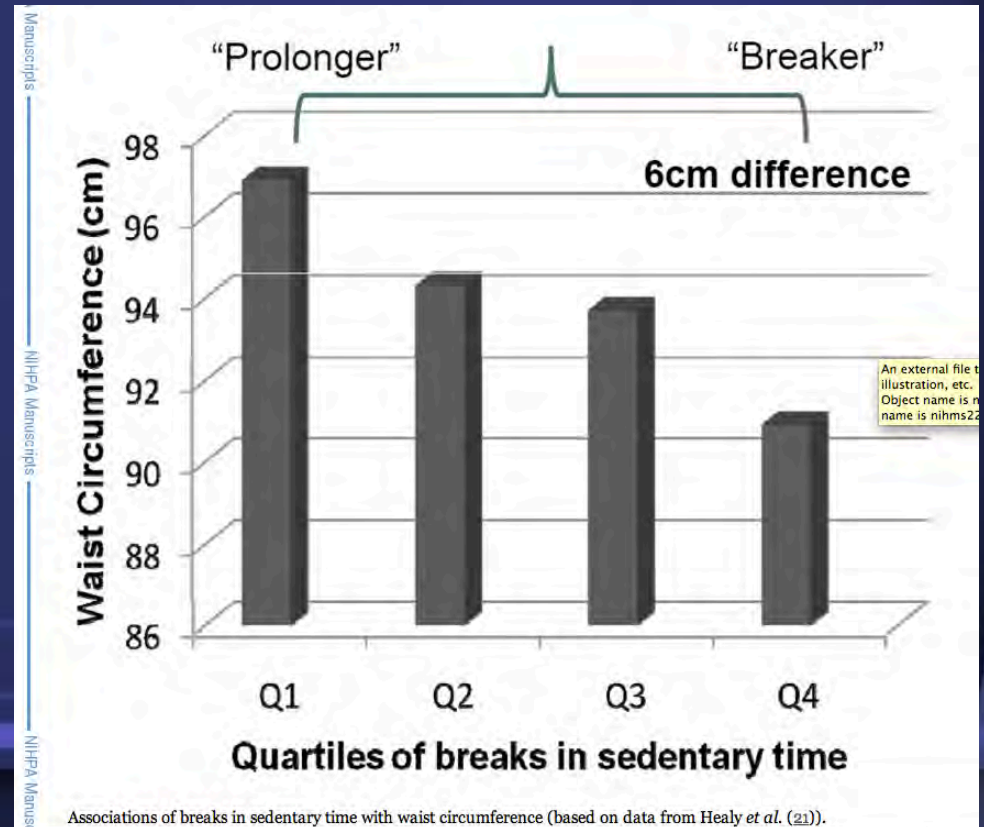
General Health

- Sitting greater than four hours per day
 - Significant increase in cancer, diabetes, heart disease
- “The longer you spend sitting each day, the more likely you are to die an early death, no matter how fit you are”



General Health

- Increased Breaks from Sedentary Time
 - Decreased Waist Circumference
 - Decreased BMI



General Health

- Increased Sedentary Time
 - Children Aged 9-15
 - Increased BMI
- Increased Screen Time
 - Boys aged 11-13
 - Reduced Cardiorespiratory Fitness
 - Less Shuttle Runs



Exercise

- There is new evidence that too much sitting...is adversely associated with health outcomes, including cardio-metabolic risk biomarkers, type 2 diabetes and premature mortality. Importantly, these detrimental associations remain even after accounting for time spent in leisure time physical activity
- ...recent evidence from epidemiological and experimental studies that makes a persuasive case that too much sitting should now be considered an important stand-alone component of the physical activity and health equation, particularly in relation to diabetes and cardiovascular risk.



So What Happens...

- When this guy, who has worked for you for 20 years in an office:
 - Is diagnosed with diabetes,
 - Brings you all of this evidence linking his work behaviour with his diabetes,
 - And implies that work has contributed to his disease, and should therefore contribute to the cost of management...



Musculoskeletal Health

- Clinical Evidence
- What We See Every Day
 - Direct Link with Screen Time
 - Headaches
 - Back Pain
 - Neck Pain
 - Younger Patients
 - Worse Postures
 - Slumped
 - Hypotonic



Musculoskeletal Health

- 4 hours Laptop/Notebook Use
 - Confirmed as risk factor for reported symptoms
 - “Without intervention, these students are likely to enter the workforce with poor computing habits”



Musculoskeletal Health

- Classroom postures of 8-12 year-olds
 - Children sat 85% of the time
 - 28% of sitting was slumped
 - Increased slumping was associated with increased reported discomfort



Musculoskeletal Health

- Instituting Adjustable-Height Furniture
 - Improved Sitting Postures
 - Increased Trunk Muscle Strength
 - Decreased Postural Muscle Tension
 - Reduced Reported Pain
 - Improved Productivity



Musculoskeletal Health

- Institution of External Keyboard with Notebook
 - Reduced Neck and Shoulder Pain
 - Reduced Headache with External Mouse
 - Ergonomics Training and the use of external devices may have significant health benefits



Musculoskeletal Health

- Institution of Office-Based Sit-Stand Workstations
 - Sitting time reduced by 224%
 - Reported Upper Back & Neck Pain reduced by 54%
 - Improved Mood States



BASICS: Workstation Set-Up



Neutral Spinal Position



Minimum stress through spine



No twist



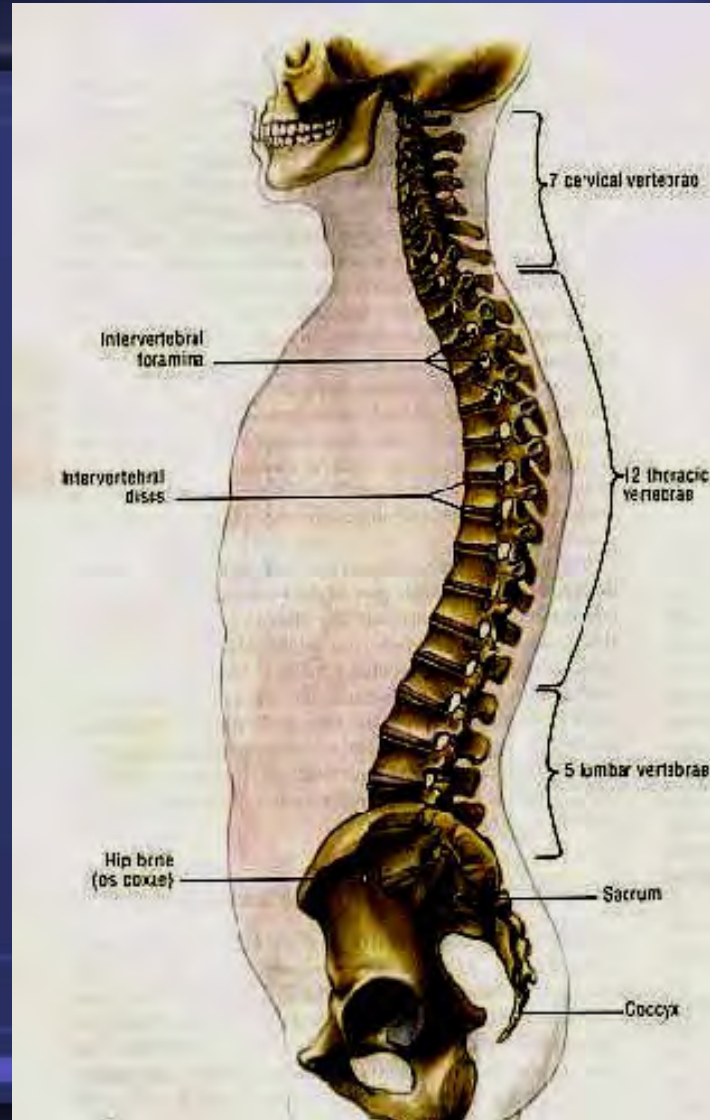
No side-bend



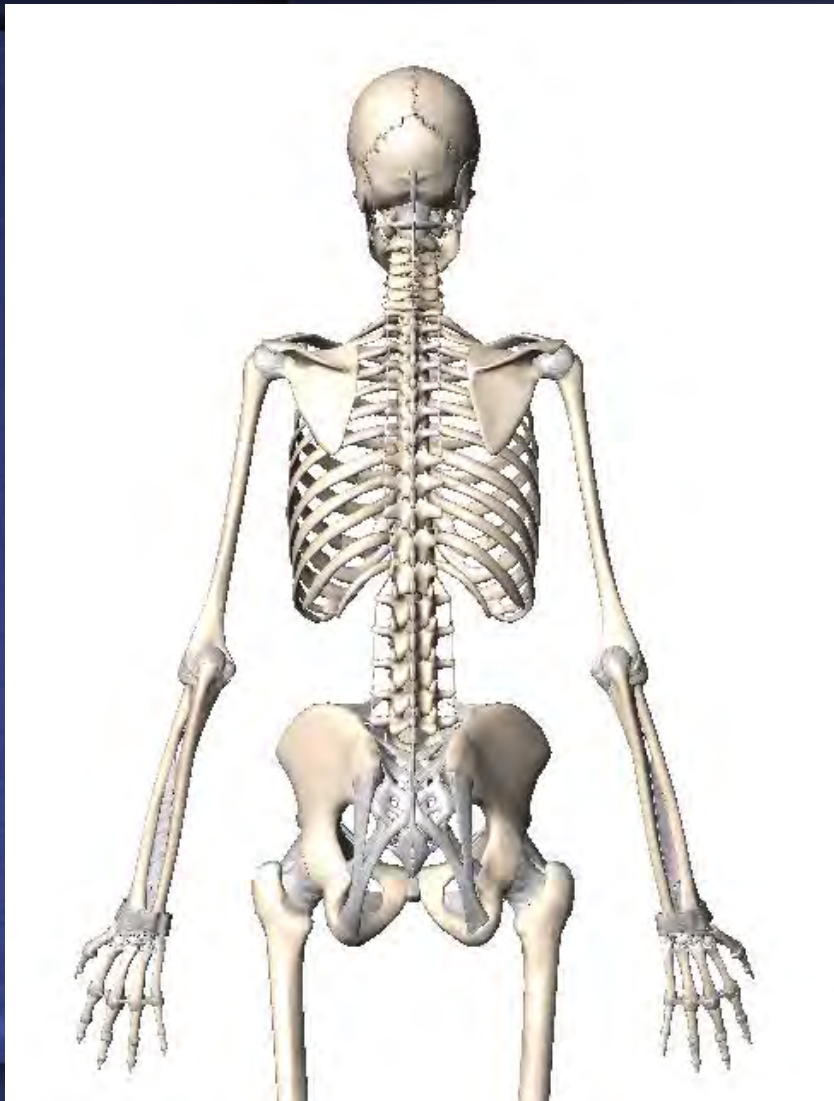
Gentle curves from the side allow shock absorption



All under muscular control



Neutral Spinal Position

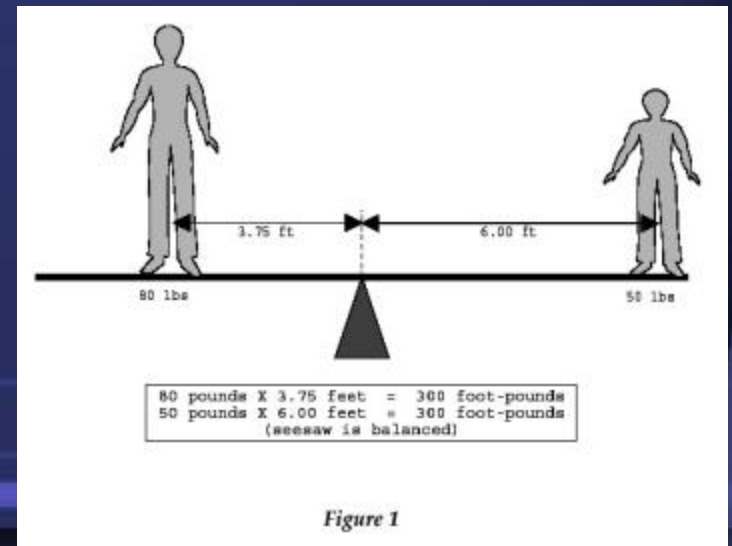
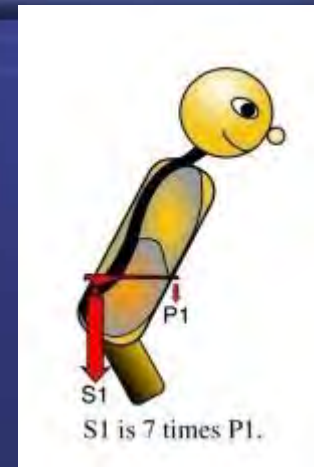


Centre of Gravity

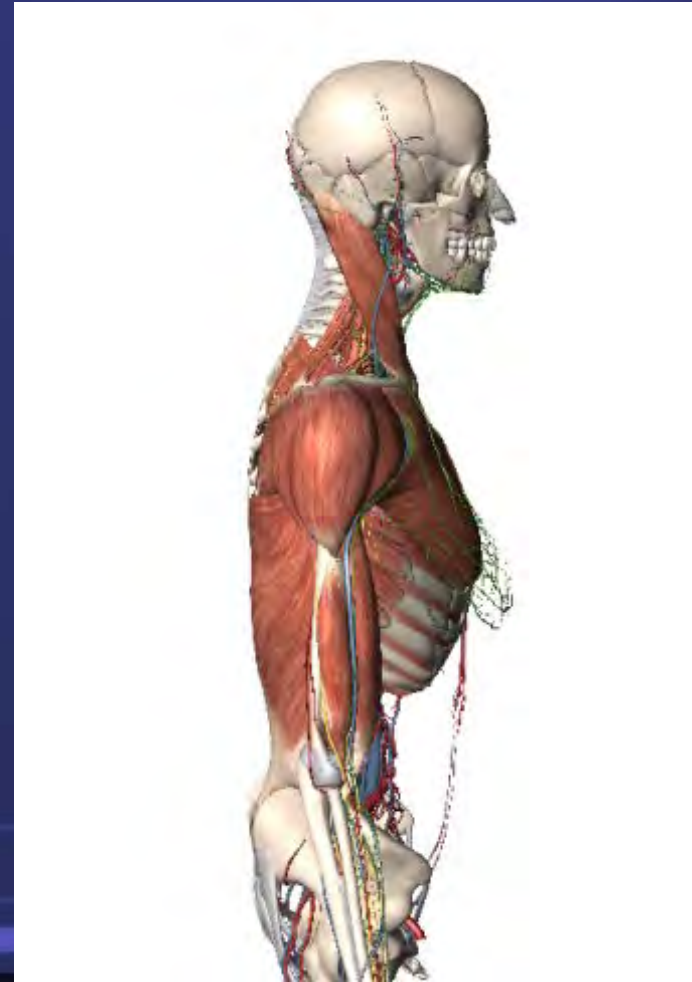
Longer Levers cause Higher Force:

- Compression at Fulcrum (Spine)
- Lifting force by Muscles

Lifting close to body decreases forces



Anatomy



Strategies for Change

Personal Strategies

- Reduce the amount of time we sit
 - Stand more at home – Breakfast, phone calls
 - Drive less and walk more?
 - Sit stand workstations – Home made options
 - Regular standing breaks – relate to activities (i.e.) phone calls, read emails, thinking time, meetings.....
 - Exercise and Massage as preventative maintenance

Strategies for Change

- Improve the way we sit
 - Ensure our workstation is ergonomically set up
 - Become more aware of how we sit
 - Shift focus from lumbar support to shoulder blade contact
 - Create cues within our work tasks to check posture
 - Encourage work colleagues and friends to remind you
 - Introduce sit-stand workstations to your workplace
 - Engage in exercises that improve postural endurance and control rather than “Muscle Strength”

Strategies for Change

- Encourage our Children to sit well and to reduce the time they sit



Strategies for Change

Corporate Strategies

- Education
 - Increase awareness leads to self motivated change
- Ergonomic reviews
 - Ensure workstations are set up to encourage effective posture
 - Provide activities and exercises that can be done during work hours and associated to work tasks

Strategies for change

Administration 'Stretch Guide' ...

Back Arch

Start by standing with your feet at least shoulder width apart and your knees slightly bent.

Place your hands in the small of your back and gently arch backwards as far as you feel comfortable. This should be a comfortable stretch and should not cause any pain.

An ideal exercise to do when you are waiting for the Photocopier or for the printer.



Administration 'Stretch Guide' ...

Chest Stretch

An ideal exercise to do while waiting for the Photocopier or Printer.

Take hold of a solid partition or doorframe, at between hip and shoulder height. With your palm facing forward, slowly turn your body away from what you are holding, until you feel a gentle stretch across the front of your chest and shoulder.

Hold for 10 seconds and repeat twice on each side.



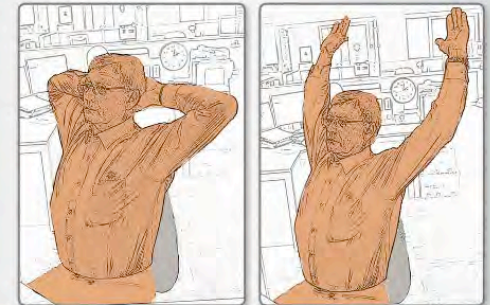
Administration 'Stretch Guide' ...

Upper Back Stretch

Seated desk, stretch back over the backrest of your chair as far as you feel comfortable.

To add a stretch for your chest, place your hands behind your head or reach back and up towards the ceiling as shown in the picture.

Hold for 10 to 20 seconds.



Strategies for Change

Corporate Strategies

- Offer alternatives to traditional sitting work stations
 - Adjustable sit stand desks
 - Hot desks with standing alternative
- Encourage walking and activities within your workplace



Sit-Stand Workstations

- Non-Negotiables
 - Adjustable-Height Screen (at eye height)
 - Adjustable-Height Keyboard & Mouse (at elbow height)
 - Gradual Introduction
 - Suitable Footwear
 - Education & Training
- Preferences
 - Touch Typing
 - Ability to Easily Alternate Sit/Stand



Ergonomic Aids

- External Keyboard and Mouse (for laptop or tablet)
- Laptop Stand, External Screen or Docking Station
- Basic. Three-Lever Office Chair
- Tablet Stands
- Document Holders



Home Offices

- Different Expectations
 - Kitchen Chair or Couch
 - Dining Table or Lap
 - Laptop or Tablet
- If Employees Are Working From Home:
 - Similar Ergonomics to Work



Is This The Future?

