



IIMEC10

Activity guidelines to avoid symptom flares

Betsy Keller, PhD
Ithaca College
Ithaca, NY

Thanks to:
Staci Stevens, MA, Workwell Foundation
Barbara Belyea, DPT, Ithaca College

Presentation Outline

- Your **energy currency** and PEM
- **Core Stability** to conserve energy
- **Structured physical activity** to improve physical function
- ALWAYS think **energy conservation**
 - **Top 10 tips** to conserve energy every day

Your Energy Currency

1. Short-term anaerobic (~1-15 sec.)



This is your 'on-demand' energy system that meets immediate and/or high intensity energy needs such as running from a burning building or lifting a heavy weight. This energy system runs out quickly and takes about 3-4 times as long to recover the energy used.

Your Energy Currency

2. Long-term anaerobic (~15-75 sec.)



Compared to the short-term energy system, this energy system provides energy for moderate intensity, longer duration energy needs such as sprinting, moving quickly, or lifting weights repetitively for 30-60 seconds. Energy production drops off significantly after about 60-75 seconds.

Your Energy Currency

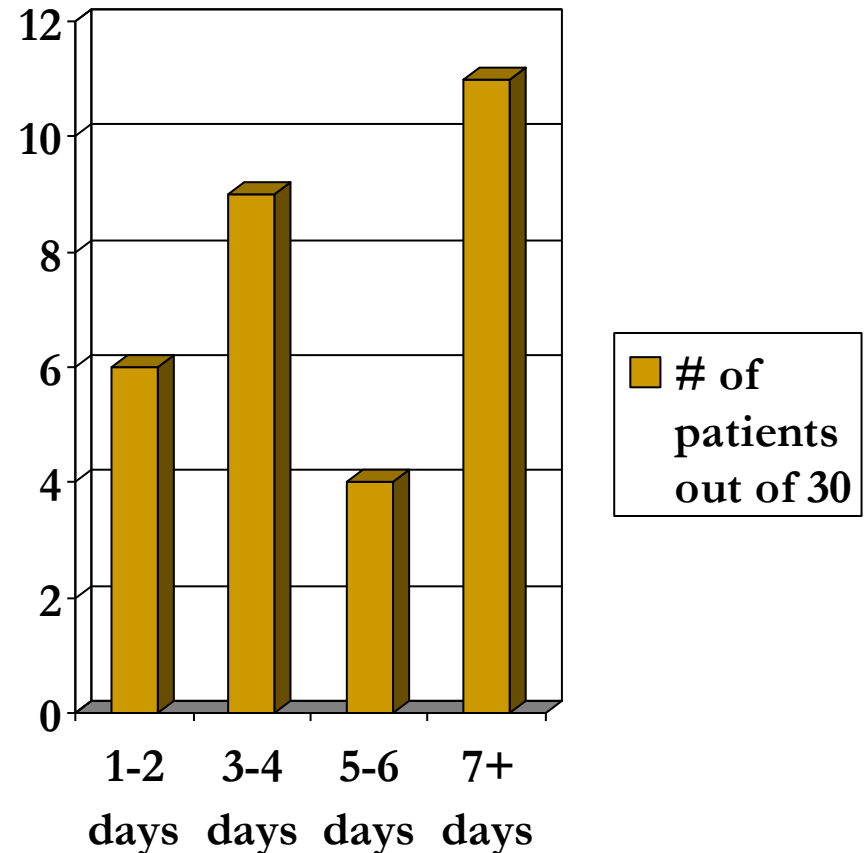
3. Aerobic (at rest & >2+ minutes of physical activity)



This is your long-term energy system that meets energy needs for all low level as well as moderate intensity, long-duration activities such as walking around a grocery store, sitting and typing at a computer, or jogging for minutes to hours. This energy system provides most of your daily energy needs. Normally, with low intensity activities, it meets on-going energy demand with little difficulty, and recovers quickly. **WITH M.E., THIS ENERGY SYSTEM FAILS TO RECOVER NORMALLY.** Stressing this energy system will cause *Post Exertion Malaise (PEM)*.

Abnormal Recovery Response

- Treadmill test lasting 5-10 minutes
- 75% of ME - recovery took 3 days or longer
- How patients felt
 - “Out of sync, dull-thinking, spaced out, I saw spots in front of my eyes.”



Post-Exertion Malaise

- ***A Defining Quality of ME***
 - Case Definition: Post-exertional malaise lasting more than 24 hours
- ***Not Just Fatigue***
 - light-headedness, breathing problems, muscle pain, cognitive problems, headaches, nausea, more...



“Treating PEM once it happens is much more difficult than preventing it.”

L. Bateman cited in Spotila, J.- Research1st

1) Pre-emptive rest on schedule

- Don't wait for crash
- Rest on schedule, even if you don't feel need...
- Lie down, eyes closed
- Length, frequency varies with symptom severity



“Treating PEM once it happens is much more difficult than preventing it.”

L. Bateman cited in Spotila, J.- Research1st

2) Pace

- Limit activity to level that does not exacerbate symptoms
- Activity level/type may vary depending on state of wellness/illness
- Know your triggers (Computer time? Too much walking?)
- Think cyclically NOT linearly
- Plan ahead – easy access food/drink if symptoms do worsen

Redefine Exercise ~~Activity~~

- Traditional approach does not work
- Past vs. present
- Focus on *Quality of Life*



Physical activity strategy



- Functional movement that is restorative
- Train *short term* energy system (< 60 second activity time)
- **Goal** - improve
 - *range of motion*
 - *functional strength*
 - *core stability*

CORE STABILITY to conserve ENERGY



What is CORE stabilization?

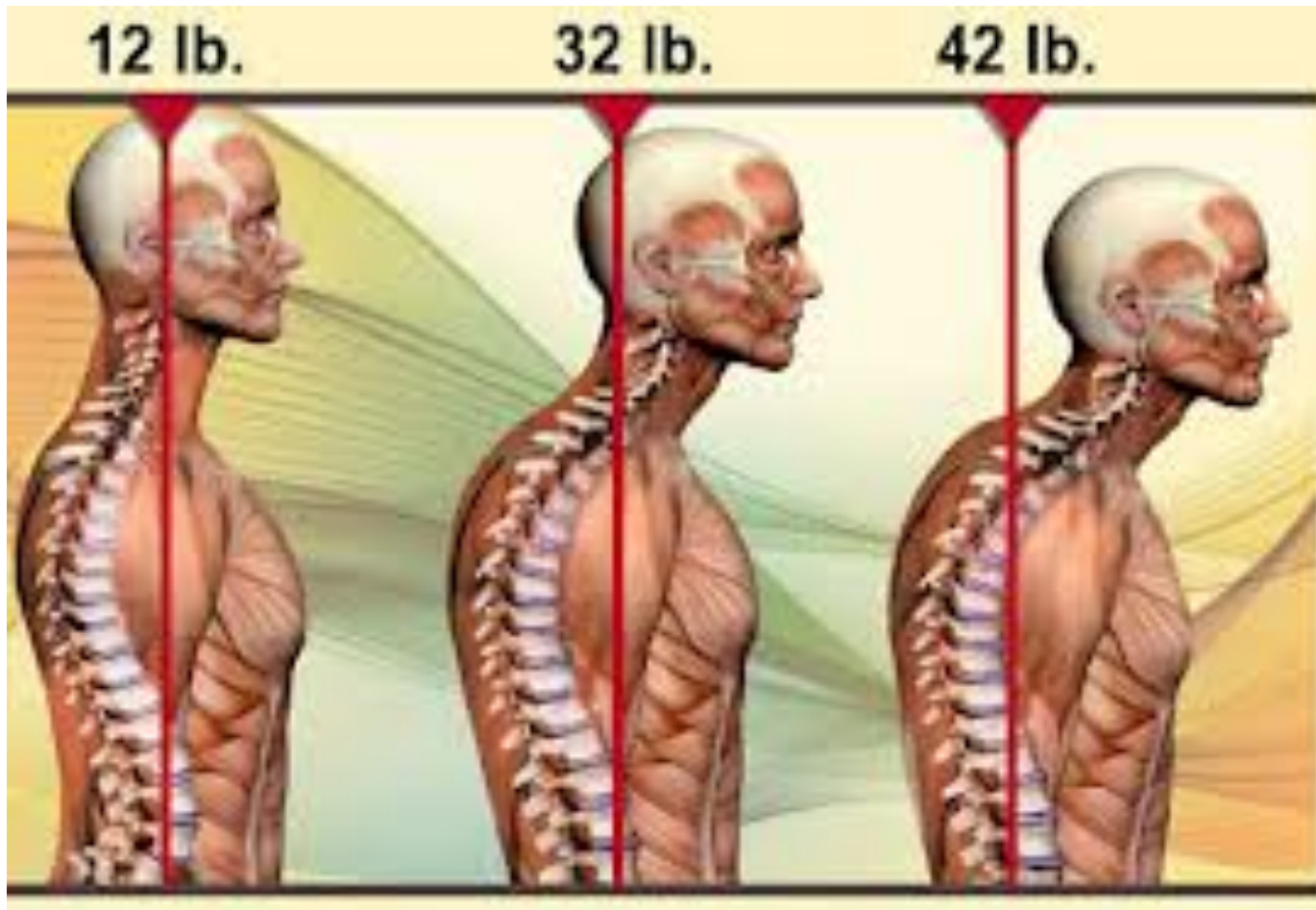
- Complex interplay of core (neck to hips) structures
- Improve core strength and stability so arms and legs work more efficiently (with less effort)



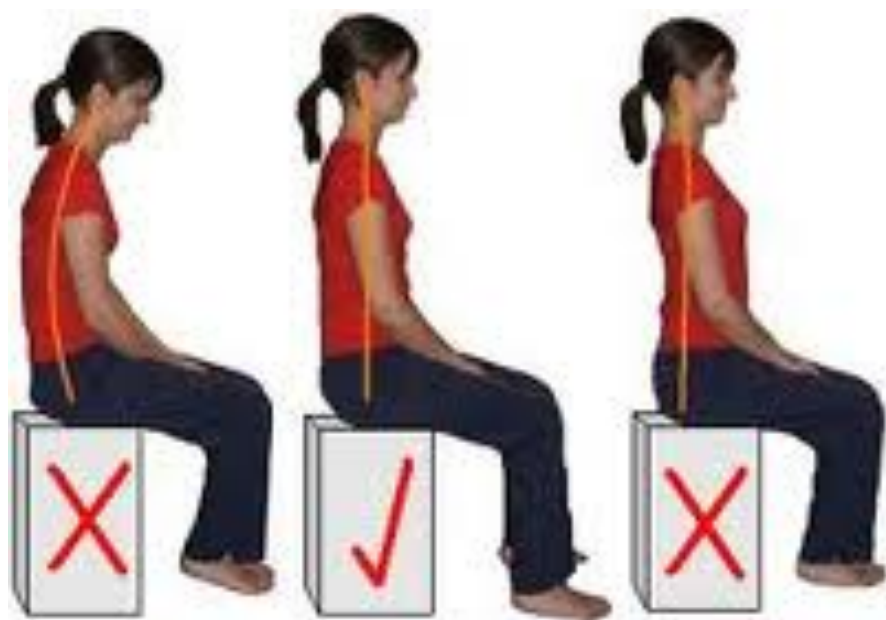
Spinal alignment is KEY for good function AND energy conservation



Do you have a heavy head?



With the spine is poorly aligned, the weight of the head is much greater and requires more energy to support (center and right image). Good spinal alignment should be practiced **ALWAYS**. When viewing from the side, the ear, shoulder, hip, knee and ankle should be in a straight line. Apply correct spinal alignment to movement-walking, sitting, driving a car, etc.



HOW DO YOU STABILIZE YOUR CORE?

**Warm-up always begins with belly
breathing**

(thru your nose, 4 seconds in, 6-8 seconds out)

***HINT: Belly breathing is useful for pain, fatigue,
anxiety, depression, healing, general rejuvenation***

After belly breathing-
5 simple steps to align your core

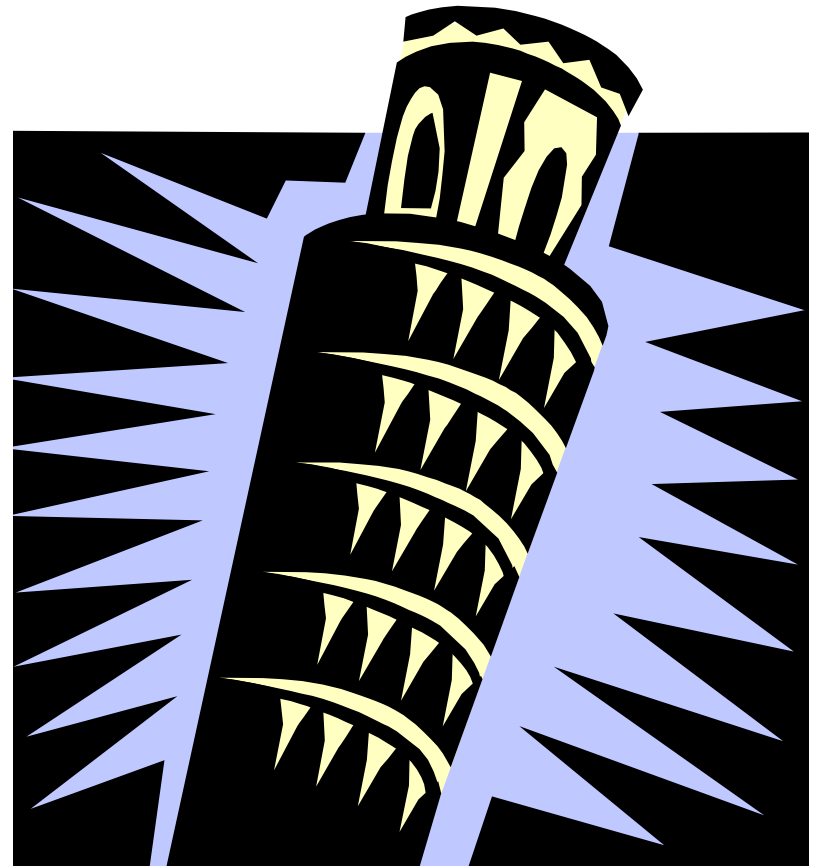
- 1 Contract pelvic floor
- 2 Draw-in / brace *“belly button toward spine”*
- 3 Raise ribcage / *“umbrella your diaphragm”*
- 4 Slide shoulder blades / shoulders back & down
- 5 Retract chin

STEP 1

Contract Pelvic Floor

A strong core requires a stable base

- A soda can without a bottom would easily flex or collapse with pressure or force
- The base of your core is the pelvic floor



How do you activate the pelvic floor?

- **Women:** Kegel exercises
- **Men:** Raise your jewels
- *These are the muscles that stop the flow of urine*



Give it a try!

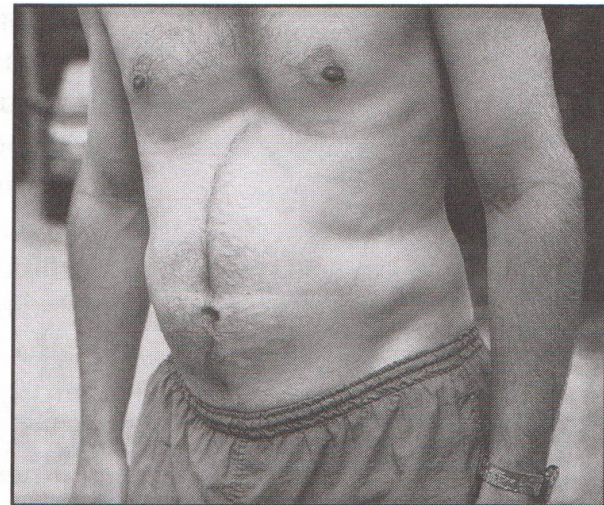
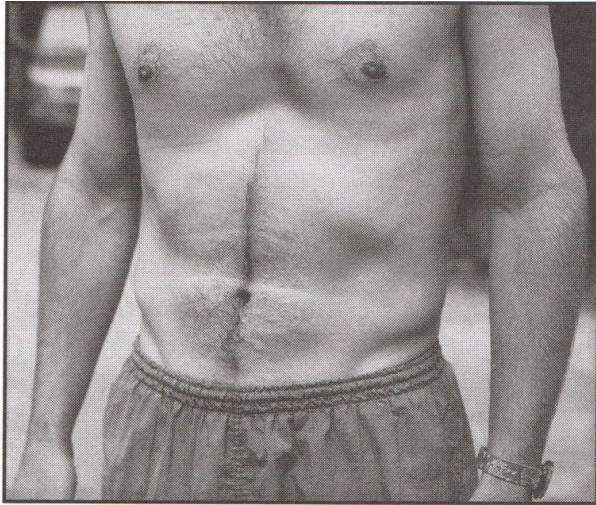
- Stand or sit up
- Envision your pelvic floor as an elevator
- Go up from lobby to 1st floor
 - (don't squeeze butt muscles)
- Go back to lobby
- Go to 1st floor
- Go to 2nd floor
- Go to 1st floor
- Back to lobby
- Now try 5 short, quick contractions
- If you can do this, you've found your pelvic floor!

STEP 2

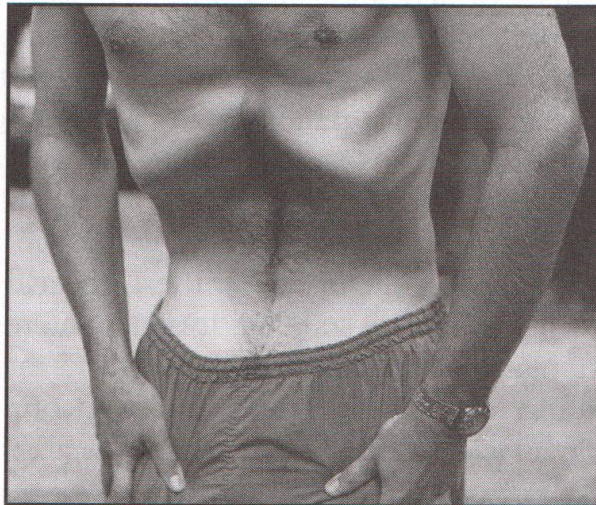
Draw-In *or* Brace

(draw belly button toward spine)

What not to do!



b



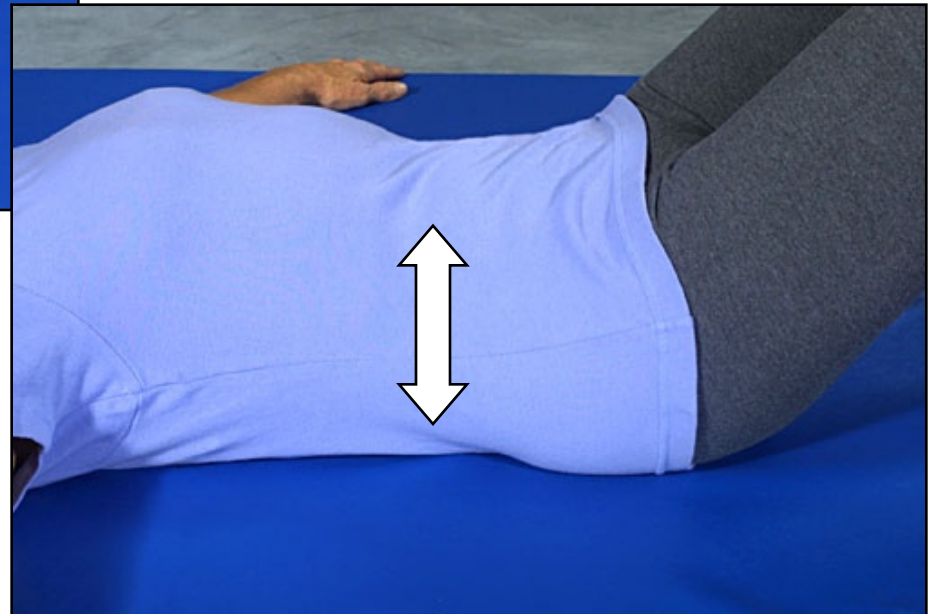
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Find pelvic neutral

(this is when your pelvis is neither tilted forward or backward)



Draw-in/Brace



STEP 3

Raise Ribcage

or

“Umbrella” Diaphragm

(Breath in and lift ribs upward toward ceiling)



Back Extension (“the Superman”)

Good exercise to strengthen back and lift ribs



Start by lifting one arm and opposite leg – hold 3-5 seconds, repeat 3-5 times, rest 1-2 minutes, then repeat

Progress slowly to 10 second hold, then progress to lifting both arms and legs

STEP 4

Slide “blades” together

or

Shoulders back & down

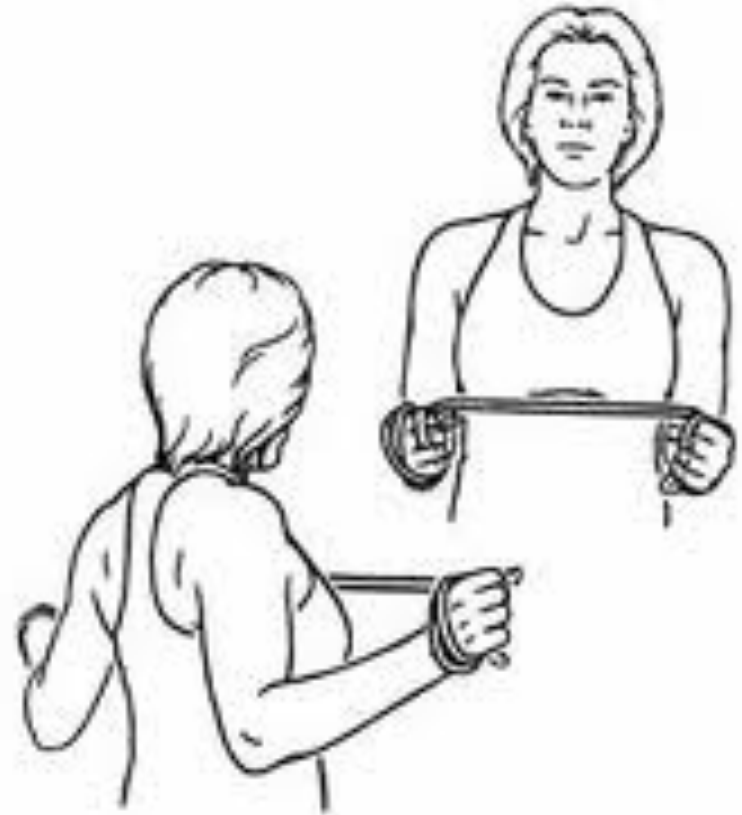
Slide blades together



Shoulder blade (scapular) retraction exercises



This is an advanced exercise on the ball.
Begin this exercise face down on floor.



Keep shoulders relaxed and down

STEP 5

Retract chin

Align chin, shoulder, hip, knee, ankle

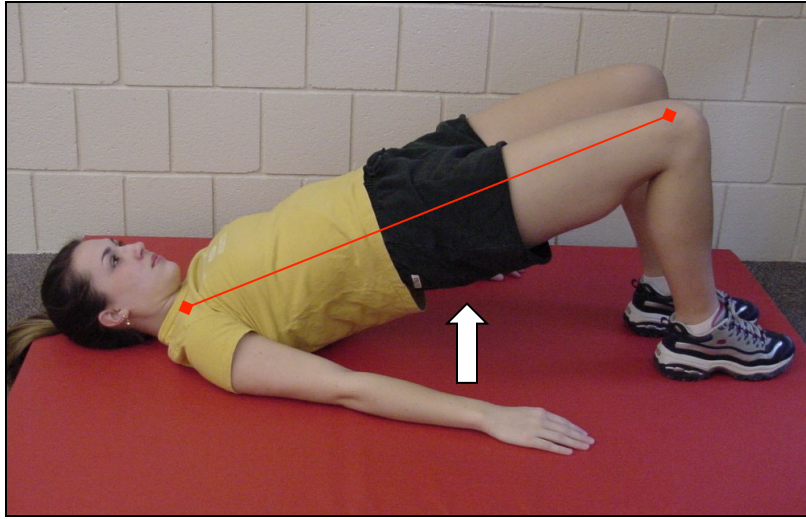


Young children have naturally correct spinal alignment



Sample core stability exercises





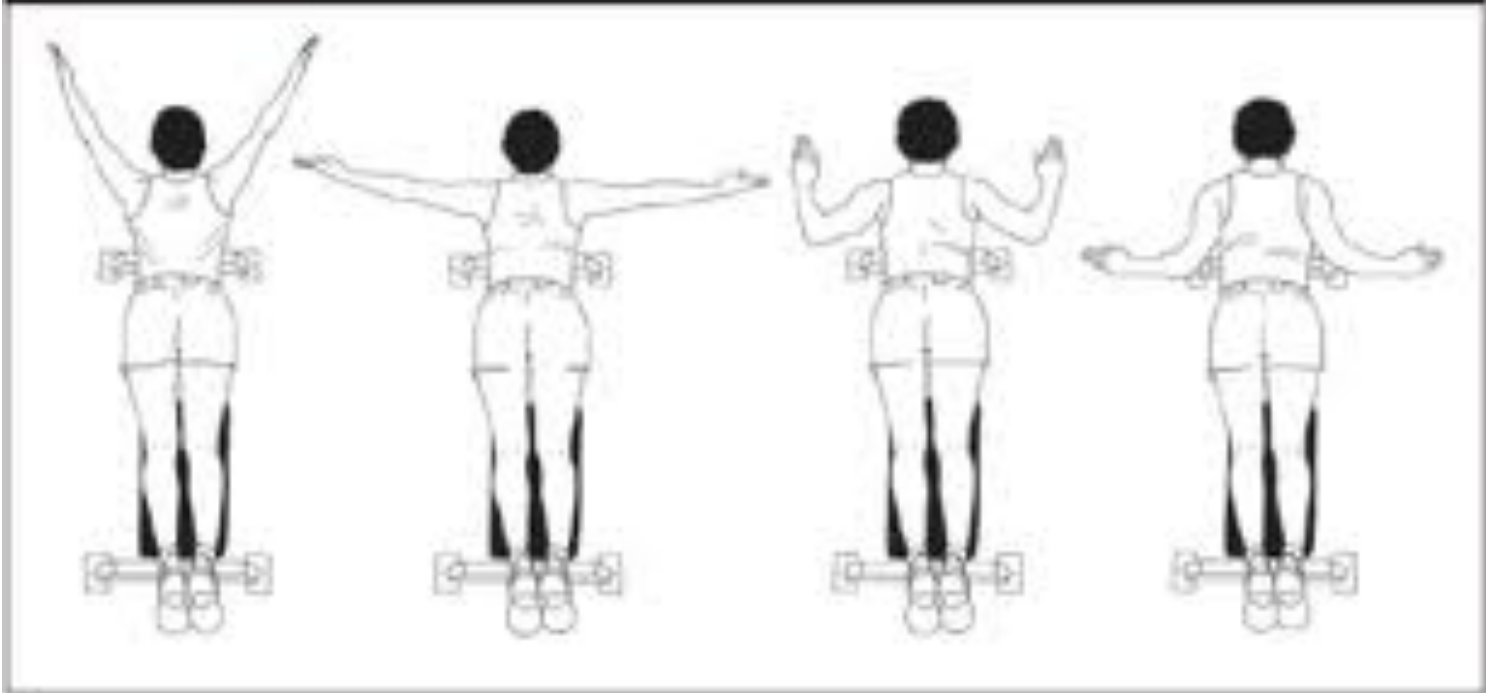


The Alphabet exercises

You can do these!

Face down on floor

Figure 1: YTWL



Physical activity progression

(each stage may take 3+ months)

- Stage 1: Stretching & **CORE Stability**
- Stage 2: Stretching with Resistance Activity
- Stage 3: Dose Controlled Interval Activity
- Stage 4: Maintenance

Goal: *Improved Function*

When Structured Physical Activity Does Work

- **Develop Strength & Flexibility**

- Activity Progression Goal: 1x4 reps increased to 2x8:
 - Breathing; Step-ups, wall push-ups, modified chair dips, toe raises, CORE stability
 - **3 months:** *“Feel stronger, more flexible and able to get around better.”*



- **MONITOR** responses, recovery, symptoms
- **MODIFY** accordingly

When Structured Physical Activity Does Work

- **Maintain & Add Stair Intervals**

- Functional goal: go downstairs without PEM

- HR monitor: 1 floor, rest on landing

- **3 months:** *“I now am able to get out and accomplish tasks without a serious relapse!”*

- **MONITOR** responses, recovery, symptoms

- **MODIFY** accordingly



Activity Biofeedback



- **Monitor Heart Rate**

- HR at Anaerobic Threshold
- Interval Activity
- Daily Activities
- Perceived Exertion Scale













Physical activity monitors

(you need one that measures heart rate)

| Name | Fitbit Surge | Basis Peak | Mio Fuse | Fitbit Charge HR | Garmin Vivoactive | Fitbit Charge | Garmin Vivosmart |
|--------------------|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |
| Lowest Price | \$249.95 Amazon | \$199.99 Basis | \$149.00 Amazon | \$149.95 Amazon | \$249.99 Amazon | \$124.99 Amazon | \$149.99 Amazon |
| Editor Rating | | | | | | | |
| Device Type | Wrist Band, Sports Watch, GPS | Wrist Band, Sports Watch | Wrist Band, Sports Watch | Wrist Band | Sports Watch | Wrist Band | Wrist Band |
| Display Type | Monochrome LCD | Monochrome LCD | Dot-matrix LCD | OLED | Dot-matrix LCD | OLED | OLED |
| Compatibility | Windows, Mac, Android, iOS, Web | Android, iOS, Web | Android, iOS | Windows, Mac, Android, iOS, Web | Windows, Mac, Android, iOS | Windows, Mac, Android, iOS | Windows, Mac, Android, iOS |
| Heart Rate Monitor | Yes | Yes | Yes | Yes | No | No | Yes |
| Sleep Tracker | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Battery Life | About 5 days with continuous heart rate; 5 hours with GPS | About 4 days | About 7 days | About 5 days | Up to 3 weeks, or 10 hours in GPS mode | About 10 days | About 7 days |

<http://www.pcmag.com/article2/0,2817,2404445,00.asp>

Rating of Perceived Exertion Chart (Cardiovascular Endurance)

| | | |
|-----|---|--|
| #10 |  | I am dead!!! |
| #9 |  | I am probably going to die! |
| #8 |  | I can grunt in response to your questions and can only keep this pace for a short time period. |
| #7 |  | I can still talk but I don't really want to and I am sweating like a pig! |
| #6 |  | I can still talk but I am slightly breathless and definitely sweating. |
| #5 |  | I'm just above comfortable, I am sweating more and can talk easily. |
| #4 |  | I'm sweating a little, but I feel good and I can carry on a conversation comfortably. |
| #3 |  | I am still comfortable, but I'm breathing a bit harder. |
| #2 |  | I'm comfortable and I can maintain this pace all day long. |
| #1 |  | I'm watching TV and eating bon bons. |

Perceived exertion scale

(How hard to you feel you are working?)

Stay here during exertion

When Structured Physical Activity Does Work

- Empowerment
- Improved Quality of Life
- Gives you sense of control
- Off the roller coaster
and off the couch



Energy conservation a must!

- Pacing
 - Rest breaks (1:3 or 1:4 work:rest)
 - Example: exert 20 seconds, rest 60-80 seconds
- Body Position
 - Sit vs. stand (choose sitting with spine aligned when you can)
- Joint Protection
 - Assistive devices
- Activity Planning
 - Balance light and heavy tasks

Top 10 Energy Saving Tips



10. Make bed while in it...or not at all



- It just takes a flip of the corner to finish making the bed

9. Take it with you

- **Use a basket / backpack**

- Phone, water, tissues, remotes, paper/pen etc.



- **Take it from bed to chair or wherever you go**



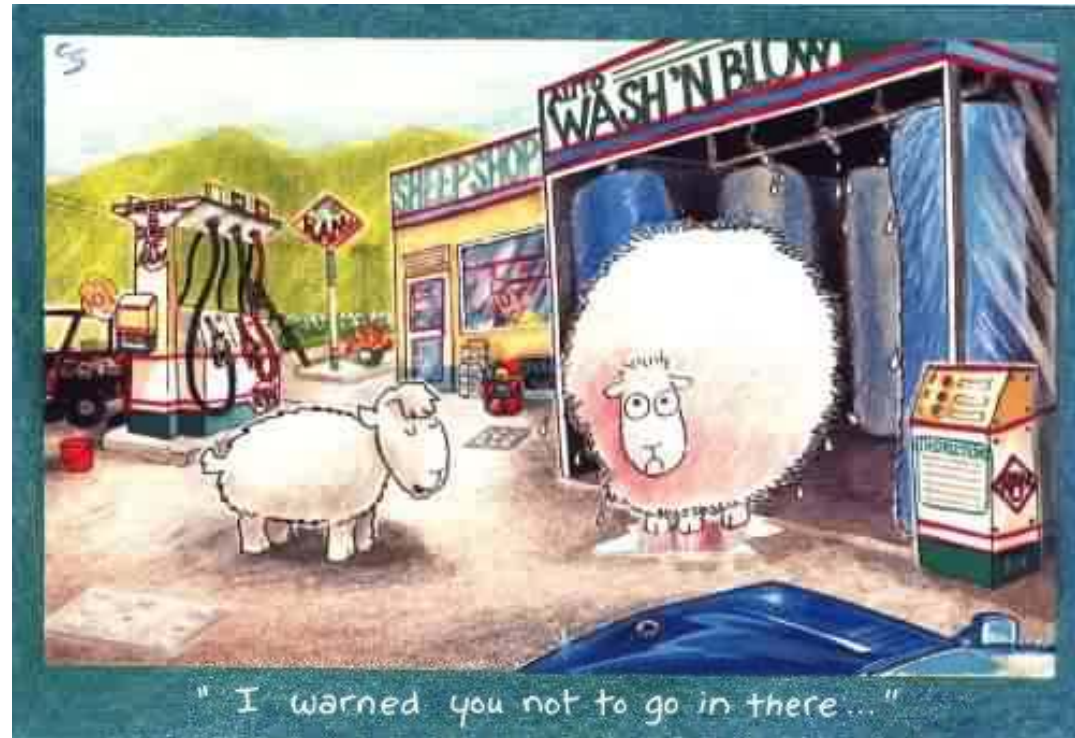
8. Shower sitting down

- Shower chair or plastic outdoor chair
- Terrycloth robe so you don't have to towel off



7. Simplify clothing and makeup choices

- “Wash and go” hairstyle or one that needs little extra care.
- Wrinkle free clothing



6. Use an answering machine



- Monitor incoming calls
- Talk when you wish to and are able

5. Pack groceries smart

- Have perishable items packed separately
- Put them in the refrigerator or freezer right away
- Other groceries can wait to be unpacked
- Use grocery list to save time, energy
- Find a store that delivers



4. Cook Ahead

- **When able, prepare foods for use in more than one meal - such as a roasted chicken or cooked beans.**
- **Plan simple, few-ingredients, one pan, or slow-cooker meals**



3. Use a disabled parking placard



- Application from state Department of Motor Vehicles (check website)
- Signature from health care provider.



Top 10 Energy Saving Tips

1. Learn to say "no" or "yes"

- **"No"** to energy zappers
- **"Yes"** to help when you need it

2. Prioritize

- Plan what you most want to accomplish
- Balance rest with activity
- Sit or lie down whenever possible

KEY Concepts

- Appropriate physical activity is movement from which you recover (*1:3 or 1:4 work:rest*) – ***No PEM!!***
- Physical activity needs to be restorative physically & mentally
- Match physical activity program to function
- Focused / nose breathing – don't tense (AKA belly breathing)
- Make room for structured physical activity in place of another daily activity

No more FLARES!

- 1. Think circularly not linearly for all ADLs
(*exertion, recovery, exertion, recovery...*)**
- 2. Acknowledge energy / activity limitations**
- 3. Improve / maintain CORE stability**
- 4. Structured physical activity to gradually improve physical function**
- 5. Use energy conserving strategies always**