

Keeping the Human in Human Factors and Ergonomics

Brought to You by:

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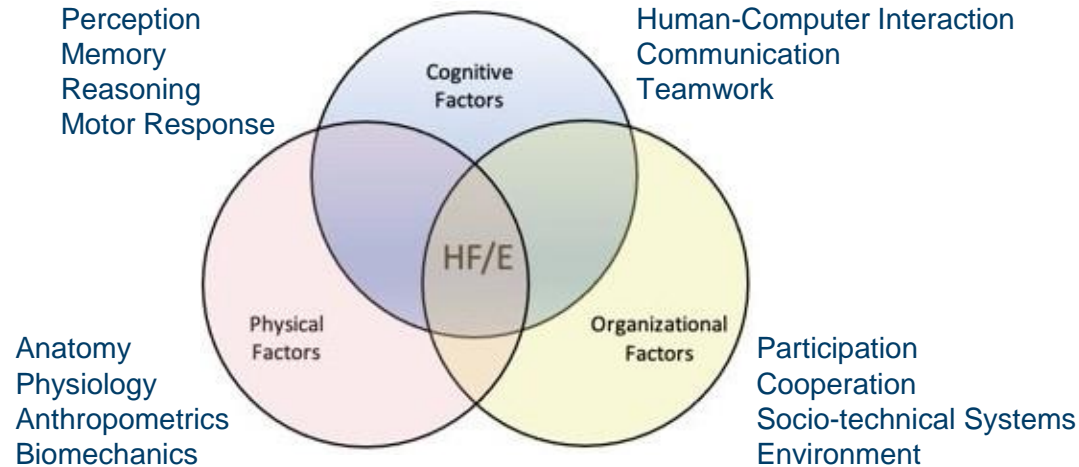


Canadian Mental
Health Association



What is Human Factors / Ergonomics?

The science of work:
from the Greek *ergon* (work) and *nomos* (laws).



Fits the job to you,
rather than fitting you to the job.

Musculoskeletal Injury (MSI)

An injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue.

Includes sprain, strain and inflammation, with symptoms such as:

- Pain/tenderness
- Numbness
- Tingling
- Weakness
- Disturbed sleep

**Tired employees have almost
double the risk
of work-related accidents.**



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MSI Claims in NB in 2022

~37% of all Lost-Time Claims

By Industry:

- 25% Health Care & Social Assistance
- 19% Manufacturing
- 16% Retail Trade

By Body Part:

- 38% Back
- 17% Shoulder
- 8% Multiple Body Parts

Primary MSI Risk Factors

Awkward Postures

Forceful Exertions

Repetition

Sustained Static Exertions

Posture



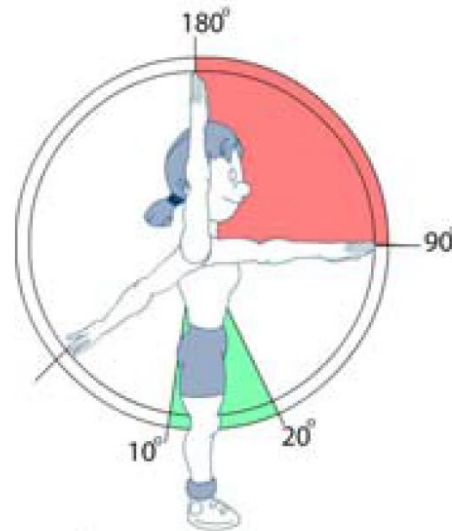
Neutral wrist posture



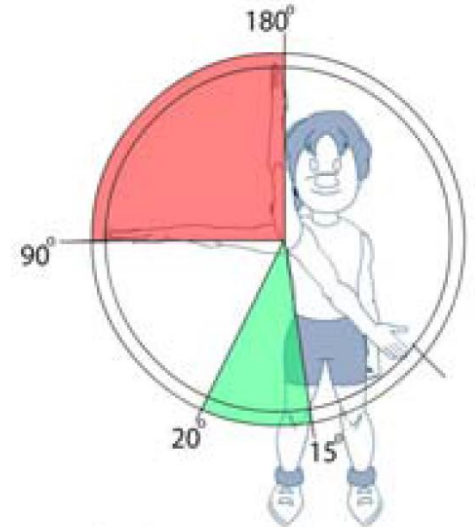
Awkward wrist posture



Correct wrist posture



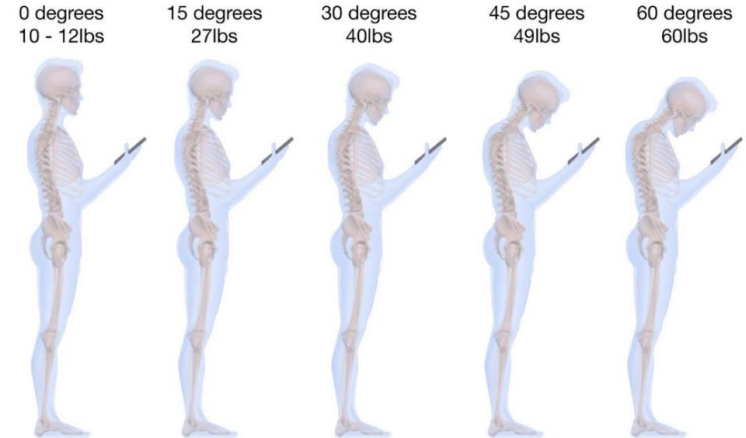
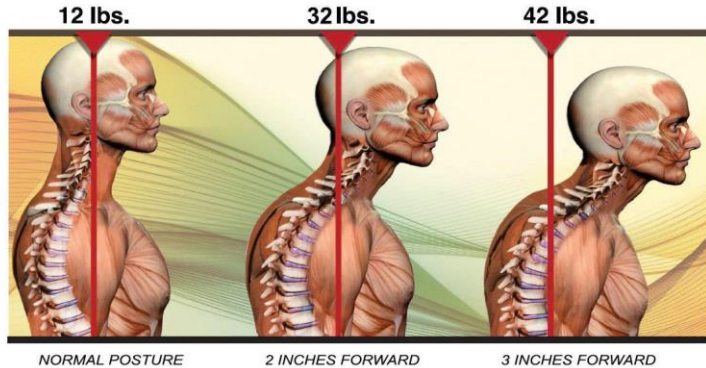
Flexion and Extension



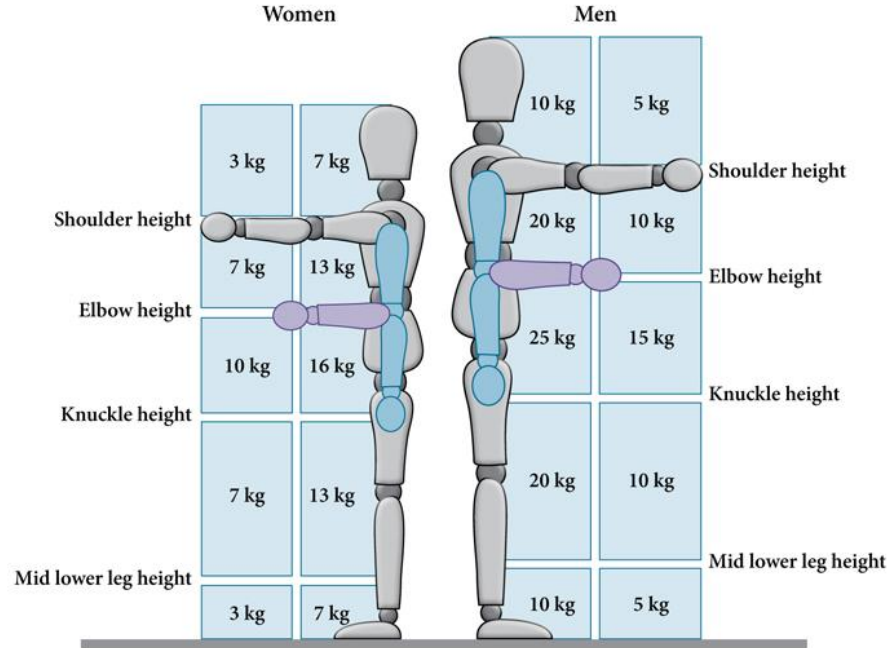
Abduction and Adduction

Neck Posture







How Heavy is Your Head?



Forceful Exertion (“Power Zone”)



Sustained Static Exertion

Resting		Dynamic Effort		Static Effort	
					
Blood Needed	Blood Flow	Blood Needed	Blood Flow	Blood Needed	Blood Flow

Secondary MSI Risk Factors

Individual Characteristics

- Previous injury, age, physical condition

Work Organization

- Work schedule, job rotation, piece work

Environmental Conditions

- Temperature, humidity

Psychosocial Risk Factors

Factors that affect workers' psychological responses to their work and workplace conditions.

- High workloads, tight deadlines
- Lack of control of the work and working methods
- Working relationships with supervisors and colleagues
- COVID
- **Information Overload – never-ending notifications!**

Common responses:

stress, low mood, low motivation, anxiety & depression

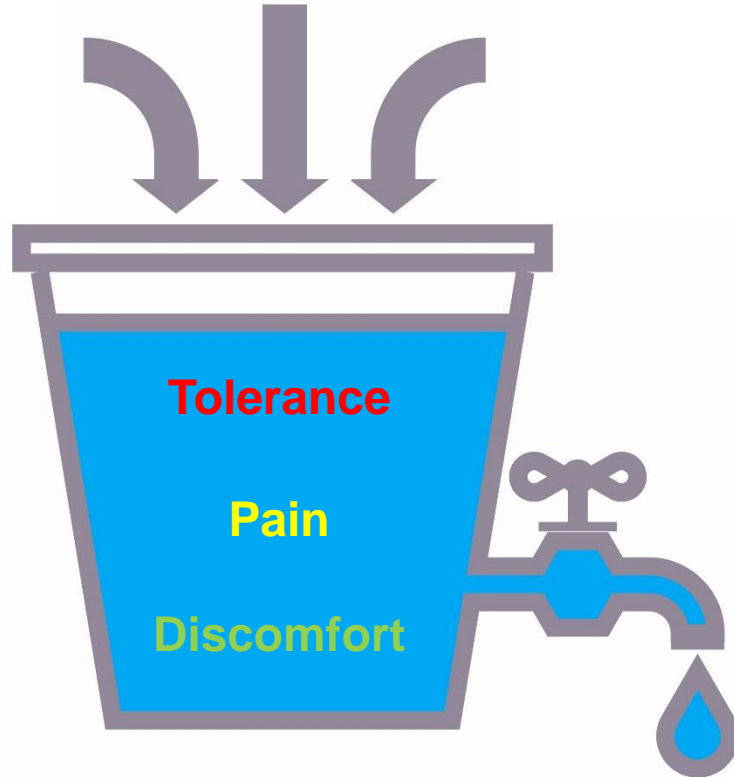
Psychosocial Risk Factors & MSI

Stress creates a variety of behavioral, psychological and physiological responses which can facilitate the development of MSIs:

- ↑ muscle tension & BP (↑ force output, ↑ joint pressure)
- ↓ pain sensitivity (work beyond normal capacity)
- Pupil dilation (↑ sensitivity to light)

Hazards / Stresses

Posture, Force, Repetition,
Pre-Existing Conditions,
Psychosocial Issues,
Sports, Hobbies, Second Jobs



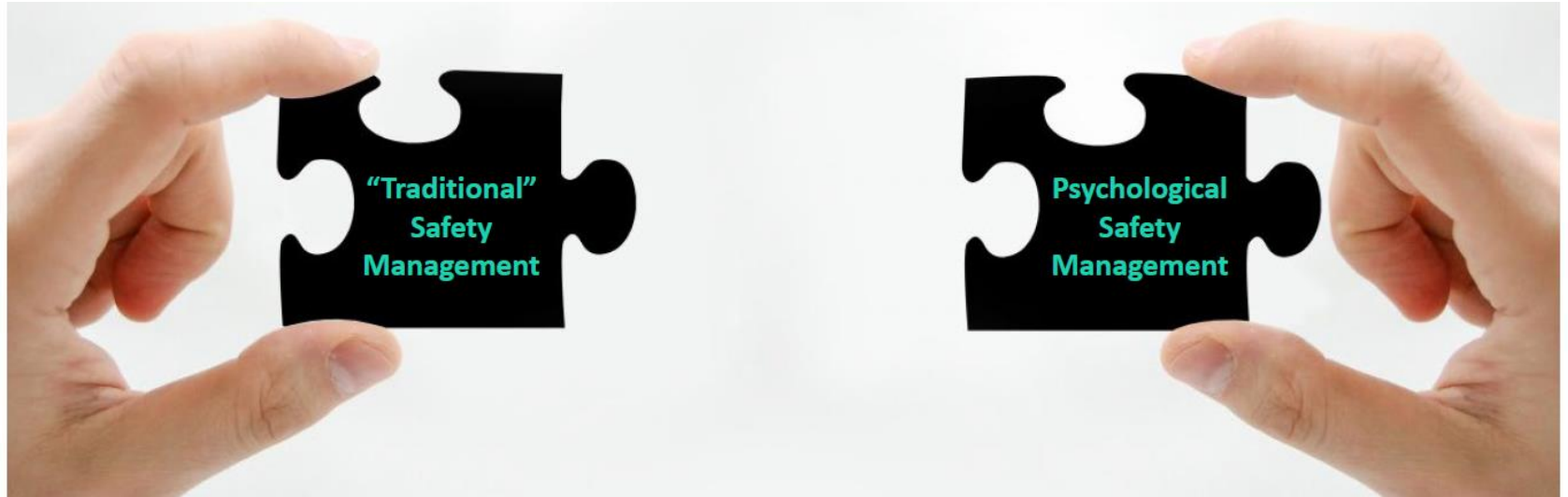
Remember:

- Everyone's bucket is a different size.
- It's not the size of the bucket that matters, but it's contents.
- A new day rarely starts with an empty bucket.
- Self-care vs After-care

Coping Mechanisms

Breaks, Vacation, Sleep,
Physical Activity

Putting The Pieces Together



Controls

Elimination

Physically remove the hazard

Substitution

Replace the hazard

Engineering Controls

Isolate people from the hazard

Administrative Controls

Change the way people work

PPE

Protect the worker with Personal Protective Equipment

Needs

Self-actualization:
achieving one's full potential, including creative activities

Self-fulfillment needs

Esteem needs:
prestige and feeling of accomplishment

Psychological needs

Belongingness and love needs:
intimate relationships, friends

Safety needs:
security, safety

Basic needs

Physiological needs:
food, water, warmth, rest



Atlantic Region
Région Atlantique
Association of Canadian Ergonomists
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Being safe & feeling safe.



Rest & Recovery Are Key

The value of a recovery period rises in proportion to the amount of work required of us.

Rest and recovery are not the same thing.
Stopping does not equal recovering.

Our brains need rest & recovery as much as our bodies do.

Give yourself and your people the resources to create internal and external recovery periods.

I told my friend that I'm emotionally "hitting a wall" and she said "Sometimes walls are there so we can lean on them and rest."
I can't even begin to express how much I really needed to hear that.

This is Your Brain in Meetings

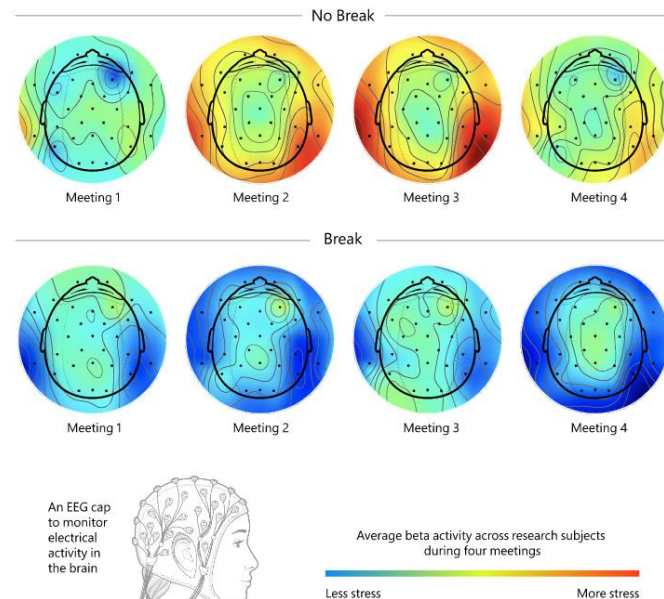
Your brain works differently when you take breaks.

Taking time out between video calls prevents stress from building up.

The antidote to meeting fatigue is simple: taking short breaks.



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What About Resilience?

Resilience is about how we recharge, not how we endure.

We try to remove physical hazards,
but learn to tolerate psychosocial ones.

Burnout is a workplace problem, not an employee problem.



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Research has found that there is a
direct correlation between lack of
recovery and increased incidence of
health and safety problems.



Want to Build Resilience?

Start by strategically stopping.

Give yourself and your people the resources to create internal and external recovery periods.

Fix the problem, don't just learn to cope with it.

Remember your bucket!

The 2022 Work Trend Index *Making Hybrid Work “Work”*

31,000 people, 31 countries, trillions of data points

Main Findings:

- 1) Employees have a new “worth it” equation (53%).
- 2) Managers feel wedged between leadership and employee expectations (74%).
- 3) Leaders need to make the office worth the commute (38%).
- 4) Flexible work doesn’t have to mean “always on” (252%).
- 5) Building & maintaining relationships looks different in a hybrid world (43%).



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People First!



Take Home Messages

- Prioritize your mental & physical health.
 - Energy management, not time management.
 - ROWE method
 - Our brains need rest & recovery as much as our bodies do.
- Whether a physical hazard or a psychological one, remember to address it, not just deal with it.
 - Can you remove the hazard?
- Move & take breaks - the best posture is the next posture!
 - Don't forget about physical activity/exercise.
- Posture and healthy habits are facilitated by the equipment.
 - When it comes to desks, the height is important.



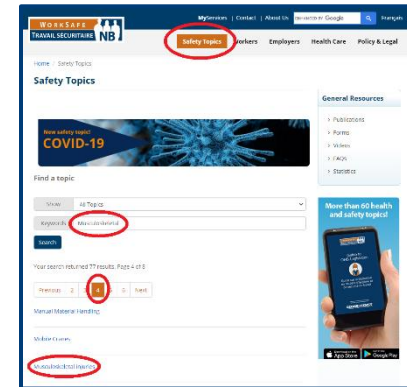
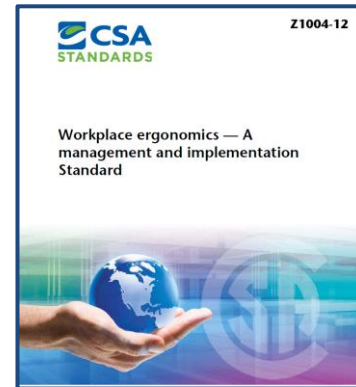
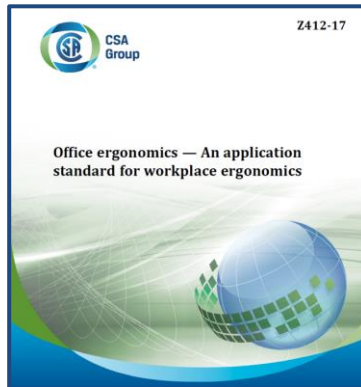
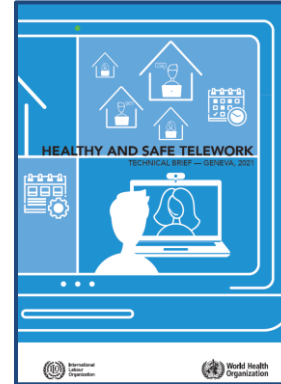
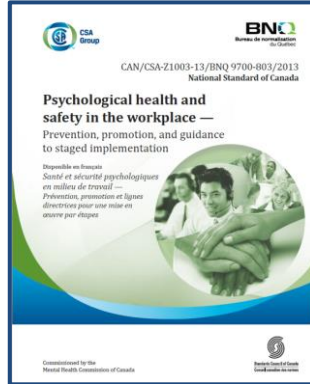
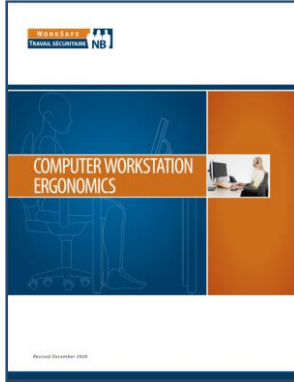
**Don't Let Working
from Home Become
Living at the Office!**



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Resources



Français

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About ▾

How to Use

Resources

FAQs

Assess and address psychological
health and safety in your workplace



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<https://www.guardingmindsatwork.ca/>

WORKSAFE
TRAVAIL SÉCURITAIRE



Points to Remember

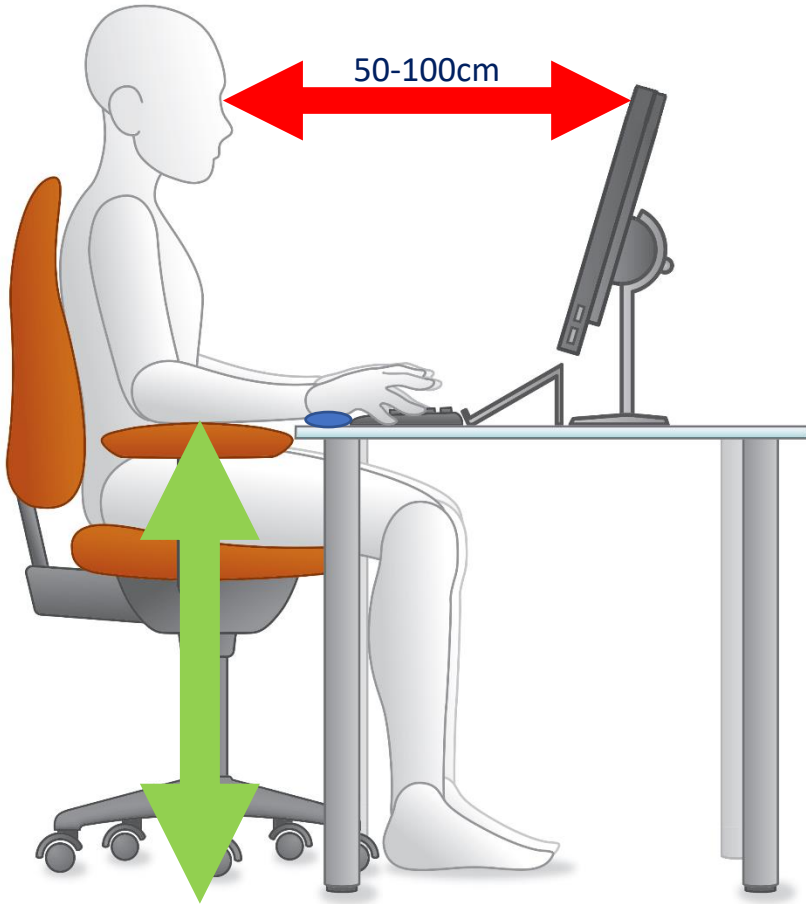
Desk

- Size/shape for your space & equipment
- Height
 - Keyboard & mouse at elbow height (green arrow)
- Footrest?
 - Not ideal solution, space restriction/cumbersome
- Depth (~30" recommended)
- Keyboard Tray?
 - Width must fit KB & mouse
- Standing?
 - Same elbow height measurement while standing, elbow at 90°
 - Must use footrest (one foot, alternate)
- Low enough, high enough?
 - Check lowest & highest settings
 - Make sure elbow heights are accommodated

Monitor

- Top of screen aligned with eyes (red arrow)
 - Lower if wearing bifocals
- 50-100cm away ([CSA Z412](#))

Palm Rest (not wrist rest!)



Thanks for Participating –

Now Get Up & Move Around,
You're Overdue for a Break!

Questions?

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Don't forget to
breathe.