

No-Lost-Time

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Office Ergonomics School

Preventing Work Pain

Neck – Arm – Low Back

The AGING Worker

Put away phones !!

Musculo-Skeletal Disorders

- ***M.S.D.***
- ***Back Pain***
- ***Neck Pain***
- ***Tendinitis***
- ***Rotator Cuff***
- ***Tennis Elbow***
- ***Carpal Tunnel Syndrome***

- ***AGING***
 - ***Degen. Arthritis ... DJD ... DDD***

M\$D Costs

- ***\$80 billion/yr***
- ***\$1 million per 500 employees***
- ***55% of Comp claims***
- ***65% of Comp costs***
- ***Back Pain costs more than cancer !***
- ***Your competition***

What it costs you!

- ***PAIN***
- ***Work tolerance***
- ***Activities of daily living.. LIFE***
- ***Your ability to earn a living***
- ***Life after work !***
- ***Enjoy retirement***

AGING (early!)

- *ELASTICITY... WATER*
- *Loss of water ... loss of elasticity*
- *Wear damage ... heals with scar fibers*
- *Scar fibers weak & stiff*
- *More damage*
- *This is reversible !!*



*computer...
office pain*

*is a
POSTURE
disorder*

*Prolonged posture – limited task variety
repetitive motion – worker health-fitness – stress*

The Issues

- *Ergonomics (workstation)*
- *Posture habits*
- *Fitness-For-Work*
- *Worker Health*
- *early AGING changes*

Be an EXPERT

- ***How it is put together mechanically***
- ***How it works mechanically***
- ***How it breaks down mechanically***

Musculo-Skeletal WORK

Movement
Posture

Muscles contract

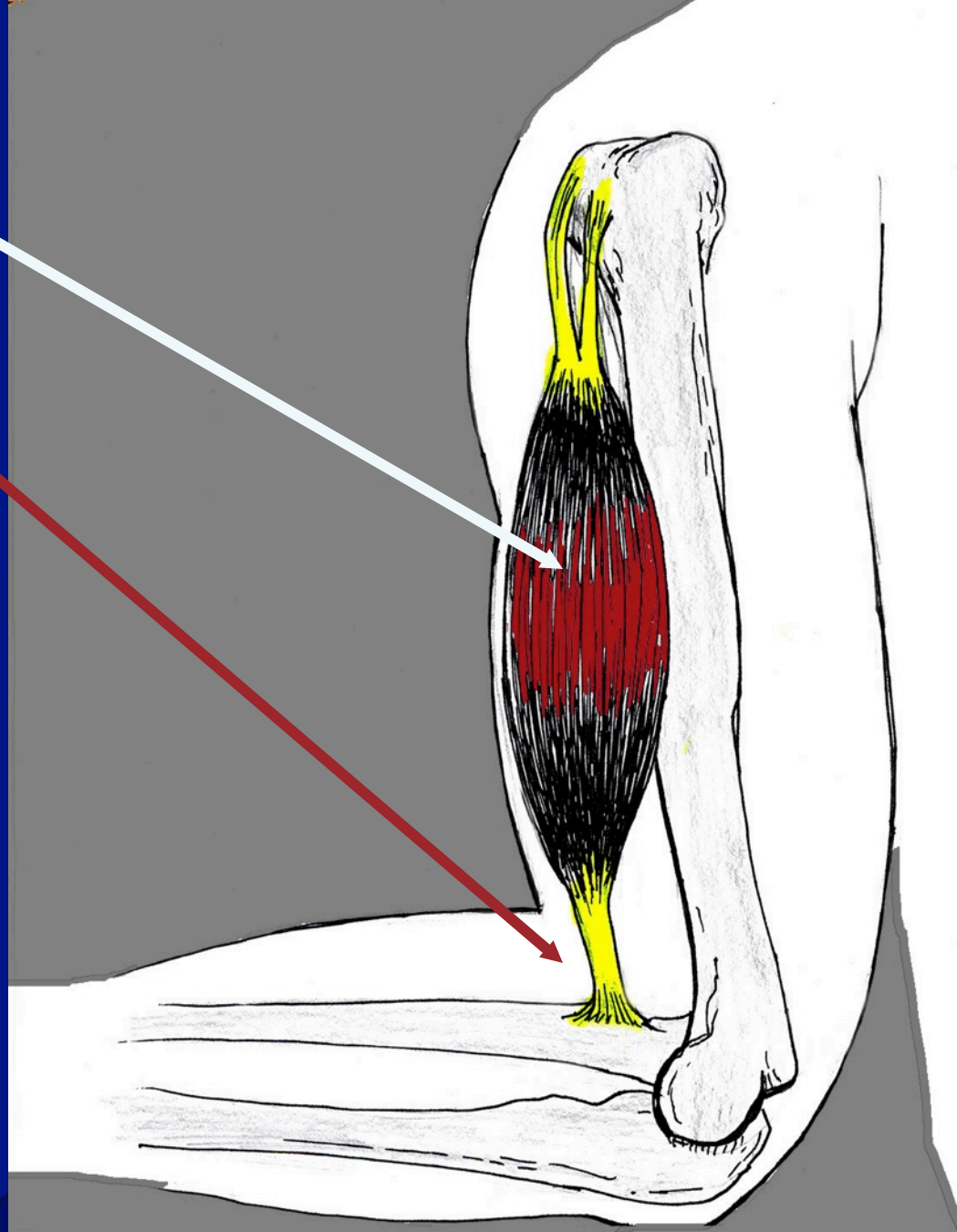
pulling on **tendons**

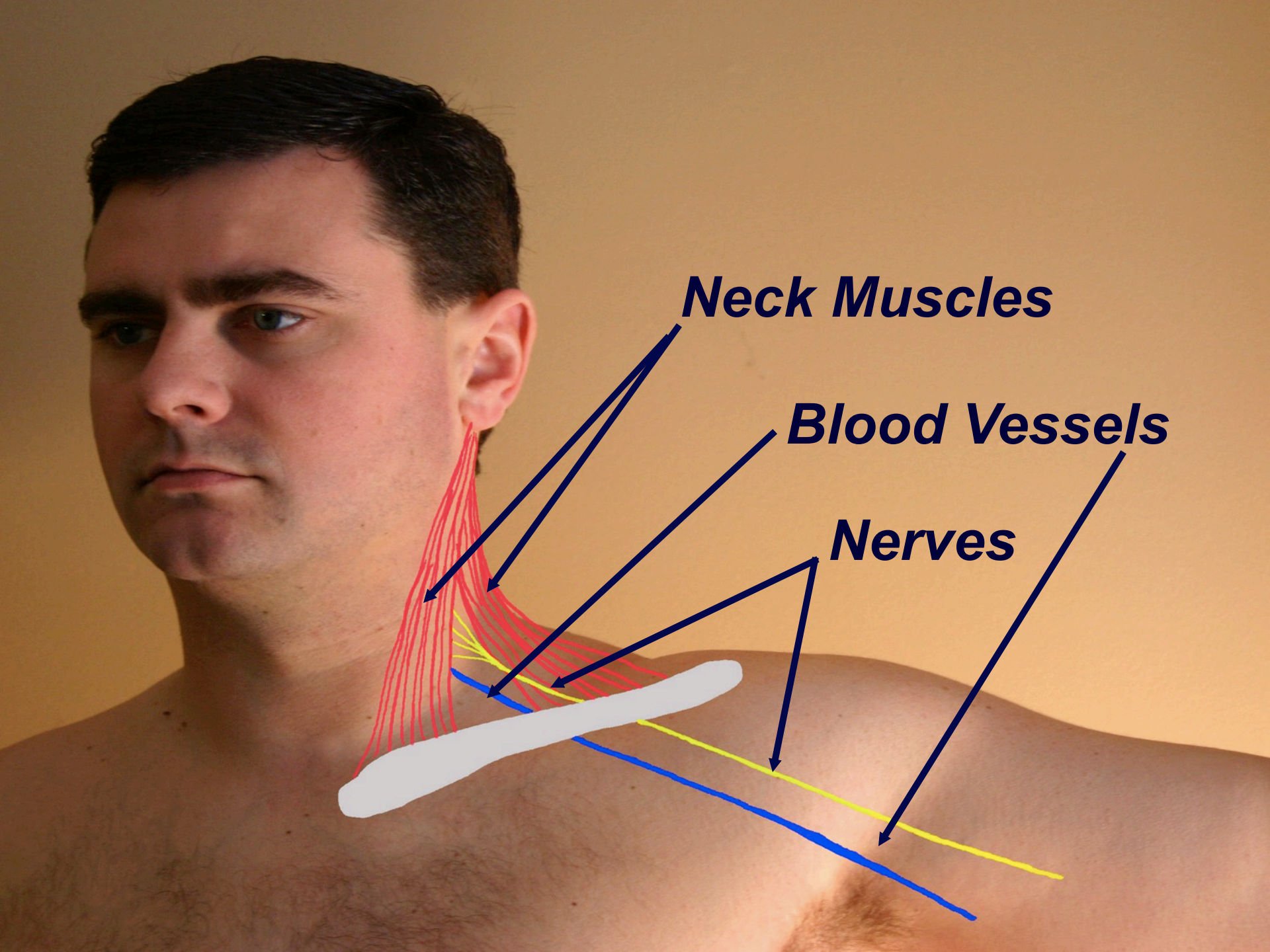
pulling on **bones**

move-posture **joints**

...all fed by a

Blood Supply





Neck Muscles

Blood Vessels

Nerves



*Computer
posture pain
epidemic*

*Round Shoulders
Forward Head
Slouching*

***Forward Head Posture
Round Shoulders
Slouching...***

*Upper back
Upper neck
Neck muscles
Headache & TMJ
Shoulders
Lower back*



Fixing it....

BE AN INCH TALLER !

Ergonomics setup ...chair-desk-equip

posture tactics ... posture variety

"perfect" posture not good for you

Micro-stretches

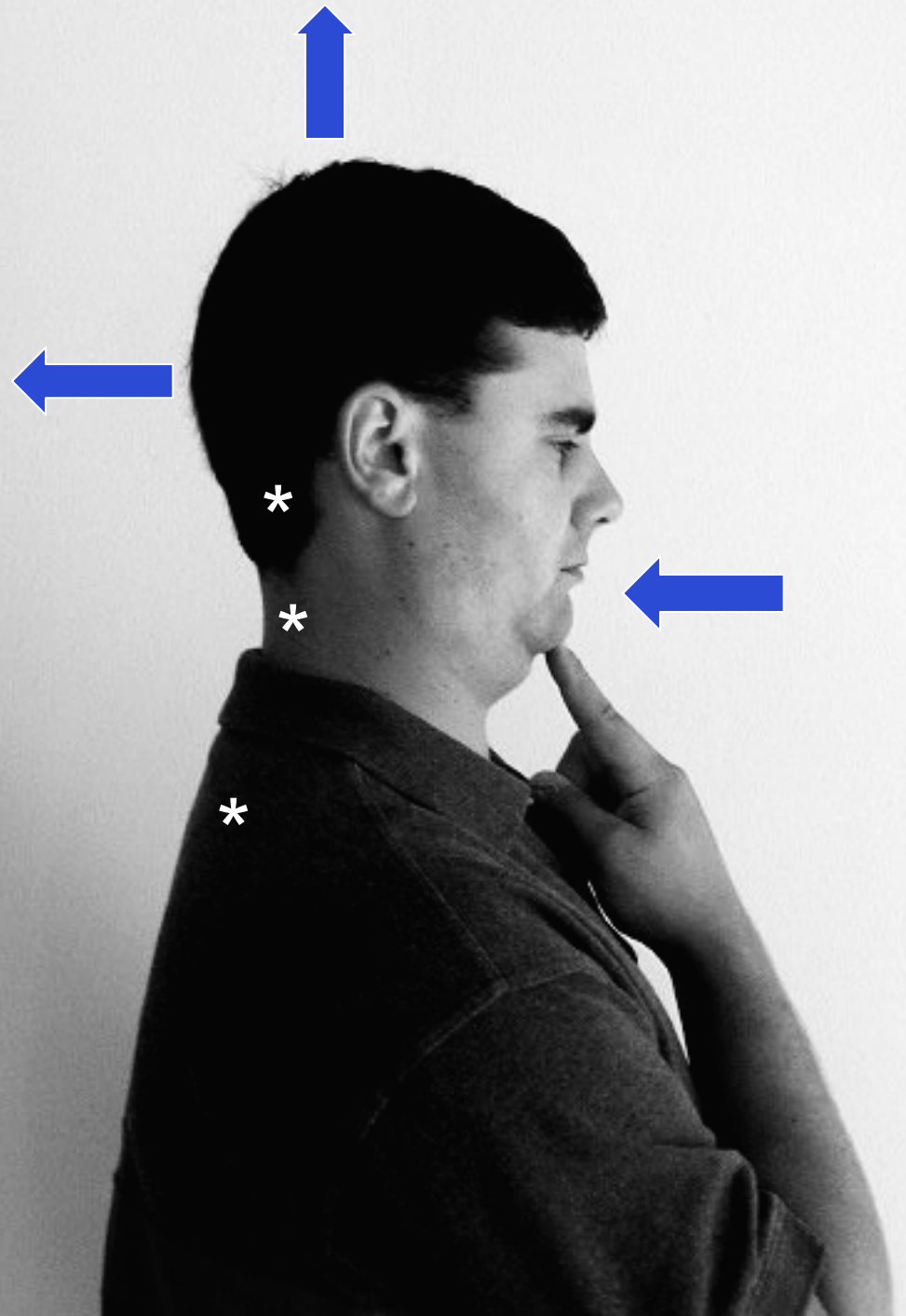
After-work recovery tactics

Be an inch taller !

Tuck chin in

Head tall

Shoulders back



Hold shoulder down

Tip head away

Keep face forward

(turn slightly toward hand)

10 sec... gently !

exhale





NO!



*slouched ...
unsupported*



*upright ...
Supported*

... be an inch taller

ARM POSTURE WORK

Arms held up?

or

Supported on work surface?



Forearm pad

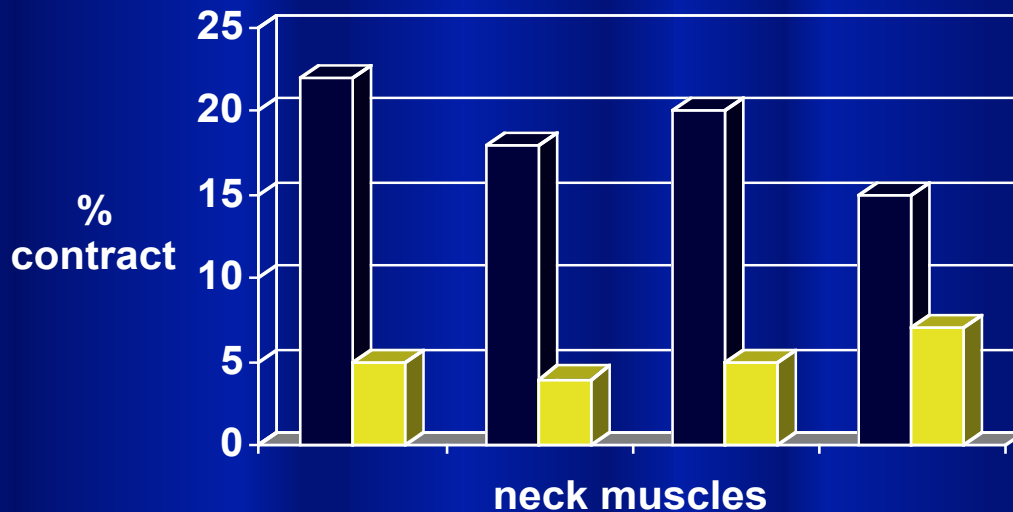
Neck Work.. Arm Support

Posture Work

*Arms unsupported
during work..*

vs.

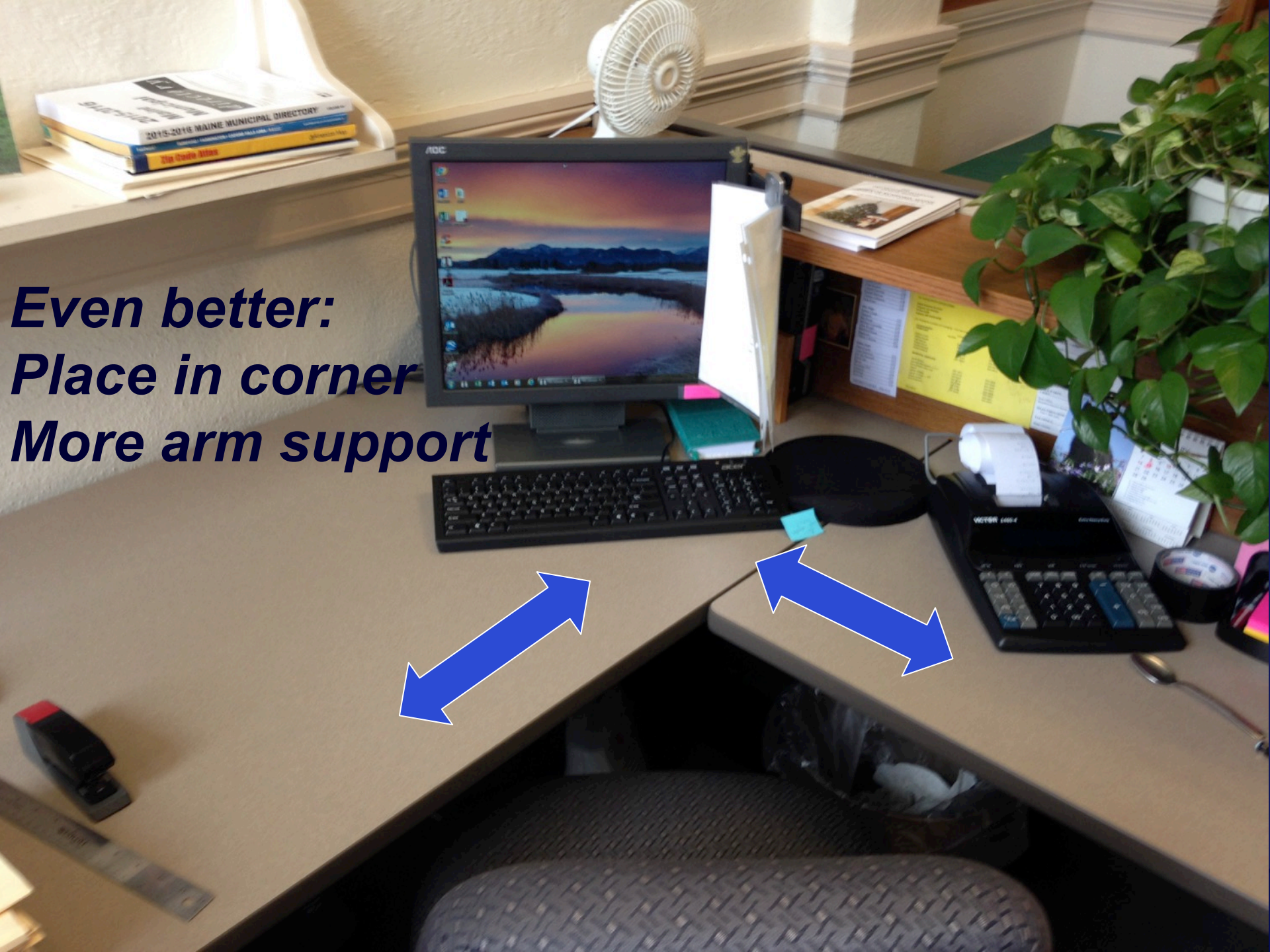
*Arms supported
during work.*



Push keyboard in, add padding



***Even better:
Place in corner
More arm support***





*slouched ...
unsupported*



*upright ...
Supported*

... be an inch taller

Shoulder Risks

Reaching

Rounded-shoulders Posture

Rotator cuff



Shoulder Reach...

How high

How far

How often

How prolonged

How heavy

Re-design job

Rotate worker

Codman exercise





SHOULDER REACH

ROTATOR CUFF STRAIN

*Reference texts
on shelves*



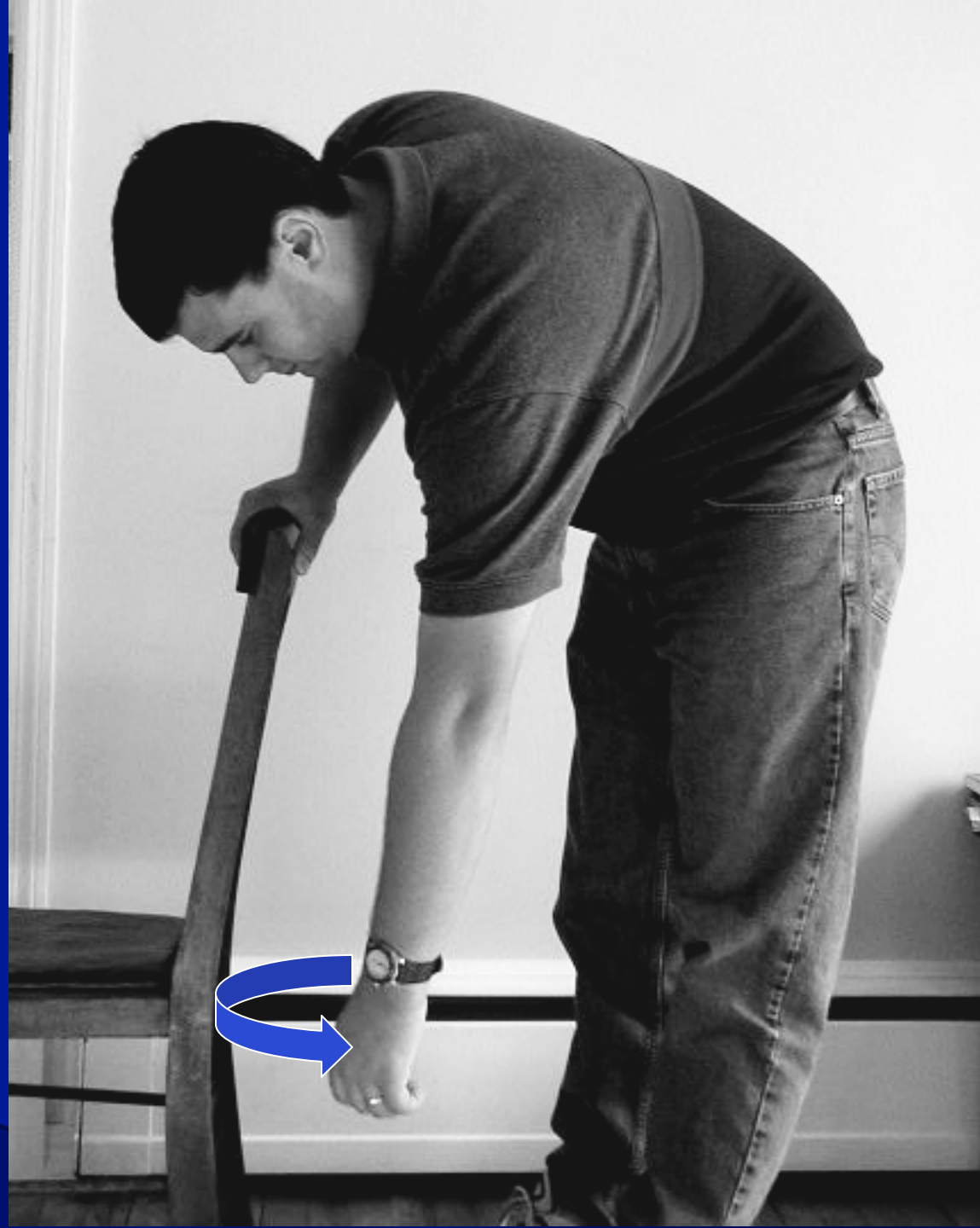
*Dangle, relaxed,
Swirl around 10x*

POSTURE...

Be an inch taller

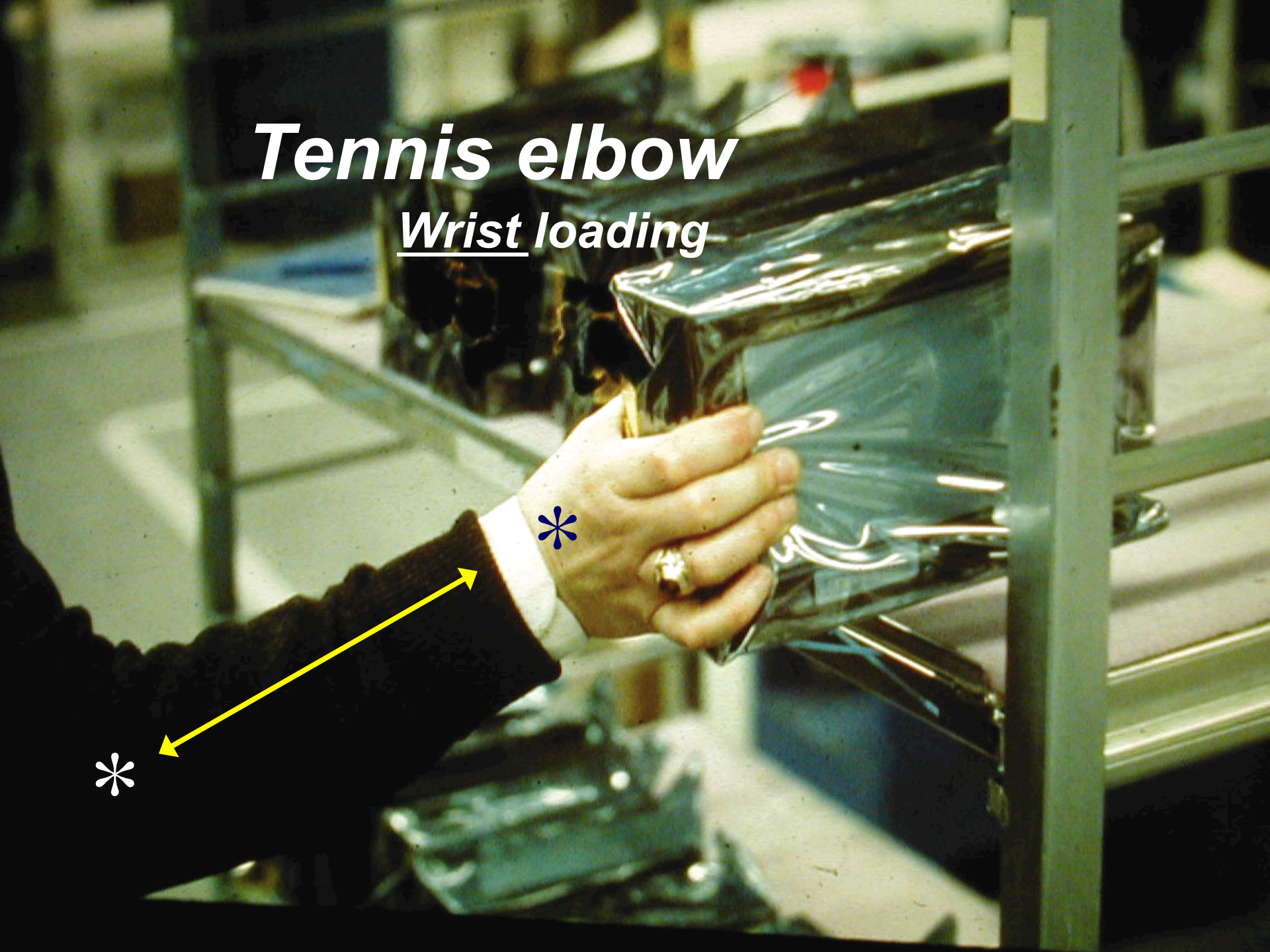
Head tall

Shoulders back



Tennis elbow

Wrist loading



Golfer's Elbow

X

X

***Muscles-tendons
for grip-pinch***



Mouse vs. Trackball



***Sustained
light grip***

A photograph of a cluttered desk. In the center, a person's hands are on a white keyboard. To the right is a white mouse with a red button. A computer monitor is in the background, displaying a software interface. The desk is covered with papers, a mug, and other miscellaneous items. The text "Finger-wrist extension" is overlaid in the center of the image.

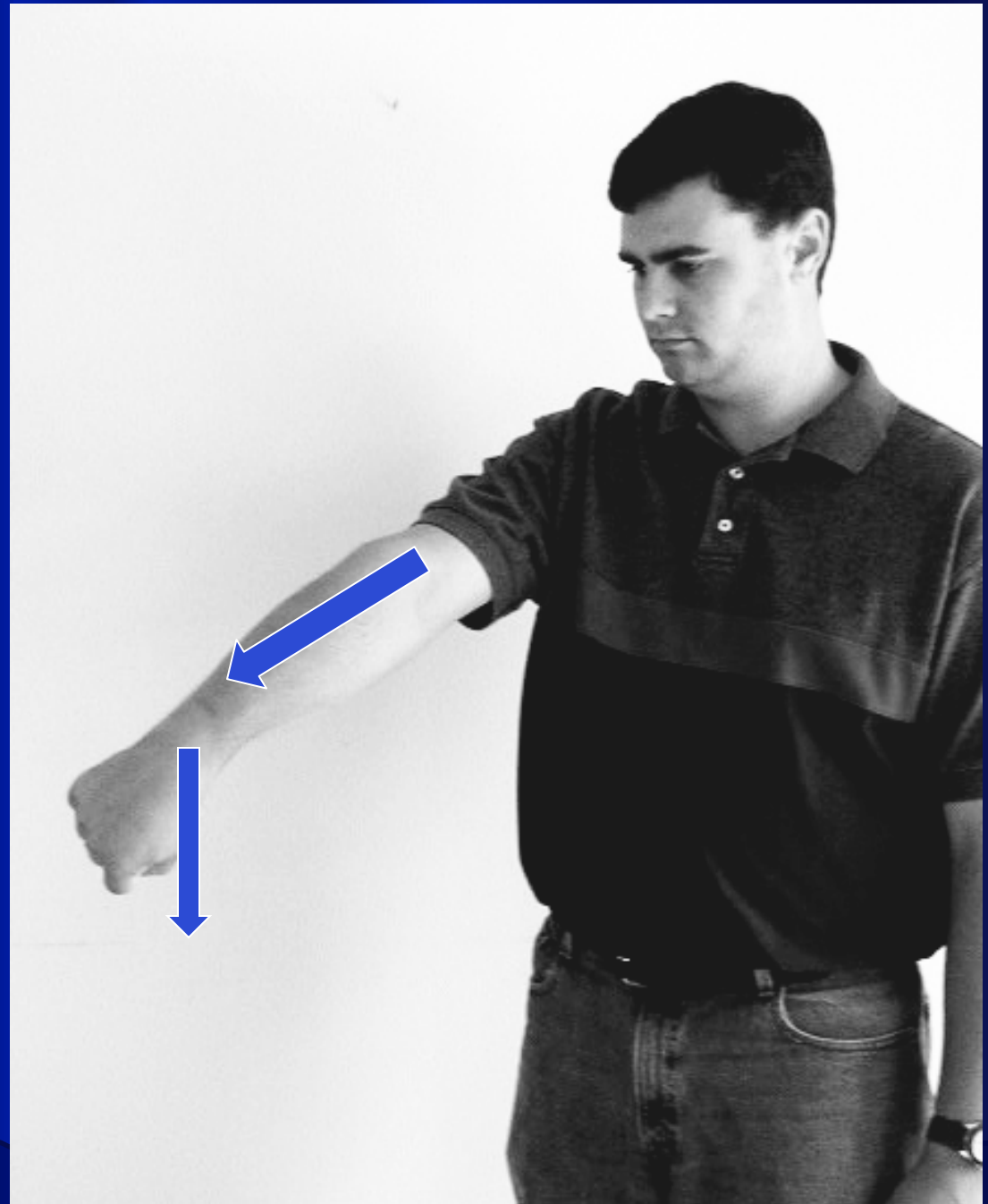
***Finger-wrist
extension***

***Answer: task variety
Switch between them hourly***

Tennis Elbow Stretch

*Palm down,
Fist closed,
Elbow straight,
Curl wrist under.*

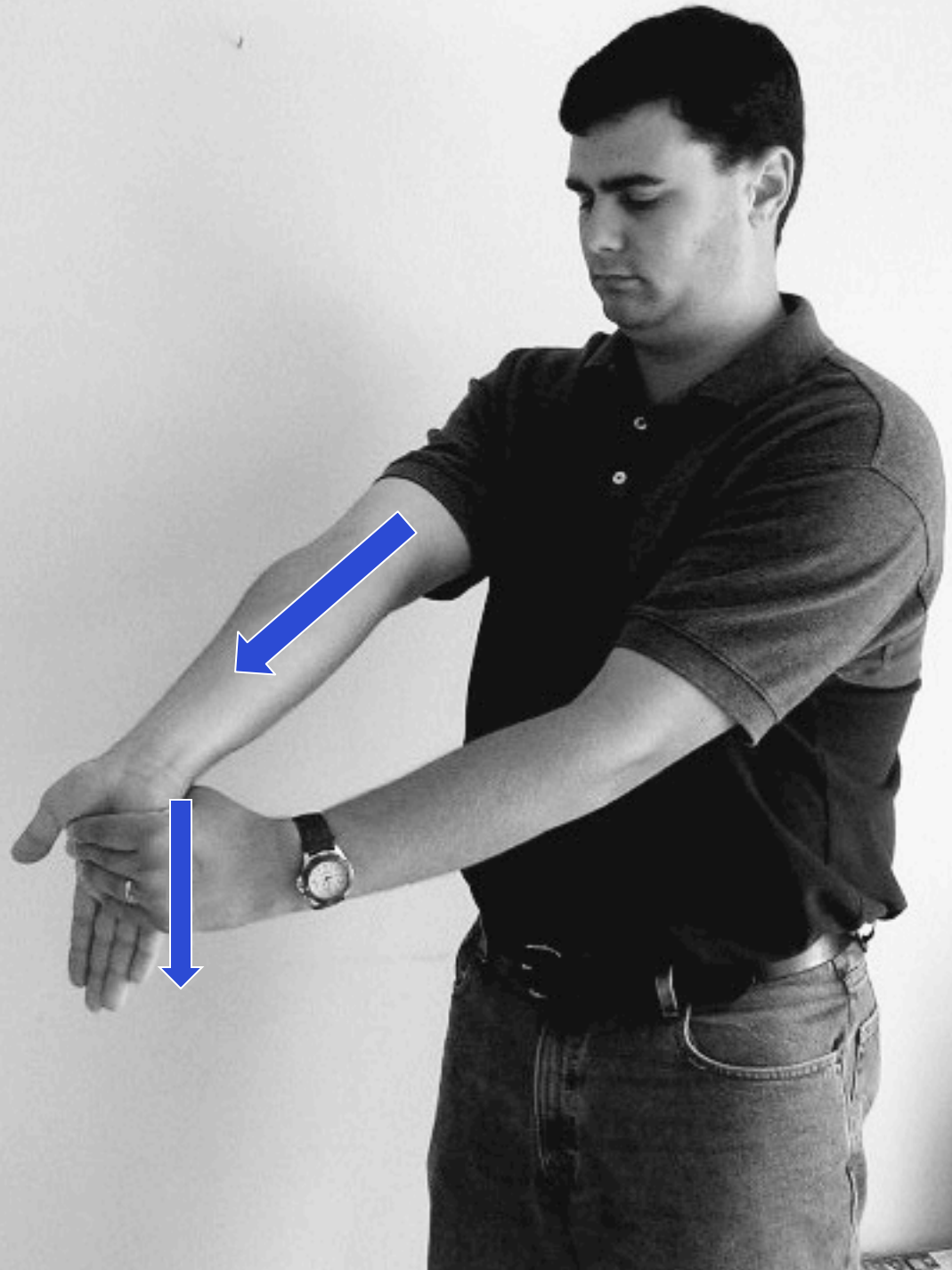
10 sec



*Golfer's Elbow
Stretch*

*Palm-up
Elbow straight
Stretch hand back*

Gently 10 sec



WRIST RISKS

- ***CARPAL TUNNEL***
- ***TENDINITIS***

Carpal Tunnel

GRIP

*Heavy grip, or
prolonged light
grip (mouse)*

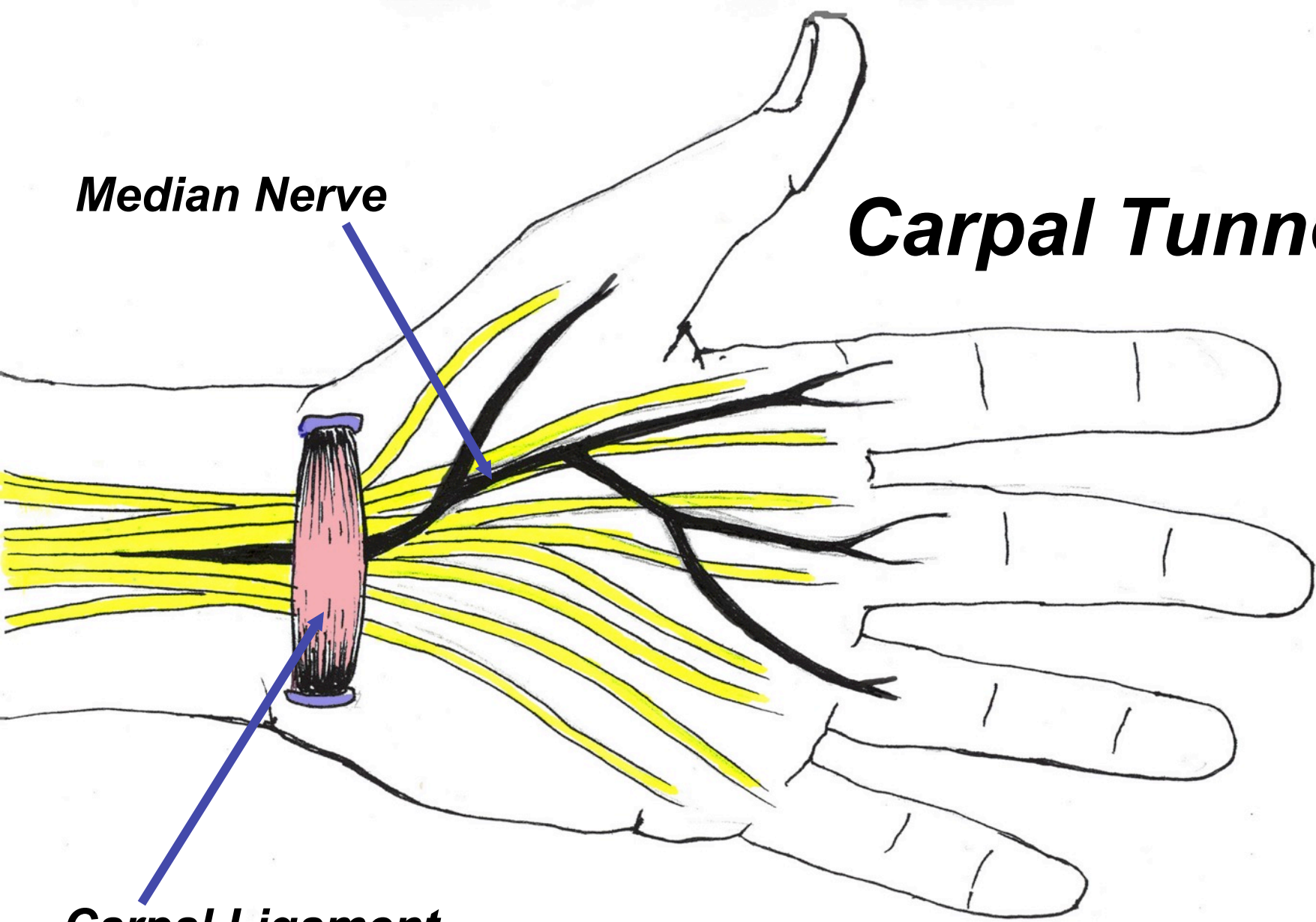
GRIP Ergo...

*Time, force, size,
torque, slip, vibrate*



Median Nerve

Carpal Tunnel



Carpal Ligament



Pinch

poor ergonomics-tool... poor work technique



Padded fat pen, light pinch habit, vary tasks, stretches

Wrist flexion



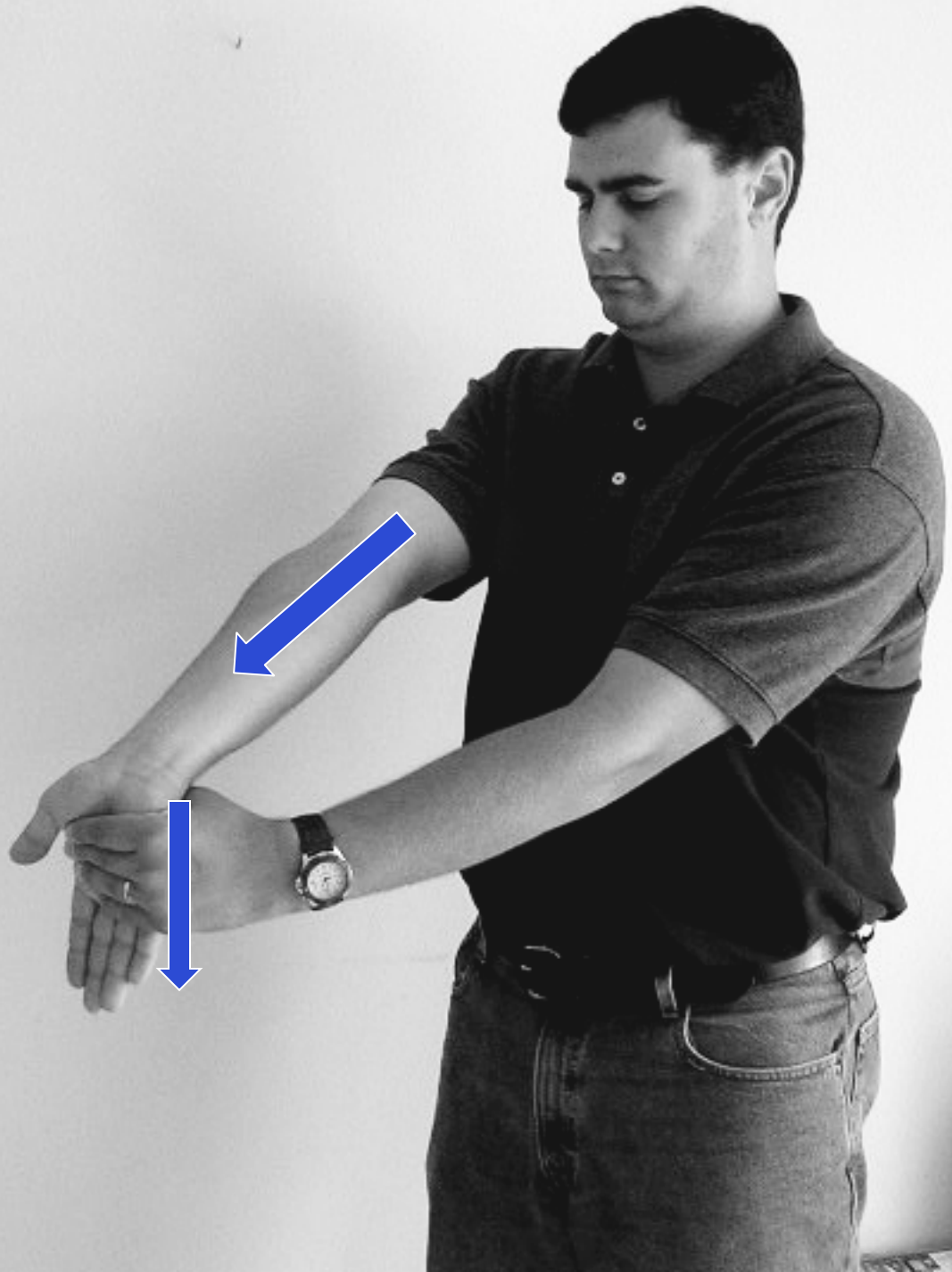


Wrist deviation

*Golfer's Elbow &
Carpal Tunnel
Stretch*

*Palm-up
Elbow straight
Stretch hand back*

Gently 10 sec



Computer work-station set-up

Monitor

Keyboard

Mouse

Desk

Chair

Posture Symmetry... Variety



*

*

*

*

*

*

*



*bifocal or
progressive
eyeglasses
on computer*



in-corner setup for forearm support

Vari desk



**SITTING IS SLOWLY
KILLING YOU**

POSTURE VARIETY!

Legs in-out

***Trackball
vs
Mouse***





Stress

Tension

Blood flow

Fatigue

Pain sensitivity

Clench-shrug
Inhale 3 sec.



Relax-exhale 5 sec.

Micro-Stretching

IT WORKS... (IF YOU DO IT RIGHT)

- ***NOTE:***

Two minutes for the entire program.

Stretching does not impair production.

Production often goes up due to less fatigue









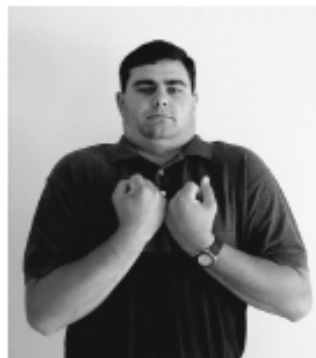




tuck chin in 10 sec



stretch neck sideways 10 sec



shrug & inhale 3 sec...then... relax & exhale 5 sec



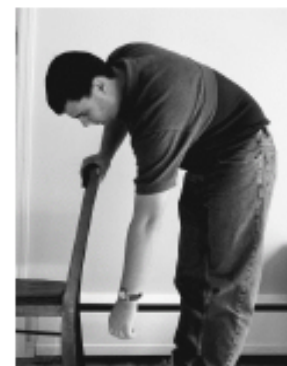
stretch hand back 10 sec



curl fist down
elbow straight 10 sec



stand back bend 5 sec



dangle and swirl around 10x



hold thigh up and
straighten knee 15 sec



stretch forward 10 sec

Workplace Stretches

SmartCare Physical Therapy
Dixfield, ME 562 9049
www.smartcarecpt.com



break

Low Back Pain - Injury

- *#1 lost time injury*
- *80% get it*
- *More costs than cancer!*

Back Injury is NOT a disaster

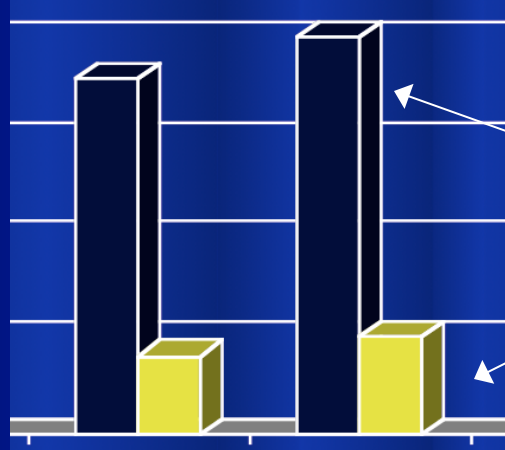
Almost everyone gets better

Unless... you freak out over it ... back pain panic

Spine packed with sensitive nerves

Pain does not match damage

Brain changes from pain & panic



This much pain

from this much damage

X-rays & MRI's... LIE!

*65% of adults with **NO** back pain
have arthritis, degenerated discs,
herniated discs, stenosis*

*But **NO** back pain*

Don't let an MRI make you disabled

Age changes

Discs get thin
Arthritic joints
Tight muscles
Weak muscles

brittle...weak
poor elasticity
unstable



Be an EXPERT

- *How it is put together mechanically*
- *How it works mechanically*
- *How it breaks down mechanically*



Vertebrae

attached at
Facet joints

cushioned by
Discs

connected by
Ligaments

stabilized by
Muscles

not straight..
Curvature

Facet Joints

***Small surface
Weight-bearing
Very Sensitive***

***This is where
arthritis occurs***

***Joints stiffen
with age***





*Overhead
Stand
Cement
Vibration
Twist*



BUT:

Sitting compresses discs

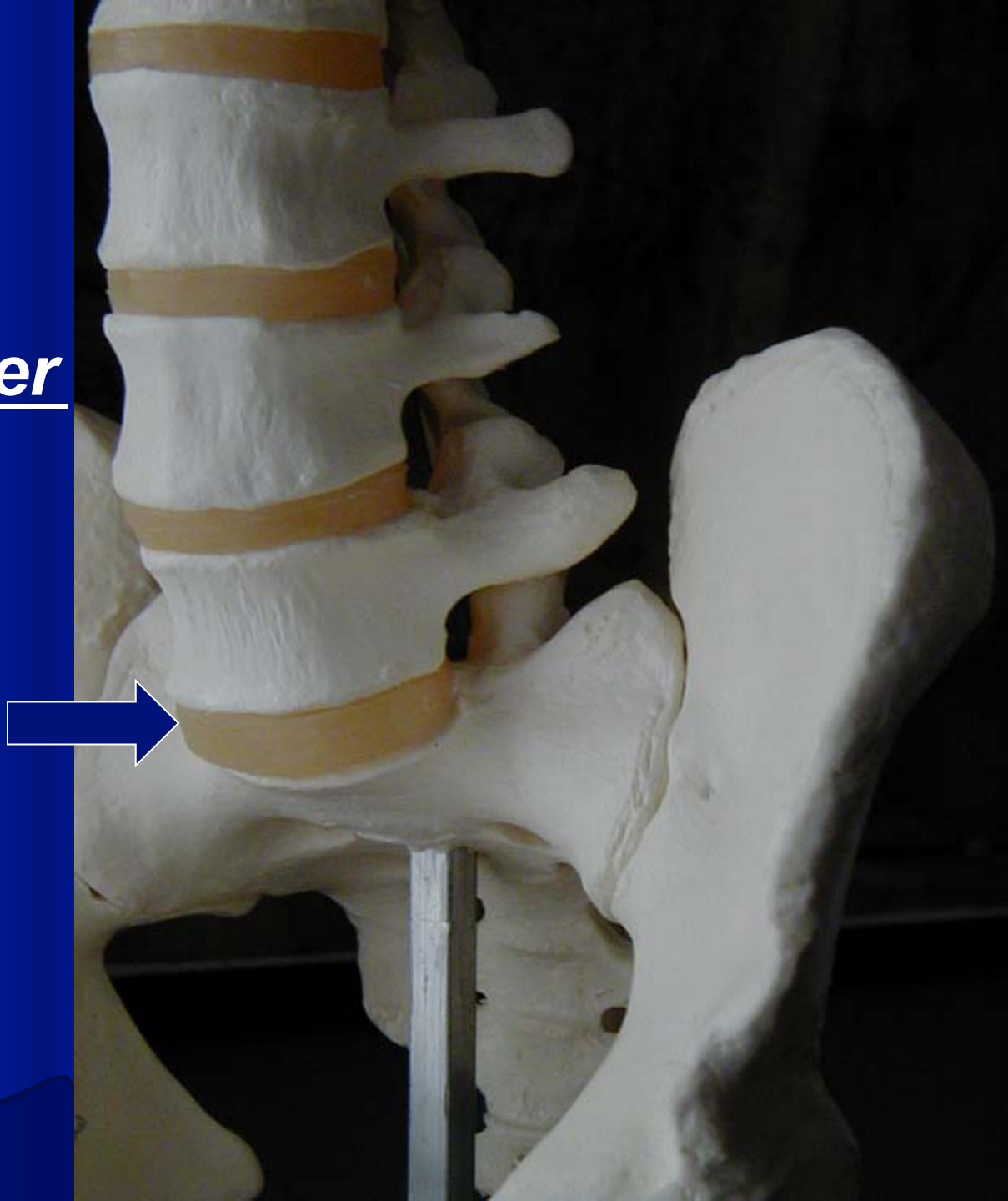
Aging shrinks discs

Shifts loads onto facet joints

Discs:

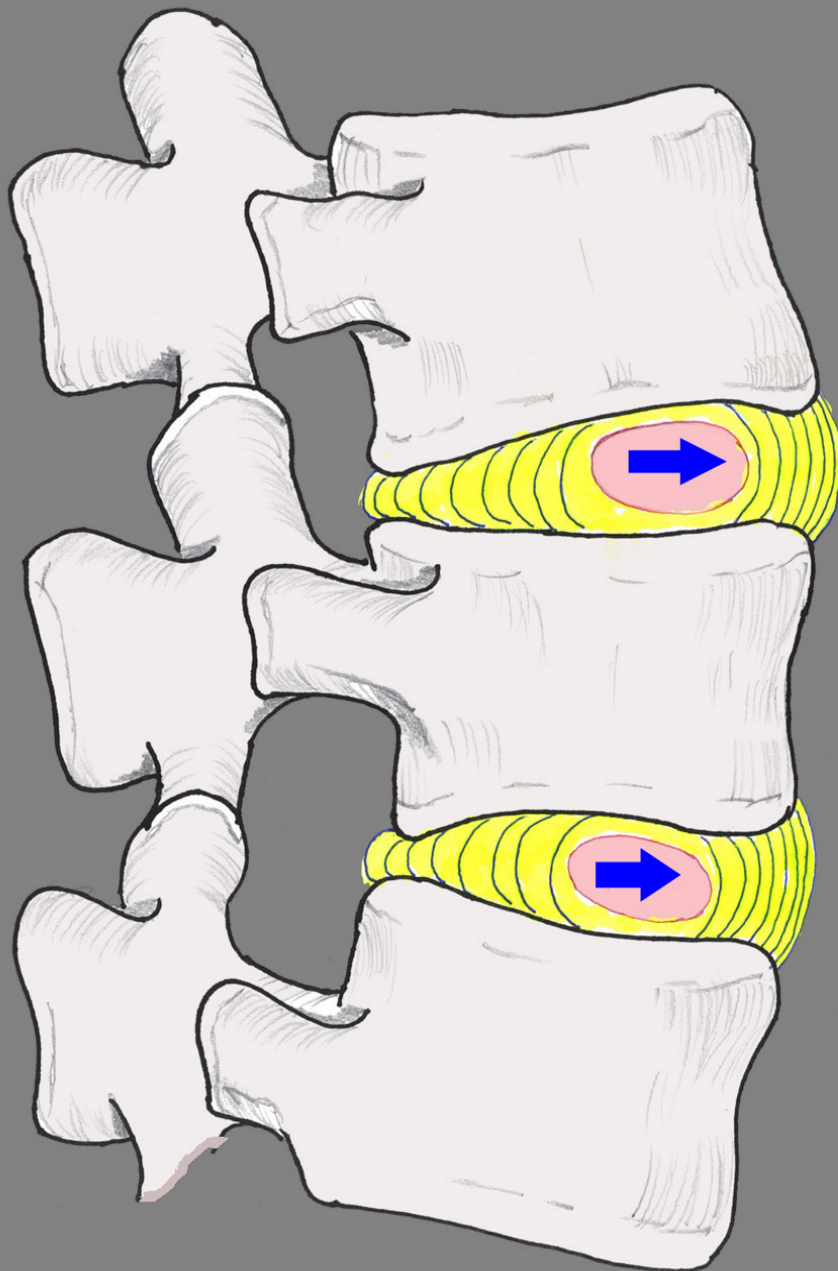
Shock-Absorber

Ball-Bearing

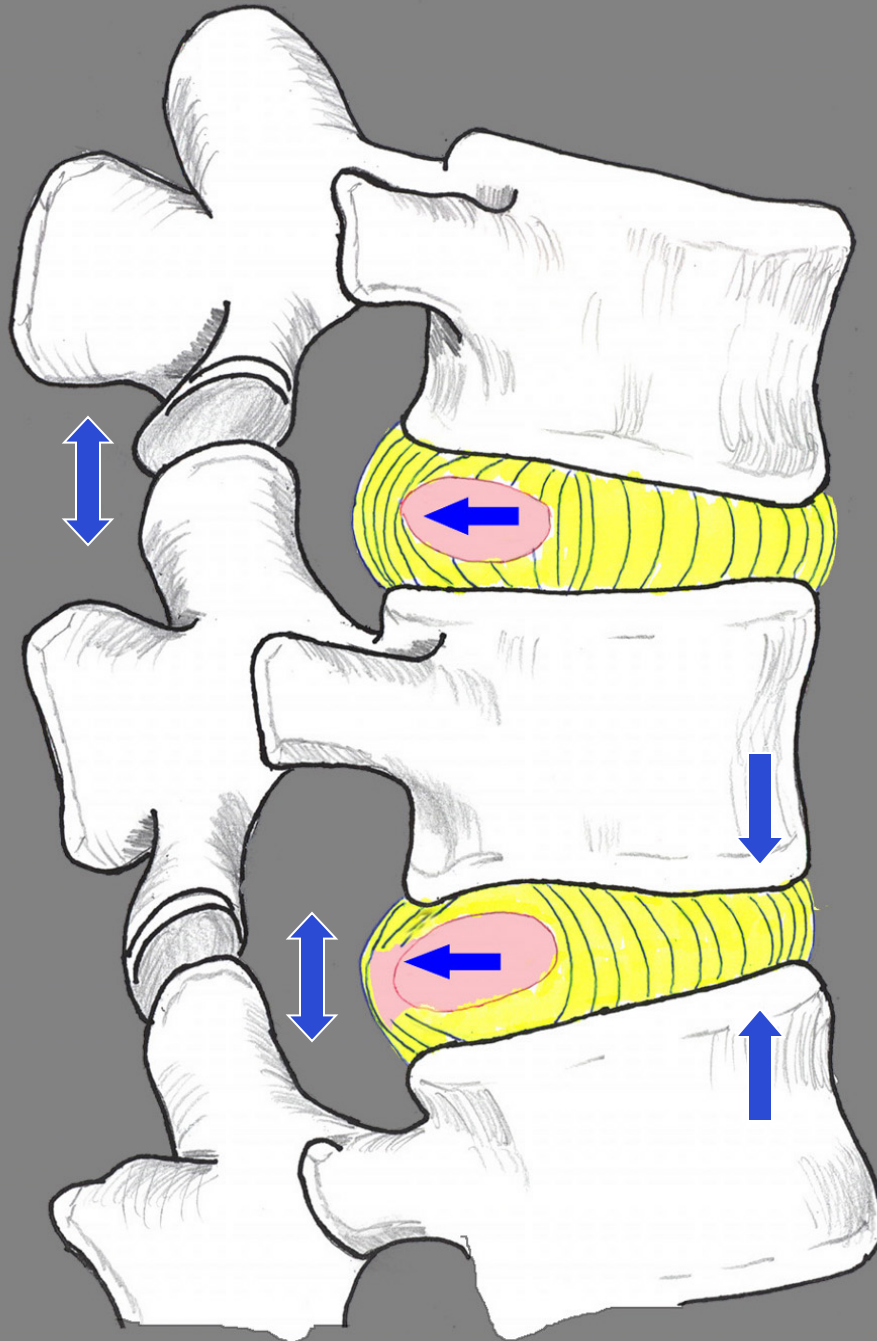


*Upright normal
lordosis posture*

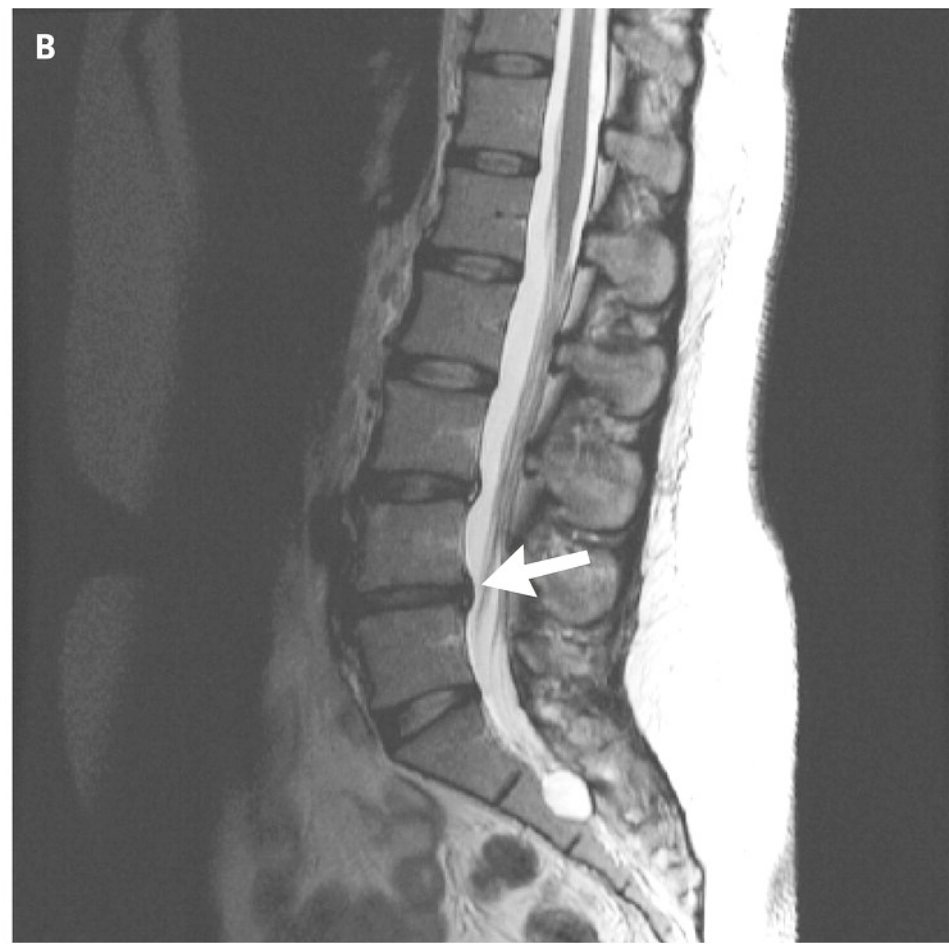
*Backward
bending*



*Forward
Bending*



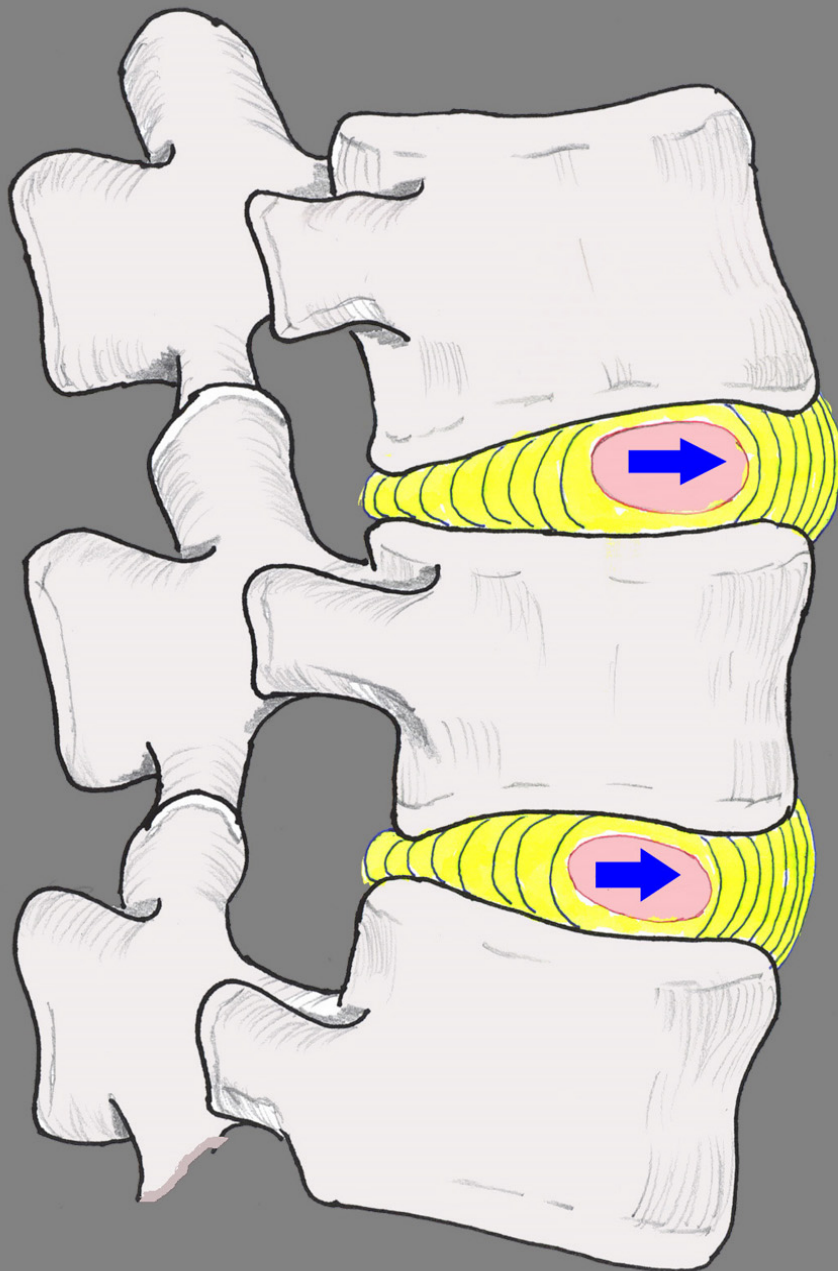
*or
sitting*



Most disc herniations will resolve

*Upright normal
lordosis posture*

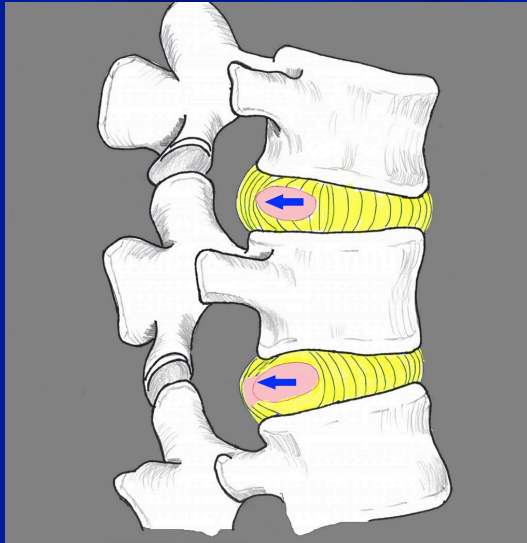
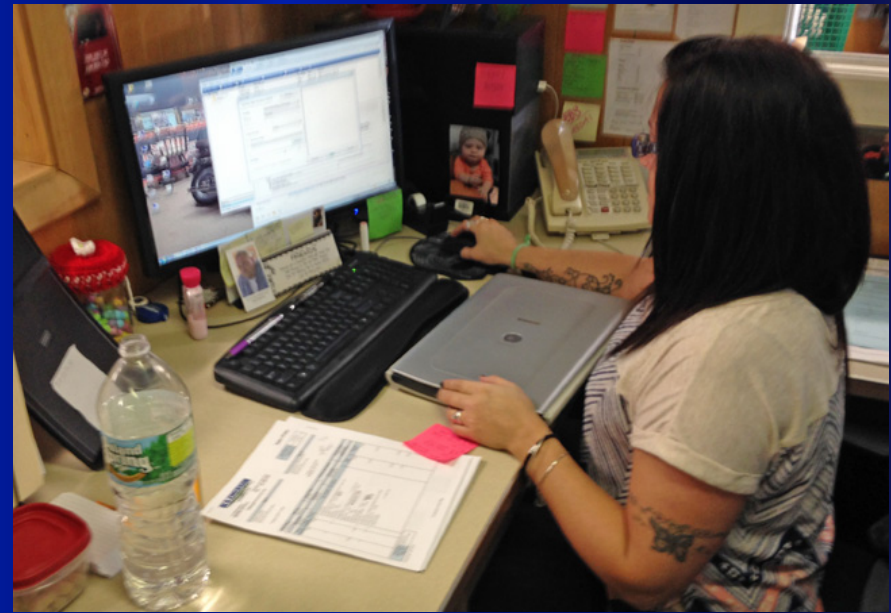
*Backward
bending*





bending

Sitting



Aging:

Discs 80% water.

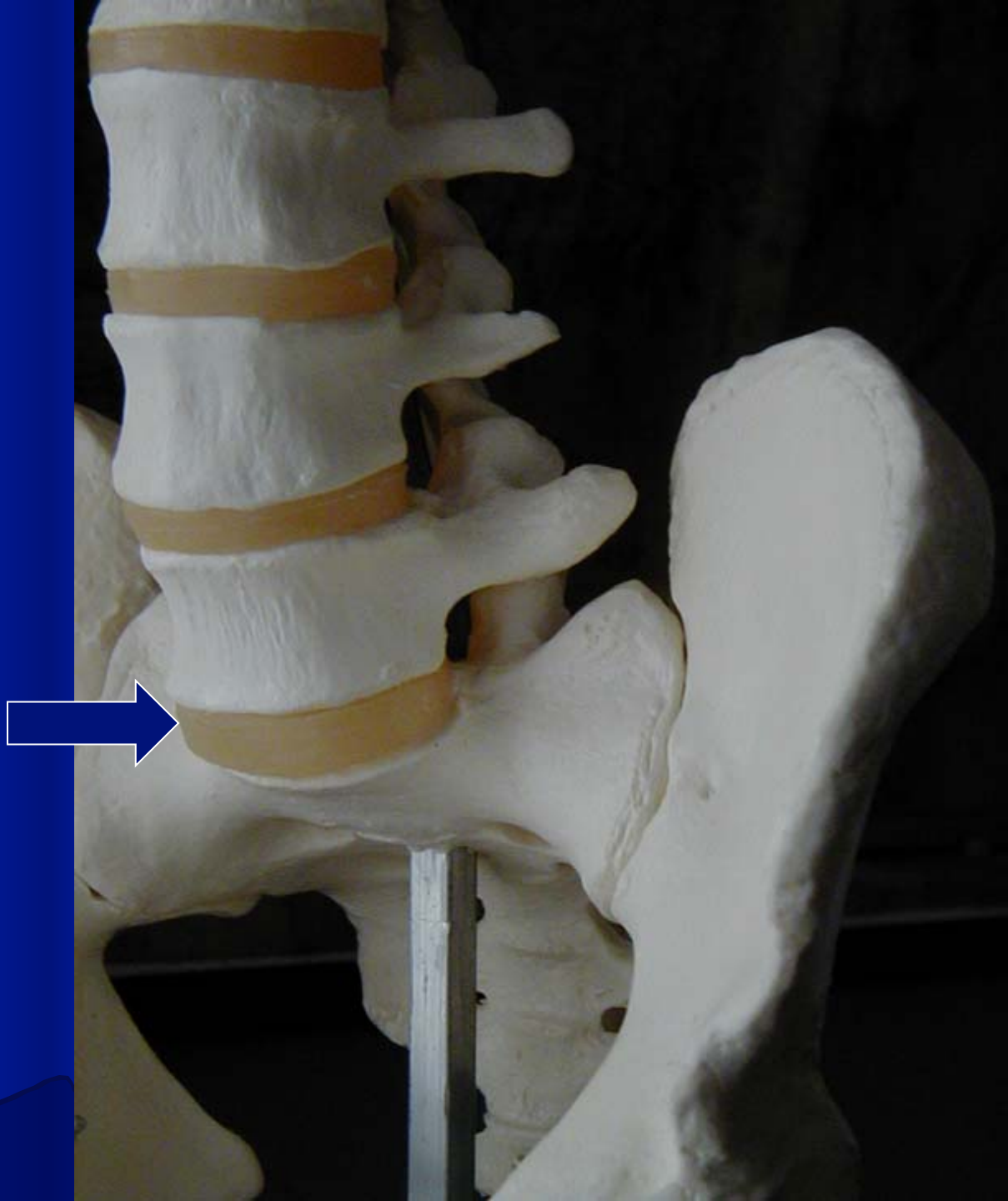
They “dry out”

*Loss of water:
Discs gets thin*

*Increases weight
on facet joints*

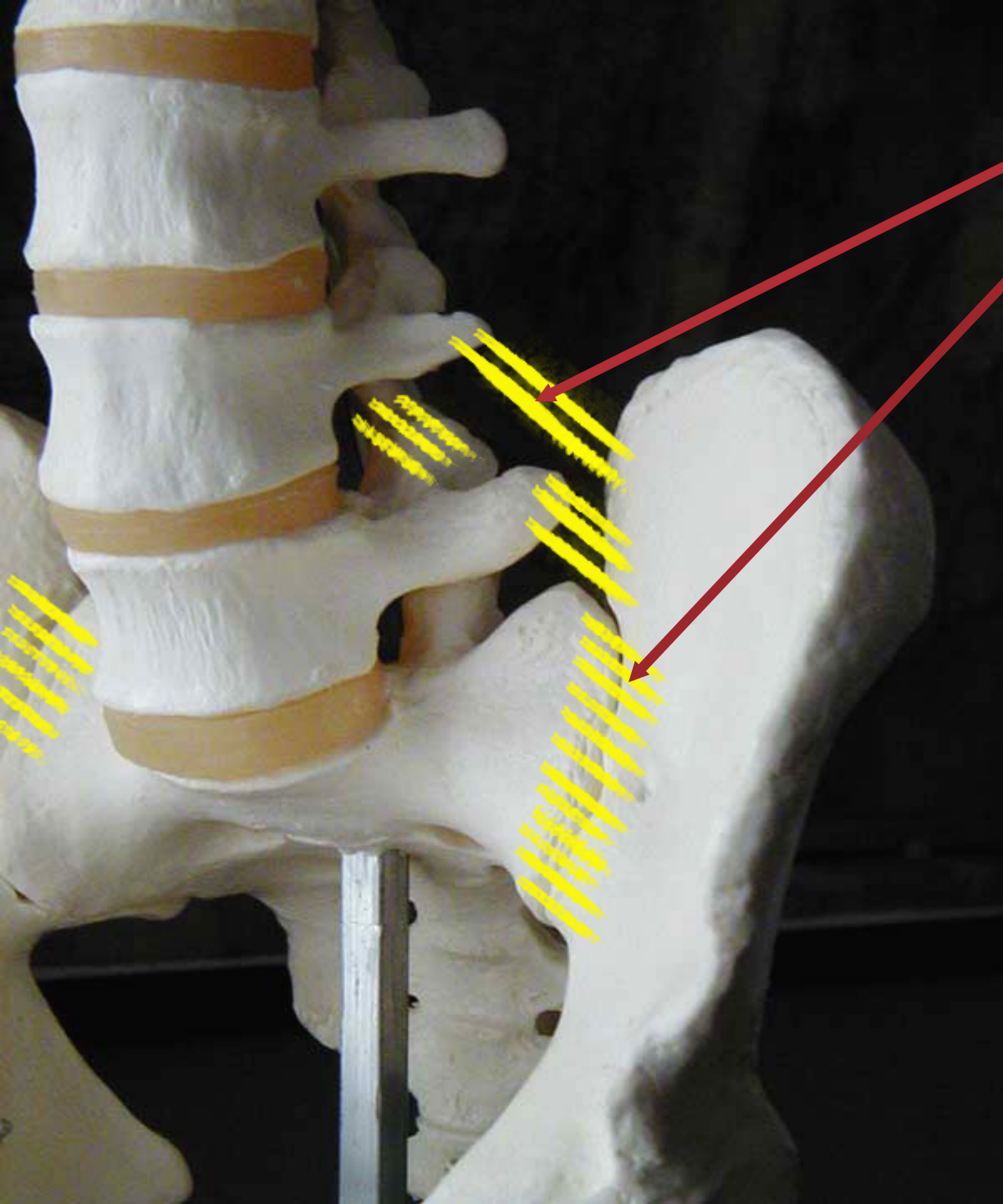
*Facet joints get
arthritis & stiff*

*Reduced movement
reduces disc water
further... DDD*



Back-Bends





Ligaments

*elastic straps
control range
of motion*

*Scar tissue..
... stiff & brittle*

*Discs shrink...
ligs now unstable*

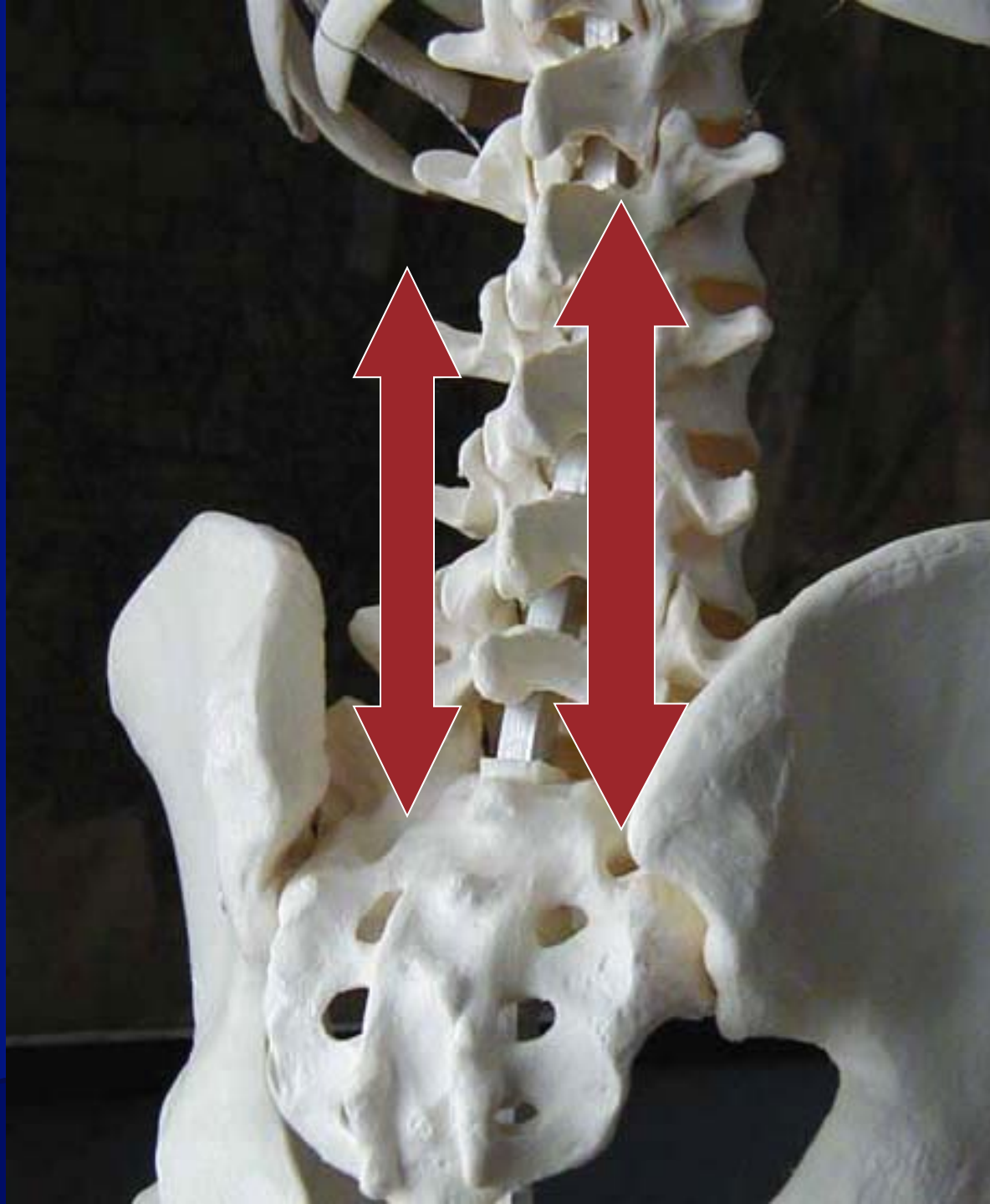
Back Muscles

not weak

protect discs,
ligaments, and
joints during
lifting

BUT...

Sitting makes
them weak



SITTING

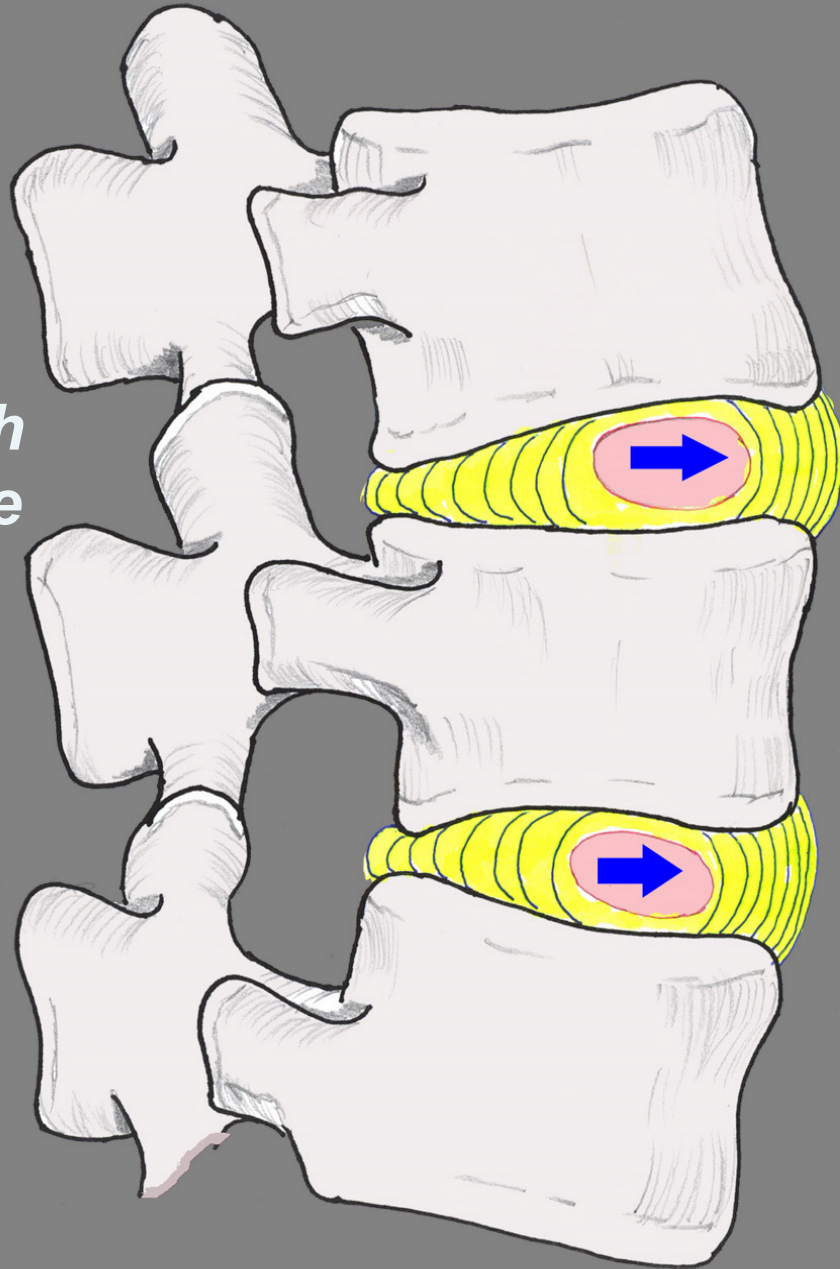
DESK

VEHICLE

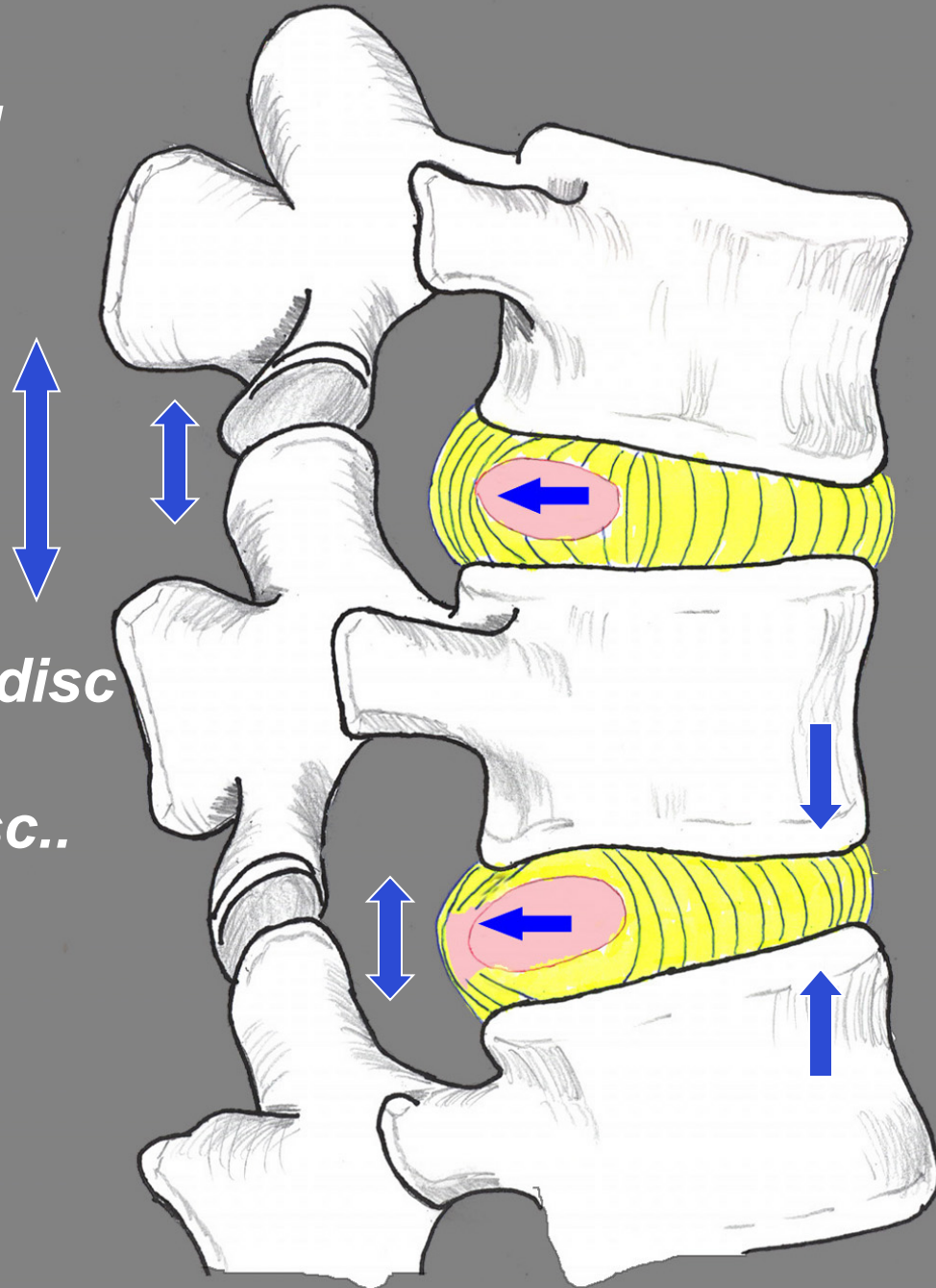
SEVERE CORE WEAKNESS

INSTABILITY

*Upright posture, with
mild swayback curve*



Forward Bending



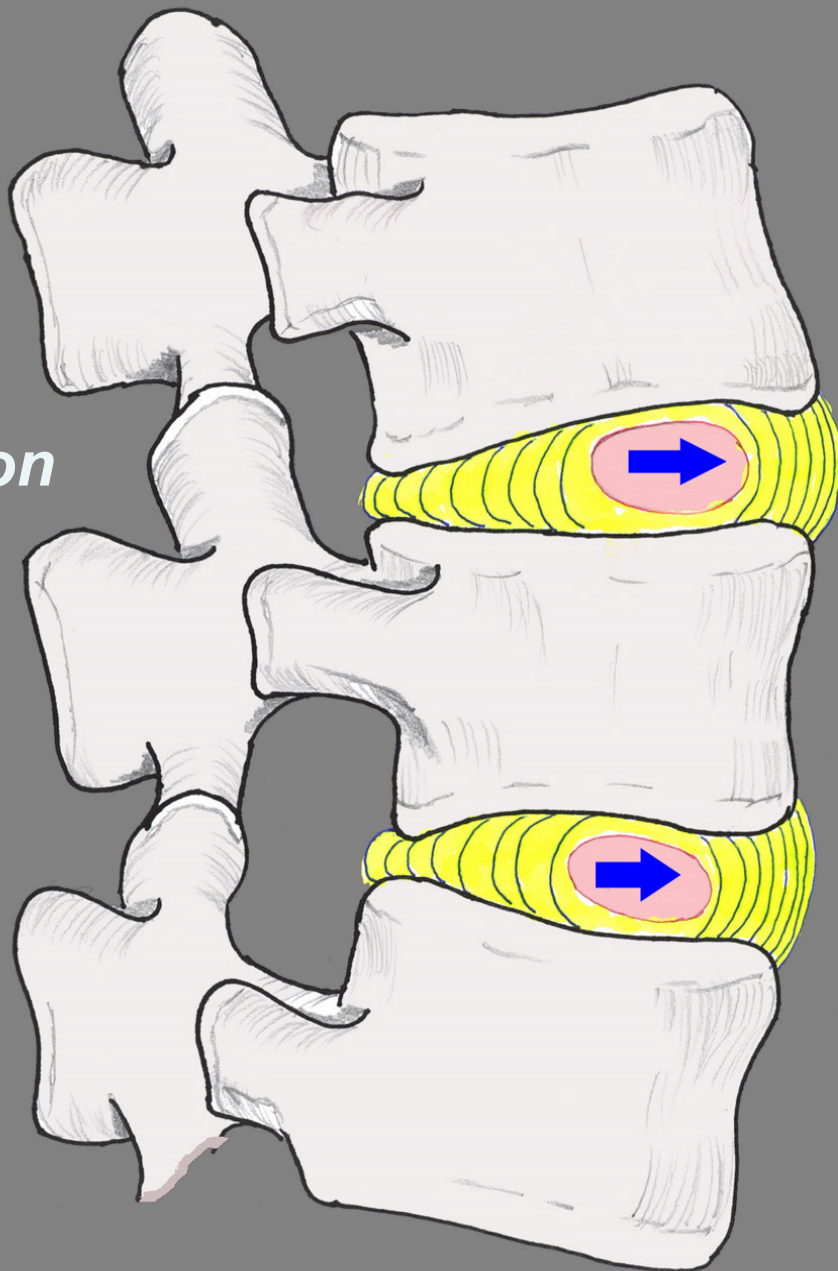
Squeeze front of disc

Bulge back of disc..

Unstable joints..

*Over-stretched
ligaments..*

*Muscles put these all on
slack, protecting them*





HOWEVER ...

***Bending past 45 degrees,
causes back muscles to
shut completely OFF !***

***..total loss of protection
to disc, joints, ligaments.***

ALSO...

***Sitting weakens muscles
(severely)***



Good Flexibility:

***Bends more at hips,
less at low back***



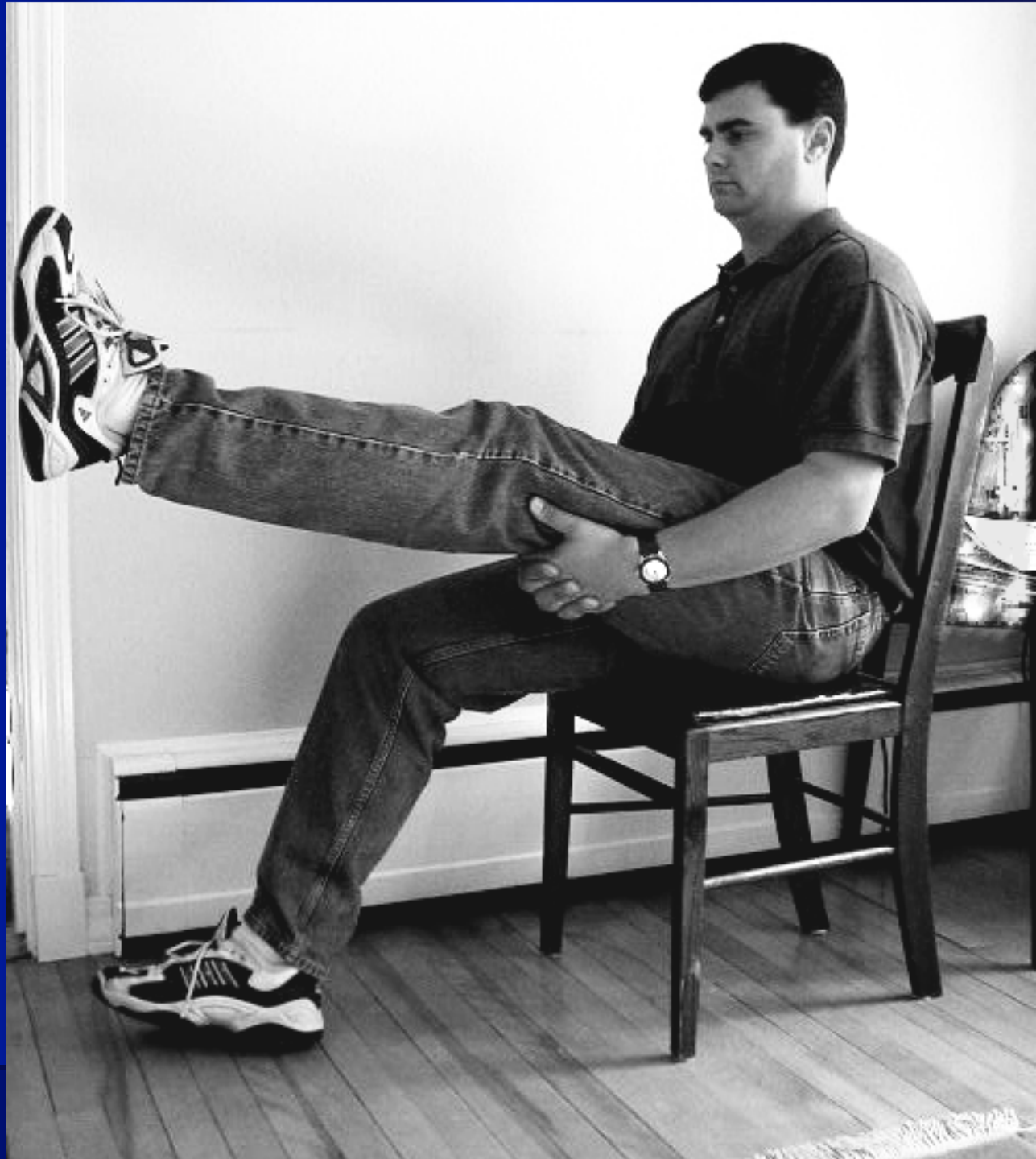
X

Tight Hamstrings

reduced bend at hips...

excess bend to low back

Hamstring Stretch





Sitting !

Seating...

*Perfect posture is bad
... if prolonged*

*Posture **variety***

Change ht-fit often

Sit-stand work

Take a walk !



Sit-Stand



Vari-desk

Back-Bends



Lifting

- *Lifting demands*
 - *what* are you lifting ?
- *Lifting behaviors*
 - *how* are you lifting it ?



***Ergonomics
vs.
Worker habit***

- Weight***
- Frequency***
- Low height***
- High height***
- Horiz. reach***
- Twisting***
- Handle***

LIFTING !!!

***Lifting
technique***

...ING DISCONNECT SWITCHES
... OFF TO THE SIDE AND TURN YOUR HEAD, FACING
... FROM THE SWITCH.

Lift-table Turn-table



Store heavy stuff (paper boxes) at belly level

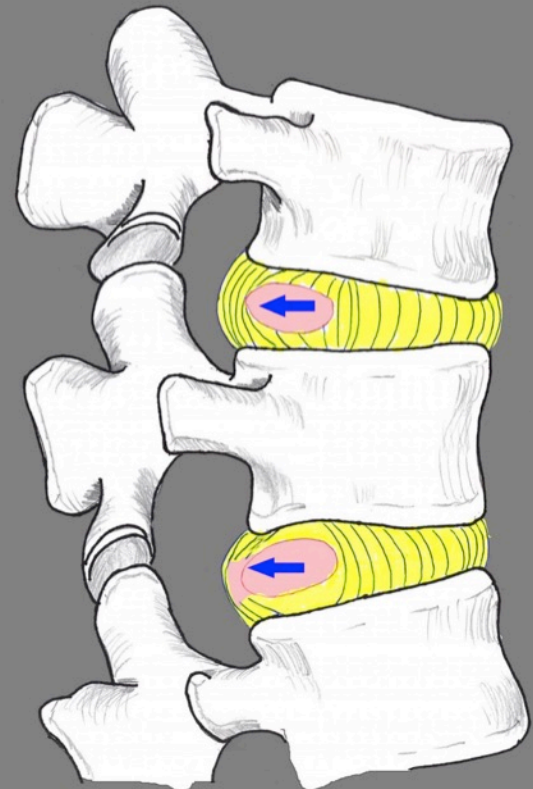


Lifting Behaviors

- *Lifting Technique*
- *Body Mechanics*

Improper Lift

*Forward bending
with a load*

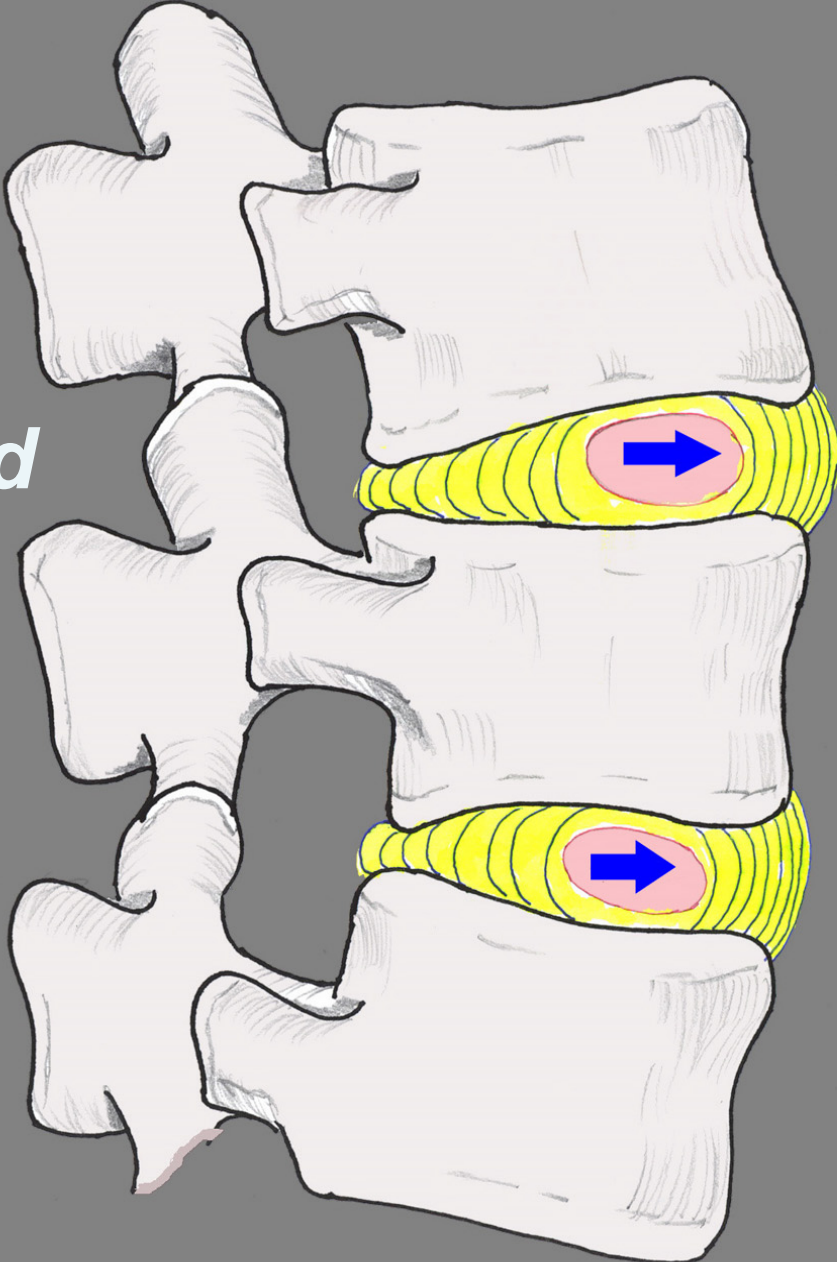


Proper Lift:

Wide base
Load close
Chest out
Squat



*Stabilized in
mild arched load*



Wide stance

Load close

Tuck chin

Chest out

Arch low back

Tight gut & butt

Put it down

the same way





***Low Lift..
Tuck chin in***



***High Lift..
Tighten belly***



Micro-stretching

Standing back-bend

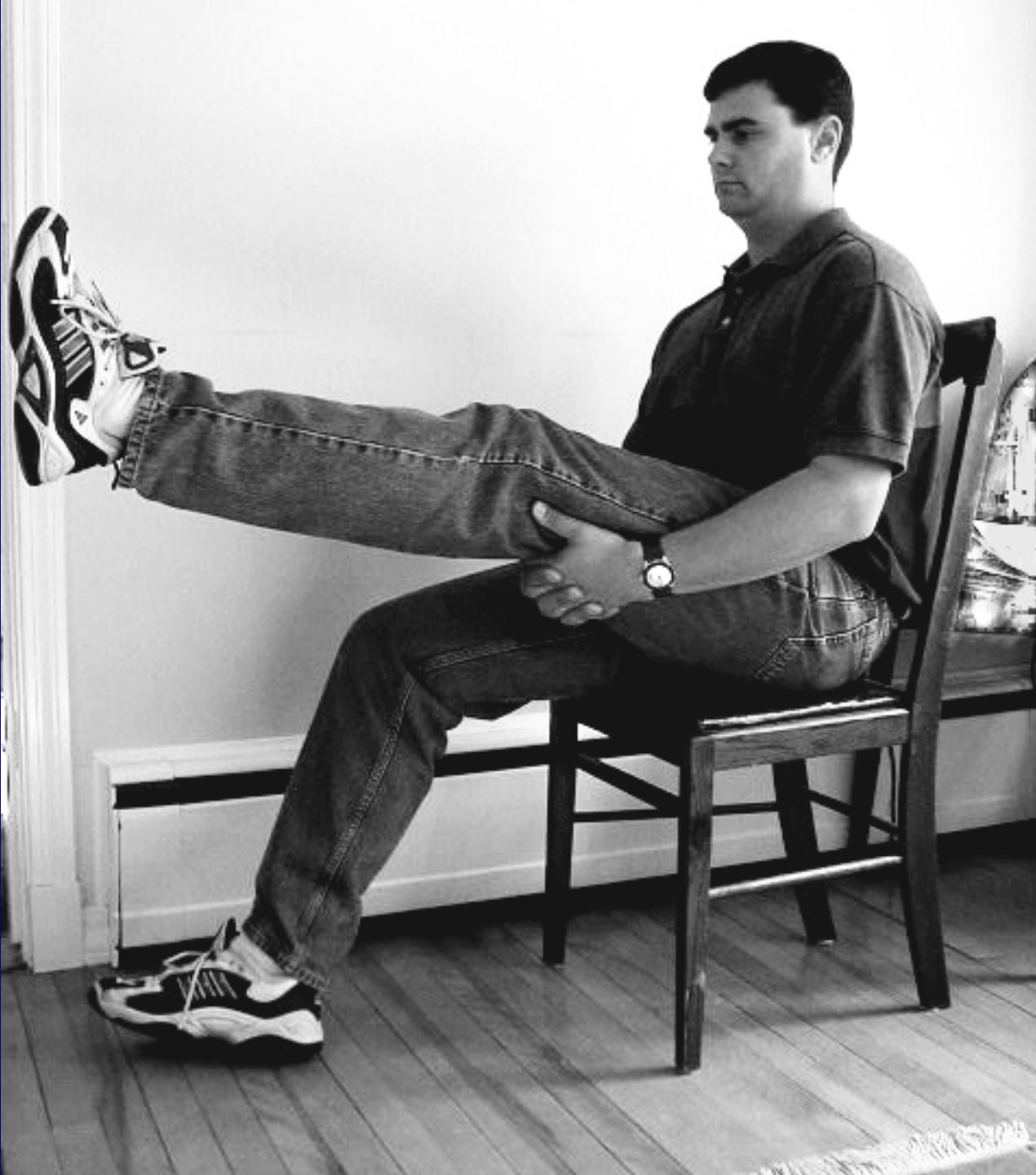
Hands on hips

Look down

Push out belly

Gently.. 10 sec.. often

Hamstring stretch

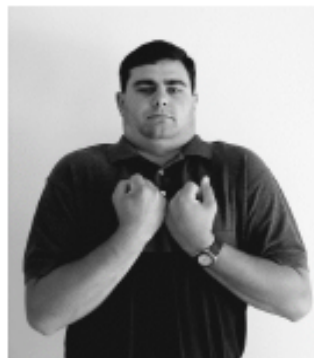




tuck chin in 10 sec



stretch neck sideways 10 sec



shrug & inhale 3 sec...then... relax & exhale 5 sec



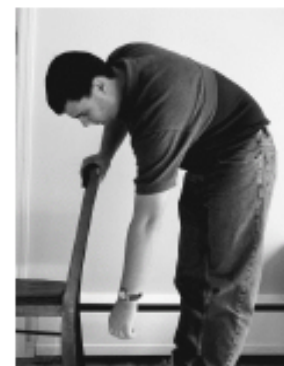
stretch hand back 10 sec



curl fist down
elbow straight 10 sec



stand back bend 5 sec



dangle and swirl around 10x



hold thigh up and
straighten knee 15 sec



stretch forward 10 sec

Workplace Stretches

SmartCare Physical Therapy
Dixfield, ME 562 9049
www.smartcarecpt.com

SmartCare's 'NO-LOST-TIME' Micro-Stretches...

(Do NOT start these without proper instruction)



Chin tuck, gently, 10 sec.



Stretch neck sideways 10 sec



Shrug & inhale 5 sec, then...



Relax & exhale 5 sec.



Dangle & swirl arm around 10x



Palm up, stretch wrist back 10 sec.



Palms down, elbows straight,
Curl fists down & out, 10 sec



Hands on butt, push belly out
stretching back gently 10 sec



Grasp thigh, straighten knee
to stretch back of thigh 30 sec.



Toes on wall, knee straight, leg
forward to stretch calf 30 sec



Grasp thumb, tilt down 10 sec



Sitting, stretch forward 10 sec



Stretch-reach sideways 10 sec



Heel on knee, twist into it 30 sec

SmartCare P.T.

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www.smartcarept.com
www.impacc.com

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Self-care

***For your working, aging body...
Stretches at home before bed...
To keep a healthy back healthy...***







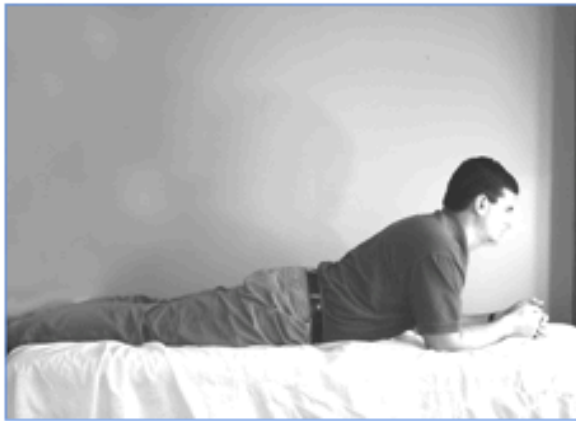






Lower Back... basic health & recovery

... do these only as approved by your Physical Therapist



On belly, prop up on elbows, relax like this for one minute



Hold one knee to chest; keep other one flat, 30 sec



Hold thigh, straighten knee, keep other leg flat... 30 sec



Lift butt...then, keep butt lifted as you reach one leg out... 3 seconds... then keep butt lifted as you switch legs... 10 paces



On elbows, lift body up on toes and elbows, hold 3 sec, do 10X



STANDING BACK-BEND

Chin down
Hands on butt
Push belly out
Stretch backward 10 sec
Once ... gently

Do this often if doing lots of bending or sitting or lifting



Sitting.
Put right heel on left knee.
Pull right knee toward left shoulder.
Turn chest toward right knee.
30 seconds.
Then do other side.

SmartCare PT

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DISCLAIMER

*Our best opinions on how to
keep a healthy body healthy.*

*If you already have a problem,
consult your physical therapist
for what is best for YOU.*

REPORT PAIN EARLY!

Big problem... Work ethic prevents reporting...

You can cause a simple fixable problem to become a permanent serious disability !!!

Report your pain early, so it can easily be fixed for you and for others !!

www.smartcarept.com

Thank you !