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FUNCTIONAL 4®

Exercise and activity for healthy aging

International Council on Active Aging ICAA™

Contents

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Sensational activities that improve balance

by Sue Scott, MS

For most of us, balance happens naturally, while we're busy doing other things. But achieving and maintaining balance is never truly simple. To facilitate even a simple goal, like walking across a room, many systems must work smoothly together. Our balance system continually anticipates, interprets, learns from, monitors, coordinates and responds to ever-changing feedback from multiple sources, including our bodies, the environment and our will. With all of this dynamic interconnectedness, it is no wonder balance issues are complicated.

Balance difficulties, also called postural instability, commonly have multiple causes, especially in older adults. A partial list includes muscle weakness, joint stiffness, postural asymmetries, gait abnormalities, arthritis, cognitive impairment, fear of falling, vestibular dysfunction, peripheral artery diseases, poor vision, difficulty with sequential movement, poor sensory integration, medications and multiple medications (Rose, 2003; Myers et al., 1996; Salkeld et al., 2000; CDC Fact Book, 2001).

Exercise training cannot positively affect all the items on that long list. But re-read it and ponder just how many items can be positively impacted with exercise training, thereby helping improve balance and mobility in older clients. It's great news there are so many ways to help!

This article will give you fun and creative activities to train balance skills from the ABLE Bodies® balance training program, a multimodal exercise program adapted for older and frailer adults. The program follows American College of Sports Medicine and American Heart Association guidelines (Mazzeo et al., 1998; Nelson et al., 2007). In 2004, a randomized controlled trial found ABLE Bodies' techniques significantly improved balance, gait speed, strength and flexibility in frail and older adults (Scott & Rosenberg, 2005).

Multimodal, or multiple-component, training simply means weaving many types of training together into one comprehensive exercise program. The toolbox of activities used in a multimodal program can be expanded or narrowed, depending on the needs of participants. Offering a wide array of activities to address multiple dimensions of balance trains for a broad scope of balance-related deficits and abilities, typical of residents in retirement communities and assisted living facilities.

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Glossary

Perturbation
Disruption; a disturbance in motion.

Proprioception
Ability to sense the position and motion of the body.

Somatic
Relating to the body.

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In group interventions, multimodal programs offer something for everyone in the group. On the other hand, trainers and instructors working one-to-one might best serve their clients with a narrower focus, specific to their individual needs.

Re-tooling exercise training to be more balance-specific and multi-faceted will make your classes and training more effective, engaging, interactive and fun. Balance training will help more frail older adults perform activities of their daily lives with less effort, more speed and increased comfort.

Exercise specificity

The principle of exercise specificity can be applied to balance training. Effective exercise interventions should be as specific as possible to the systems involved and the desired goals, either in part or in whole (Mazzeo et al., 1998; Day et al., 2002; Lord et al., 2003; Rose, 2003; Myers et al., 1996; Shupert and Horak, 1999).

There are two specific balance training goals:

1. Train with activities designed to enhance everyday kinds of function.

2. Target specific and multiple balance systems.

Functional goals for frail adults are activities of daily living (ADLs), including getting up from a chair, walking, changing speeds or directions, avoiding obstacles and reaching for objects. Improve ADLs with training to improve functional range of motion, posture, core and leg strength, motor coordination, endurance and balance confidence (Tinetti et al., 1988; Rose, 2003; Myers et al., 1996; Barnett et al., 2003; Province et al., 1995).

The specific balance systems to target with exercise training for this population include the three sensory systems for balance (vision, vestibular and somatosensory) and the overlaying, integrating central and automatic system (see "The sensory systems" on page 3).

Components of balance

The ABLE Bodies tools for training balance are physical activities that primarily address these components:

Flexibility enables better posture and more efficient movement.

Posture provides better alignment over the body's base of support.

Core stability braces good posture and keeps us more balanced.

Strength makes daily tasks and balance easier.

Endurance sustains one task or many activities over the course of a day.

Cognitive components keep participants engaged and learning, which can also benefit balance, balance confidence and exercise compliance.

Using physical activities as tools to target, challenge and integrate these components can help trainers and instructors make their exercise more functional, somatic, sensory and engaging. In other words, more effective!

Ideally, exercise classes will have better balance results with the use of these techniques:

- "Sensation-al" cues: Cue for sensory responses, getting them to tune into their senses. "How, where did you feel that?" "What changes did you notice?"

- Cognitive skills: Concepts, discussions, planning, problem-solving and decisions; as well as adding tasks.

- Interaction: Solicit and require their input.

- Mentally and physically engaging tasks: Keep them interested and doing their best.

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The sensory systems

Visual system

The ability to see provides visual references to the surrounding environment; that is, vision gives us object-to-object information about where the body is relative to other objects. As humans, vision is our dominant system; we use vision to guide and navigate.

Teaching tools: Work with your participants to set and maintain visual targets when choosing a path, crossing a room or negotiating through obstacles. Cue them to look ahead at a goal, or to keep their eyes at the horizon. Use flashlights or laser lights for more fun and effect. Visual targets are powerful and very effective balance training tools.

Vestibular system

The inner ear system responds to gravity, giving self-to-earth references; that is, the vestibular system tells us how our head is positioned relative to earth. Head turns, tilts or dips activate the vestibular system so we can maintain or correct balance. For an individual with compromised or dysfunctional vestibular function, a simple head turn can be a nauseating challenge. We rely most on this system when our eyes are closed or the room is dark.

Teaching tools: Practice slow head turns while maintaining gaze on a stable object. Dim the lights (reducing visual input) or use balance pads (reducing somatic input), or both. When standing on a balance pad in a dim room, the participant must use input from the vestibular system.

Somatosensory system

Soma comes from the word "body," and *sensory* refers to the body's role in sensory perception. The somatosensory system gives us self-to-self references. Its proprioceptive system of mechanical receptors is responsive to pressure, touch, stretch, force, temperature, position, changes in position and rates of changes in position. This is the very important sensory system for balance control.

Teaching tools: Use "sensational" cues that get participants to learn to feel for information through their bodies. Encourage participants to *notice* where they feel an activity and how the movement changes their awareness of balance. Tai Chi movements are effective somatic training tools because of their attention to weight transfers.

Central and automatic systems

The central and automatic systems continually monitor and integrate information and feedback from these systems, and others, to direct our motor system.

Teaching tools: Add distractions. For example, design a get-up-and-go relay where participants carry a tray, or step over an object or recite the Pledge of Allegiance while en route. Or, while walking or balancing on a balance pad, ask participants to count backwards, sing a song, read wall signs or toss a ball from hand to hand.

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- Fun: Keep them coming back.

- Functional and multi-dimensional tasks that are specific to real life.

So, enough with biceps curls already! On our horizon now is exercise programming that can utilize or isolate all the dynamic interconnectedness between balance systems and function. It's a broader brush, so to speak, that you'll use for training function and balance.

Add sensation-al to activities

You can start making your activities more sensory by simply adding sensational cues to what you already do. Use sensory words like these:

Feel
Notice
Where
Stretch
Lengthen
Absorb
Push
Pull
Focus your vision on . . .

Frequently ask participants how or where they feel an activity: Where do they feel that stretch? That exercise? Can they sense if the ground is slanted, or flat, soft or firm by just standing or walking on it? Can they feel their weight shifting from one position to another? Is pressure from their center of gravity over their toes, heel or on which foot?

Convince them that, even without vision, our bodies know where our limbs are and what they are doing. Convince them they will know where their foot is without looking at the ground.

The ABLE Bodies balance training activities that begin on the next page are ones you can explore here and add to your own balance training toolbox. Once you try them, feel free to adapt or add to them in ways that work for you.

Start using sensational balance training

We've come a long ways from the days of using only one mode, strength, for training balance deficits. The adage, "Improve strength, improve balance" is still fair reasoning (Salkfeld et al., 2000; Rose, 2003). But we can do more.

Good balance involves functional ranges of motion for efficient movement, posture, core stability, strength, endurance and many balance systems working together. To be maximally effective and specific, today's balance tools should involve and target those same important components.

Now it's your turn! In your own inimitable way, use these ideas to begin to re-tool your own programs and activity selections for better balance. Exercise science has told us what should be included in balance training and why: Physical activities that are comprehensive, linked, balance-specific, engaging, fun and yes, sensational!

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Editor's note: In August, ABLE Bodies Balance Training (Human Kinetics, 2008) will be published with 130 activities and links to a website with downloadable handouts. For more information, visit www.humankinetics.com.

In December, Sue will present agility training for people with Parkinson's disease at the International Council on Active Aging Conference 2008.

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Appropriate for

Getting started

Needs a little help

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Conceptual flexibility: Venus di Milo Arms

Getting older adults to "extend through your trunk" or "lift your ribs" to lengthen the spine is difficult. This imaginative exercise invites participants to pretend they are the famous sculpture, Venus di Milo—which has no arms! Without arms they'll certainly discover untapped ranges of motion available to them from their shoulders and trunk.

Venus di Milo Arms is a conceptual flexibility activity used to illustrate a larger point and demonstrate the utility of a healthy range of motion. Once learned, it's easy to recall as needed. This activity is a cognitive tool, because participants draw conclusions and associate what they learn with what they already believe.

And because Venus Di Milo Arms is also a physical activity, it will help ensure participants learn with both mind and body.

Take-home message

Flexibility, range of motion and function go arm in arm (Get it? Venus di Milo Arms?). Participants will begin to notice how much more distance they can reach when they involve full range of motion from their shoulders.

The start

• Ask participants to pretend for a moment that they have become Venus di Milo, the famous statue with no arms
• Instruct them to cross their arms across their chests, or to place one arm around their waist in front and one around their waist in back.
• Ask them to sit tall, away from the back of their chairs.

The moves

• Imagine a light cord is hanging just above you and you need to reach for it without arms. You can only reach with your right shoulder.
- *How high can you reach?*

- *Can you feel your ribs lifting and stretching, too?* (perfect!)
- *Can you feel your skin moving and stretching?*
- *Do you notice your spine lengthens?*
- *How much of a reaching distance do you get from just lifting the shoulder?* (4-6 inches)

• *With your arms still across the chest or wrapped around your torso, reach for a book on an imaginary table in front of you. Again, you can use only your shoulders and ribs to get the most distance you can.*
- Do they notice how much forward reaching distance their shoulder's range of motion provides?
- Reach forward with the other shoulder.

• Now, reach backward (arms still against torso) as if reaching for a pair of sunglasses on a table behind you.
- Reach, only stretching out through the shoulder and chest.
- Reach back with one shoulder.
- Reach back with the other shoulder.

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Models: Sue Cameron (age 82), Chuck Lutton (age 93), Betty Ashford (age 87), Bob McGill (age 90)

• Help participants explore the circumference for how far shoulders can reach. Cue them:
- *Reach up, down, and backward with your shoulder, ribs, chest and back.*
- *Do it again.*
- *What are you beginning to notice about shoulder flexibility?* (There's probably 6-8 inches of additional range of motion available from our shoulders.)

• Put your arms back on—pop, pop!
- With your arms back on, reach one hand up, toward the imaginary light cord.
- Add your Venus di Milo arms to reach even farther, stretching up with your shoulders and rib cage.
- *Did you get more distance reaching when you added Venus di Milo arms?* (for sure!)
- *Did you notice your ribs and shoulders also lifting upward?* (perfect!)
- *Reach forward and use Venus di Milo arms to add inches to your reach. Is that better?*
- *Reach back, Venus di Milo style. Is that better?*
(Sure it is! There is great range of motion available from our shoulders, ribs, back and chest.)

Photography courtesy of Human Kinetics Publishers.
Reprinted, with permission, from S. Scott, 2008, ABLE Bodies Balance Training, (Champaign, IL: Human Kinetics)

Posture: Take a step to the tipping point

Posture is the way our body aligns itself over the earth. Alignment affects balance whether a person is standing still or moving. The tipping point is where a person feels the need to take a self-arresting step forward to maintain balance and keep from falling.

One example is explored here: How slouched, forward-leaning posture can slow the initiation of a needed quick step. This activity lets participants use their own bodies to explore how stepping and walking mechanics can be improved with only changes in posture.

Take-home message

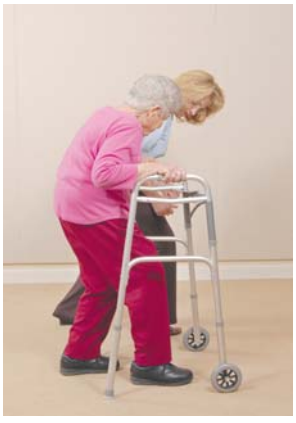
Quick steps and walking are easier with upright posture.

Demonstrate

• Stand in front of the class and assume a bent-over standing position. Display a forward lean, with rounded shoulders that hunch forward, a slouching back, a lowered head and bent knees.
• Tip yourself further and further forward until finally, a self-arresting forward step is needed to prevent your forward fall.

Keep it safe

• At the beginning, not all participants will be comfortable leaning until they are close to their tipping point, and that's fine. They don't have to do that part; they either watch the others or make only small changes in their postures. The activity will still work.
• Provide plenty of balance supports in front or alongside them (walkers, sturdy chairs, handrails, your hands).



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The start

• Participants assume their own versions of the bent-over position—head lowered, back rounded, knees flexed.
- Can they safely lean a little forward, too?
- Do they notice that this position shifts their weight towards their toes? (It will.)
- At your cue, they take a quick, self-arresting safety step.
remember how fast they were able to get that stepping leg out in front.

The moves

• Take a step from an upright posture.
- Ask participants to stand with an upright, taller posture.
- Their body weight is equally distributed between both feet.
- They take a deep breath and lift their spines tall, so that shoulders are over their hips.
- Cue them to pull their shoulder blades back and down, then brace that good posture by tightening their midsection as they exhale.
- Ask them if they notice that in this position their weight is centered further back on their feet (as compared to the slouched position).

• From this tall perspective, invite participants to lean forward, towards their tipping point, just a bit.
- Their tipping point is where they feel the need to take a self-arresting step forward. Cue them to lean from their ankles, not from their hips.
- Can they feel themselves approaching that tipping point?
- Pull back to upright and do it again.
- This time, tell them to go a little further and when needed, take a quick self-arresting safety step.
- Was it much quicker to step from a position of upright posture? (It should be lots quicker!)
- Repeat the two postures to compare the differences for clarity.

• Walk in a bent-over position.
- Participants begin walking normally.
- Have them assume and walk in the bent-over posture introduced earlier.
- Ask them to notice how their leg swings feel.
- Are the leg swings easily initiated?
- Or, are they a little restricted by their posture?

• Walk in an upright position.
- Ask participants to walk as tall and upright as they can.
- Do they feel healthier and stronger walking this way? (Sure they will!)
- Cue them to notice how their leg swings feel now. Are they easier? (for sure!)

• Alternate bent-over and upright postures.
- For comparison, alternate the two walking postures.
- Focus on the ease of leg swings when walking taller; this is probably the biggest change they will feel.
- Do a few repetitions of each posture.
- Cue out loud, as they are walking: Upright, . . . Slouch, . . . Upright, . . . Slouch.
- Ask for their thoughts: Which posture works best?
Which do they prefer? Why?

Model: Estelle Moskowitz, (age 85)

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Core stability: When push comes to shove

When Push Comes to Shove is fun, social, interactive and useful. Participants work with a partner. One participant plays the role of Lucy Goosey, who has almost no backbone. The other is Mountain Man, whose core stability renders him almost immovable, like a mountain.

Participants learn about core stability in a very hands-on way. They will be less perturbed by jostling crowds or other unexpected changes with braced posture. Alongside any number of core strength activities, When Push Comes to Shove can help participants appreciate the value of good core stability.

Take-home message

Simple head turns or arm swings while walking, being jostled in crowds or recovering from a misstep can disturb balance. A stable, strong core helps steady the body.

Demonstrate

• Let participants know ahead of time what to expect. With their permission, you or a partner will give some of them little pushes—little perturbations. You'd like them to take their pushes standing up. However, they can choose to remain seated. (Participants sit at the edge of the chair to make the perturbations more effective. From there the activity is the same.)
• Provide a demonstration with a volunteer of both the Lucy Goosey and Mountain Man scenarios. If you have participants who will remain seated, then demonstrate both standing and seated versions.

Keep it safe

• Before anyone does any pushing, demonstrate what you mean by gentle pushes. Remind challengers to be quick and firm, but give gentle small shoves.
• Provide adequate balance support. Use a walker in front, a sturdy chair behind, or a handrail beside them.
• Participation can be observation only, if they prefer.

The start

• Partner participants by counting them off 1, 2, 1, 2; or by letting them pick partners themselves.
• Have the partners designate one to be the challenger who will do the pushing and shoving, and the other to play the roles of Lucy Goosey and the Mountain Man.

The moves

• Introduce Lucy Goosey.
- Participants stand in front of a sturdy chair or inside a walker, with feet shoulder-width apart.
- Every Lucy Goosey becomes loose all over, spineless, totally relaxed and slumped.
- Walk up to a Lucy and demonstrate a small shove against one shoulder. The person will probably reel backwards a bit, all the way from their shoulder through their hip. No core stability there to save Lucy.
- Ask the group: Can they see that from even your gentle shove, the whole torso reeled backward, with a bit of a twist, even?
- Say, *It didn't take much of a shove, did it?*
- Lucy seems a bit vulnerable, don't you think?

• Now they should try it. Have the challengers give their loosely standing Lucy Goosey a firm, gentle shove on one shoulder and notice what happens.
- Do it again and observe again.
- Keep pushing Lucy Goosey using little shoves from the front, the side, and even from the back. Push at the hip, as well.
- Have participants observe and remember what happens. They are learning experientially.

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• Meet the Mountain Man.
- Now the Lucys turn into Mountain Men. Cue each Mountain Man to stand with feet parallel, shoulder-width apart and knees soft. (Soft knees help absorb perturbations.)
- Mountain Men stand tall, with shoulders over their hips, abdominals braced, ribs lifted and spine lengthened.
- Ask the Mountain Men to take in a deep breath.
- As they exhale, cue them to draw their shoulders blades back and down and to push their arms and palms down toward the ground. They imagine that with their exhalation they are planting themselves into the earth—*Inhale, pull tall, exhale, harumph*!
- When they have blown all the air out and look stable, their partner gives them a firm, quick push on one shoulder.
- Challengers give the push, then ask: "How'd that go? Any differences?" (The Mountain Man shouldn't be near the pushover that Lucy was.)
- Get them to do a few more pushes from the front, side, back and at the hip.
- Watch, observe, compare the two examples and let them do the learning.

• Partners switch roles and repeat the activity.

Points for discussion
- Which character would do best in a crowded mall?
- Whom would they prefer to take to a party? (just being funny)
- Ask what makes them stable. (It's the braced torso, soft knees, aligned posture, and determination.)
- Do they sense the value of core stability?

Balance and mobility: Walk the line

Walk the Line activities use different line patterns to improve balance. Straight and Narrow is a 3-line almost-tandem walking activity that improves lateral balance and strengthens hip abductor/adductors. Walking with a narrow base of support is a good practice for dynamic balance. It also facilitates using visual targets.

Take-home message
Improving dynamic balance helps you get where you want to go, safely.

Setup
• Mark the ground with tape or chalk (outdoors). Use bright colors that provide good contrast to the floor color.
• Position three 12-foot lengths of tapes to create each walking path. The two outside lines are placed about 10-12 inches apart. The third line goes down the center. (See the photo on page 10 for the layout.)
• To make lines more distinctive, use a different width and color for the center line and matching tape for outside lines.
• For balance support, tape a few sets of the three lines beside a handrail. If you do not have a handrail, consider using a row of chairs. Otherwise, plan to be available yourself to hold hands.

The moves
• Give participants a choice. They can walk this path either by staying between the two widest lines or by walking on the center line.

• First pass: One at a time, with you supervising.
- Let them walk the lines any way they choose. They can try it a couple of times if they like.

• Second pass: Walk the Line with their abdominals braced and shoulder blades back and down.
- Tell them to combine Push Comes to Shove and Erect Posture styles of walking.

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Models: Sue Cameron, Robert Grimsley (age 82)

- Ask if the posture changes help them keep their balance.
- Ask: *Does walking tall, braced and more upright help?*

• Third pass: soft knees and arms to side.
- They Walk the Line keeping their knees soft and holding their arms out to the side.
- Does it make a difference? (Soft knees really help absorb some of the wobble.)

• Fourth and fifth passes: Experiment with speed.
- Walk the Lines slow and fast.
- Ask them: *Which is easier?* (It will be easier to stay on or between the lines when they walk fast.)

• Sixth pass: Eyes on the prize. Give them a visual target.
- By now, they know this path well. This time, ask them to walk their chosen path with all these accumulating skills together: good posture, soft knees, arms out to the side and reasonably quickly.
- On top of all these fine ideas, ask them to Walk the Line without looking down. In other words, look ahead at a horizon-level visual target. The target can be a spot on the wall, your hand, a prize, or a tempting picture from a magazine.
- Walking the Lines while looking ahead at a horizon-level visual target may be too difficult for some; try to get those to look a little further down the line than they normally do.
- Ask what changes when they use the visual target for guidance. (Easier to stay on track.)

• Review.
- Can they feel how all these skills contribute to walking in a straight line without looking down?
- They can use one, some or all the following techniques to improve their performance on Walk the Line activities:
  -- Torso braced, shoulder blades back and down, ribs lifted.
  -- Knees soft, arms out to the side.
  -- Walk quickly across the path.
  -- Gaze ahead at horizon level.

• Give it more balance.
- Challenge them to try the center line.
- Encourage them to use less support from the handrail.
- Use music. "New York, New York" is a great song for walking the lines. It is amazing how music envelops and guides the whole body.
- Hand them a filled glass of water to hold with both hands. No spilling!

Resources

ABLE Bodies Balance Training
Sue Scott
Book (2008)
Human Kinetics
www.humankinetics.com

Balance training: A program for improving balance in older adults
Susan Bovre, MA
CEU course
ICAA member discount
www.icaa.cc, professional education

FallProof!
Debra Rose
Book (2003)
ICAA member discount
www.icaa.cc, bookstore

Musicophilia: Tales of music and the brain
Oliver Sacks
Book (2007)
http://www.musicophilia.com/

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Rhythm and moves: Waltzing Matildas

Music is wonderful: It evokes memories, emotion and (drum roll, please!) almost "automatic" body movements. These qualities are what make musical activities fun and effective for balance training.

In his book *Musicophilia* (2007), Oliver Sacks, a clinical neurologist, shares evidence that our motor system is linked to our capacity to perceive music. The area in our brains that "perceives, processes and responds to music occupies more terrain in our brains than language."

Enjoyable musical rhythms improve coordination and sequential movement, help an individual anticipate movement, reduce perceived rate of exertion and effort, increase psychological arousal and make the time fly (Harmon & Kravitz, 2007; Sacks, 2007).

Take-home message

Rhythm has a way of prepping a person for movement. It helps us anticipate and coordinate when, where and how to move, almost automatically. In addition, music brings back pleasant memories, can revive old movement skills and makes balance training fun and relaxing.

Keep it safe

• Music volume and cadence should be appropriate. If it is too loud, participants will feel distracted. Too soft, and it's hard to feel the rhythm. Pace should be moderate and inviting, easy to follow.
• Balance support should be ample. Hold their hands or provide an appropriate partner or handrail.

Setup

• Select music from their era that matches the activities you choose. Theme from "A Summer Place" by Percy Faith is an excellent waltz for side-stepping to this activity.
• Cue up music ahead of time and test the volume.
• Pair participants into dance partners. Space them out around the room, so

Models: Chuck Lutton, Hannah May (age 97)

couples can sidestep several times before changing directions without running into other couples.

The moves

• Side stepping with no music.
- Cue partnered participants to do side stepping: Step together step. Step together step, etc.
- Change directions, repeat.
- Cue side steps with bigger steps, almost like side lunges.
- Step with knee bends, then straighten.

• Side stepping with music.
- Turn on waltz music.
- Cue them with the music: Step together step. Step together step.
- Cue them to add a knee bend to each side step for bigger steps.
- Step, knee bends, then straighten; step, knee bends and straighten, etc.
- Let the music be their guide!
- Ask: What changes? They are moving so gracefully. The boring step-together-step movements have become fluid whole-body graceful moves. Instead of moving just their legs, you and they will notice their whole body gets involved: arms, torso, head and emotions.
- It is remarkable and fun to see the transformation.
- Ask if they sense that?

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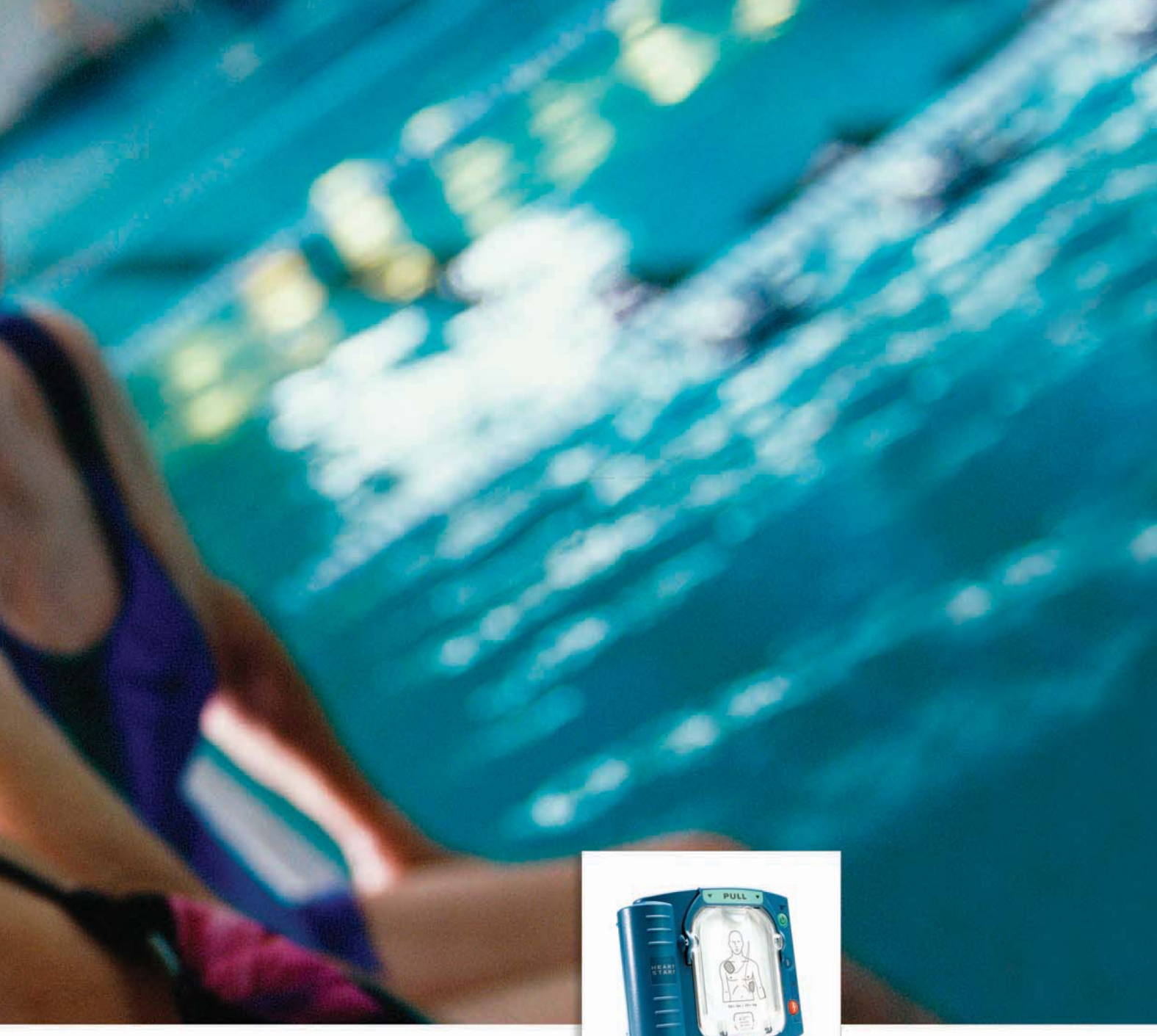

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sense and simplicity

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• Do more waltzing: Step together step.
- Feel the flow. Step together step.
- Notice the whole body creates the movements and feels great!
- Can they feel the sway? Do they enjoy the moves?
- Can they hum or sing or count along?

• Give it more balance.
- Add a step-together-step-turn sequence.
- Cue them to listen for the cues in the music.
- When the music gets them ready, they should: Step together, step, TURN.
- One partner can guide the other with their hands and arms as they turn under.
- Dim the lights.
- Do on a lawn or a large balance mat for a more challenging surface.

References and resources

Barnett A, Smith B, Lord S, Williams M, Baumand A. Community-based group exercise improves balance and reduces falls in at-risk older people: a randomized controlled trial. Age Aging 2003;32(4):407-414.

Berg KO, Kairy D. Balance interventions to prevent falls. Generations 2002-03;26(4):75-81.

Campbell JA, MC Robertson, MM Gardner, RN Norton, DM Buchner. Fall prevention over 2 years: a randomized controlled trial in women 80 years and older. Age Aging 1999;28(6):513-518.

CDC Fact Book 2000/2001. Unintentional Injury From Falls. Department of Health and Human Services: 64.

Chandler JM, Duncan PW, Kochersberger G, Studenski S. Is lower extremity strength gain associated with improvement in physical performance and disability in frail, community-dwelling elders? Arch Phys Med Rehabil. 1998: 79(1):24-30.

Day L, Fildes B, Gordon I, Fitzharris M, Flamer H, Lord S. Randomized factorial trial of falls prevention among older people living in their own homes. BJM 2002;325(7356):128-33.

Gladwell, M. 2000. The tipping point: How little things can make a big difference. Boston: Little Brown.

Harmon, N.M., and L. Kravitz. 2007. The beat goes on: The effects of music on exercise. IDEA Fitness Journal 4 (8):72.

Horak FB, Mirka A, Shupert CL. The role of peripheral vestibular disorders in postural dyscontrol in the elderly. In: Woollacott M, Shumway-Cook A, eds. The development of posture and gait across the lifespan. Columbia: University of South Carolina Press, 1989:253-279.

Lord, S.R., S. Castell, J. Corcoran, et al. 2003. The effect of group exercises on physical functioning and falls in frail older people living in retirement villages: A randomized, controlled trial. Journal of the American Geriatrics Society 51 (12): 1685-1692.

Mazzeo, R.S., P. Cavanagh, W.J. Evans, M. Fiatarone, J. Hagberg, E. McAuley, and J. Startzell. 1998. ACSM Position Stand: Exercise and physical activity for older adults. Medicine & Science in Sports & Exercise 30 (6): 992-1008. Philadelphia: Lippincott, Williams, & Wilkins.

Myers AM, Powell LE, Maki BE, Holliday PJ, Brawley LR, Sherk W. Psychological indicators of balance confidence: relationship to actual and perceived abilities. J Gerontol A Biol Sci Med Sci 1996; 51(1):M37-43.

Nelson, M., W. Rejeski, S. Blair, et al. 2007. Physical Activity and Public Health in Older adults: Recommendation from the American College of Sports Medicine and the American Heart Association. Medicine and Science in Sports and Exercise 39(8):1435 – 1445.

Province MA, Hadley EC, Hornbrook MC, Lipsitz LA, et al. The effects of exercise on falls in elderly patients: A preplanned meta-analysis of the FICSIT trials. JAMA 1995;273(17):1341-1347.

Rikli RE, Jones CJ. Senior Fitness Test Manual. Champaign, IL; Human Kinetics, 2001.

Rose DJ, Clark S. Can the control of bodily orientation be significantly improved in a group of older adults with a history of falls? J Am Geriatr Soc 2000;48(3):275-282.

Rose DJ, FallProof! A comprehensive balance and mobility training program. Champaign, IL; Human Kinetics, 2003.

Sacks, O. 2007. Musicophilia: Tales of music and the brain. New York: Knopf.

Salkeld G, Cameron ID, Cumming RG, et al. Quality of life related to fear of falling and hip fracture in older women: a time trade off study. BMJ 2000;320(7231):341-346.

Scott, S.M. and R.I. Rosenberg. 2005. Methods to improve and maintain balance, mobility, flexibility and balance confidence in older adults. Medicine and Science in Sports and Exercise 37(5) (Suppl):S256.

Shumway-Cook, A., and M.H. Woollacott. 2001. Motor control, theory and practical applications. Baltimore: Williams and Wilkins.

Shupert CL, Horak FB. Adaptation of postural control in normal and pathologic aging: implications for fall prevention programs. J Appl Biomech 1999;15(1):64-74.

Tinetti ME, Speechley M, Ginter SF. Risk factors for falls among elderly persons living in the community. New England Journal of Medicine 1988;319(26):1701–7.

Wagenaar RC, Holt K, Kubo M, Ho C. Gait risk factors for falls in older adults: a dynamic perspective. J American Society on Aging. 2003:26(4):15-21.

Wagenaar, R.C., K. Holt, M. Dubo, and C. Ho. 2003. Gait risk factors for falls in older adults: A dynamic perspective. Journal of the American Society on Aging 26 (4):15-21.

International Council on Active Aging ICAA

Buyer's guide to foam pads and balance discs

If you are considering providing your clients with unstable surfaces to help them improve balance, then you may want to explore two basic tools: foam pads and discs. While there are other products that are very useful for balance training, pads and discs are usually appropriate for people who are just beginning to train on unstable surfaces.

Foam pads and discs can be placed on a chair for people who are seated, or placed on the floor for standing exercises.

Foam pads

Foam pads, also called balance pads, can be shaped as squares, rectangles or ovals. Surfaces tend to be smooth, although some brands add texture for more tactile feedback or ridges to help prevent slipping. Surfaces are probably more noticeable if the person standing on the pad is wearing socks rather than shoes.

Pads used for balance training are soft and pliable, so they have "give." Brands of foam pads differ in firmness or softness. One manufacturer provides color-coded pads with different levels of firmness. Two foam pads can be stacked on top of one another to create more motion.

Many are advertised as "closed-cell" foam, which means that there are many small cavities that are sealed. Foam can be made from a variety of rubber and plastic materials, including ethylene vinly acetate (EVA) and polyvinyl chloride (PVC). If you are concerned about people who are sensitive to latex, look for brands that state they do not contain it. Closed-cell foam is advertised as durable and easy to clean.

Depths: 2, 2-1/2 or 3 inches

Price range: $31-$85, with a midrange between $45-$65 (US dollars). Shipping and handling additional. Prices vary depending on the size and surface texture.

> Standing or sitting on an unstable surface challenges balance, leading to improved posture and proprioception.

Balance discs

These discs are generally round and flat in shape, and inflated with air. When weight is applied from sitting or standing on the disc, the air inside shifts, creating instability. Adjusting the amount of air allows you to make the disc more firm or more soft (and unstable).

Many brands need a ball pump with a needle to inflate the disc to the desired firmness. When buying, check to see if the pump and needle is included, or if you can use one you already own. If not, you likely can purchase the pump and needle from the same source.

Discs are made from a variety of rubber (latex) or plastic materials. Ask about the materials if you have clients with latex allergies.

Surfaces on the balance discs are variable. Some are more smooth, or have a pebble-like surface, while others have more prominent nubs or ridges. The surfaces are intended to provide varying levels of tactile feedback. While generally round, there are discs that are more oval in shape, which affects how the air is displaced and how this feels to the exerciser.

Sizes: 13, 14, 15, 24 inches in diameter

Price range: $15.95- $99.95, with a midrange of $35-$55 (US dollars). Shipping and handling additional. Prices vary depending on size.

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Buying tips

Foam pads and discs can be purchased from many distributors and manufacturers and at trade shows that accompany conferences. This availability enables you to comparison shop among websites and catalogs to find the product that will suit your clients.

Look for quantity discounts, which lower the per-unit price. Often exhibitors at conferences offer a "show special" discount.

Foam pads and balance discs are lightweight, portable and easy to store. Because of the ability to achieve different levels of firmness or softness, they can be adapted for the novice and advanced exercisers. They may find their way into other exercise formats, too, such as strength training classes. These are basic tools that have a variety of uses.

Product information and prices are gathered by ICAA staff from multiple Internet sources, including manufacturers, distributors and trade groups. ICAA does not endorse or recommend any product.

Resources

Aeromat
ICAA Preferred vendor
http://aeromats.com/

Fitness Wholesale
www.fwonline.com/

Incrediball Enterprises Ltd. (Canada)
www.incrediball.ca

OPTP (Orthopedic Physical Therapy Products)
ICAA Preferred vendor
http://optp.com

SPRI Products
ICAA Preferred vendor
www.spri.com/

Thera-Band® Products
ICAA Preferred vendor
www.thera-band.com

ICAA Functional Levels

Athlete

Exercises or participates in sports activity almost every day or works at a physically demanding job. Activity goals are to maintain or improve fitness level and succeed in sports.

Active now

Exercises at least twice a week and engages in physical activity most days of the week for health and enjoyment. Needs exercise that maintains the level of fitness to live an active, independent lifestyle and to manage weight.

Getting started

Engages in some physical activity and can perform activities of daily living, but may have functional limitations. Needs activity that helps improve physical function and develops physical reserve to prevent decline.

Needs a little help

Engages in limited physical activity. May have medical conditions and movement limitations. Goals are to regain strength and balance, improve function and mobility and improve medical conditions.

Needs on-going assistance

Does not engage in physical activity and needs to improve the ability to perform activities of daily living and manage illness.

ICAA Functional Levels are adapted from the work of Waneen Spirduso, EdD (Physical Dimensions of Aging)

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Appropriate for

Active now

Getting started

Needs a little help

Needs ongoing assistance

Program profile

Follow the trail for fun and fitness

by Renee Harlow

Fitness Walking Trail

10-30 participants
4 functional levels
2-½ years in wellness program
4-6 times a year on schedule

The Country Meadows Retirement Communities Fitness Walking Trail is a directed walking path that leads participants through a variety of stations. Each station features an exercise or activity that targets:

- balance
- reaction time
- visual cues/following direction
- range of motion
- fine and gross motor skills
- strength and endurance

The walking trail is a success because it's fun. The trail is very popular with the residents because they can try different things, it's colorful, they have a good time and finish with a smoothie! The stations along the trail change, too, as we pull some out or add others, which keeps the trail interesting.

Country Meadows places a high value on wellness and fitness for its residents. So from a fitness point of view, the Fitness Walking Trail is a success with our residents because the exercises help condition them for participation in activities and events on campus and in the local community. The Fitness Walking Trail simulates obstacles and challenges associated with these activities, such as:

- getting in/out of vehicles
- sudden direction changes while walking
- stepping onto, over or around obstacles

Residents progress through a line of chairs by sitting and standing at each one. The exercise improves lower body strength and mobility.

- unexpected changes in walking surfaces
- walking while carrying objects and following visual cues

The Fitness Walking Trail was created by Kim Eichinger, executive director of fitness for Country Meadows Retirement Communities, and is offered at all 10 campuses. Many campuses offer a short version of the trail as a regular exercise class. At my campus, Country Meadows of West Shore, the trail is offered four to six times per year during special events such as Senior Fitness Week, Active Aging Week and health fairs.

Everyone walks the trail

When the program is offered on campus, participants generally come from the independent and assisted living programs. Many, but not all, residents engage in regular exercise programs such as strength training using Nautilus, walking and group-exercise programs.

We also have residents participate who receive restorative or Alzheimer's care. No exercise experience is necessary to participate in the Fitness Walking Trail.

During special events, residents, residents' families and community members travel

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the Fitness Walking Trail. At our last event, 22 people participated.

The participants generally fall into these functional levels:

54% Active Now
15% Just Getting Started
10% Need a Little Help
21% Need Ongoing Assistance

Staff members get involved

The success of the Fitness Walking Trail is a result of the support and enthusiasm from other departments. Fortunately, we have a great team at Country Meadows and everyone enjoys helping with the fitness trail.

The executive director of fitness assists with the selection of activity stations and designing the trail layout. Our Community Life Department is always happy to help with fitness-related events by promoting the program and encouraging residents to participate.

Staff volunteers who are positioned along the stations might include the executive director, community life coordinators, nurses and personal care aides. All co-workers who assist with the trail have experience and training in working with older adults. As the fitness coordinator, I organize the trail and provide direction to co-workers who are manning the stations.

Setting up the trail

For an indoor trail, we use a hallway that is approximately 310 feet long. When we set up outdoors, we need 380 feet to include nine or 10 stations. The trail weaves through our patio, sidewalk and garden areas. Golf stations are set up on the grass.

Of course, trails with fewer stations require less space. The fitness trail can be layed out in a large room or wherever you have the space. Choose the type and number of stations that will fit.

Models: Florence Yawger, Renee Harlow, Sarah Bowen

Residents work their way through the stations one at a time, stepping over hurdles, weaving through cones and following a zigzag path of stepping stones.

The stations can be modified to allow participants to ambulate with the use of assistive devices. Modifications are described in "Examples of Fitness Walking Trail stations" on page 17.

When Country Meadows piloted the program, we experimented with common items found on the campuses. For example, water cooler jugs served as cones, rubber place mats were used as stepping stones, chalk and masking tape created balance beams and resistance bands were turned into hurdles.

Once we determined that the program would be a success and identified the stations that would best meet our residents' needs, Country Meadows supplied all campuses with colorful cones, rubber bases and targets, various sized balls and wide marking tape.

The cost for the balance disc, cones, rubber markers, balls, swim noodles and resistance bands was $55 for each campus. The equipment was paid for using the fitness department budget.

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The staffing ratio is usually four spotters for a trail of 10 stations. Typically there is one volunteer monitoring two stations. Participants who require closer guidance are escorted through the trail by a staff volunteer.

Building participation

To market the program, we post a flyer or invitation on campus bulletin boards, promote it on our televised community calendar and distribute flyers to each resident's apartment. Because the Fitness Walking Trail is a very social event, the residents like to attend with their friends and invite newcomers to join them as well.

Everyone who walks the trail receives a "Certificate of Participation." They also get a small prize, such as stress balls or water bottles, once they complete the trail.

The fitness trail does require time for planning, but not a lot of expense. You can make it as simple or as elaborate as you'd like. Observe your residents/senior population and identify activities that have become a challenge for them. Then, design suitable stations that address those challenges.

The Fitness Walking Trail is a constantly changing fitness tool—it changes based upon the needs of the residents. We are always thinking of new activity stations to add to our trails to keep the enthusiasm and excitement going.

Renee Harlow is the fitness coordinator at Country Meadows Retirement Communities, West Shore Campus, (www.countrymeadows.com) in Mechanicsburg, Pennsylvania. Harlow conducts the fitness activities on campus for all levels of care, including teaching group class, one-to-one training and special fitness events. She is certified by American Council on Exercise and has received instructor training through the Senior Fitness Association.

The Fitness Walking Trail was a featured activity during Active Aging Week 2007.

Model: Dan Roberts

Participants step up and over a series of suspended swim noodles. This station targets balance and the ability to step over objects.

Examples of Fitness Walking Trail stations

The stations are arranged to offer a variety of movement and muscle use. For example, a side-stepping movement may be followed by a forward-travel activity. A station that targets lower body muscles may be followed by one that involves more focus on the upper body muscles.

Stepping stones. *(balance, navigating, visual cues)*
Eight round rubber mats arranged in a zigzag pattern serve as stepping stones. The resident steps on a stone with one foot, then brings the other foot forward until both feet are resting on a single stone. The action is repeated for each stone.

Shooting baskets. *(upper body strength and stretching, fosters competition, improves spirit)*
A portable basketball hoop with a stand is placed on the ground. Residents can toss the ball from a seated or standing position. A chair is available for residents who prefer to sit. The ball is a round rubber playground ball that is smaller than a traditional basketball (although that is available). The ball is soft and bounces so it is easier to retrieve. There is no limit on the number of shots that can be taken by the participant.

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Ball dribble around cones. *(agility)*
Four or five cones are set in a straight line approximately two to three feet apart. Residents without assistive devices bounce a playground ball in figure-eights around the cones and back. Residents with canes, walkers or wheelchairs walk or wheel without a ball around the cones and back.

Juggling. *(balance, coordination, trunk stabilization)*
This station is set up with chairs or a bench. Two or three Versa discs are placed on the chairs or bench. Residents sit on the discs,

which requires them to balance while they juggle (toss up and catch) two rubber balls. The balls are small and hand-sized with little nubs for tactile stimulation.

Balance beam. *(balance and coordination)*
Resistance bands laid on the ground and secured by tape serve as the balance beam. Residents walk heel to toe in a straight line along the beam, or wheel over it.

Stability ball bounce. *(depth perception, balance, coordination)*
Four or five round rubber mats are placed in a straight line about two feet apart. Each person stands on a mat holding a stability ball and then bounces and catches the ball, steps to the next mat with the ball, bounces and catches the ball and so forth. Residents with canes are handed the ball, bounce the ball, return it to a spotter and proceed to the next mat. Residents in wheelchairs are handed a small rubber ball, toss it up and catch it and move on to the next mat.

Forward hurdles and side hurdles. *(balance, agility, hip flexion, abduction, adduction)*
Swim noodles are attached to a series of chairs. The height of the hurdles can be adjusted. Residents can support themselves by using the chair backs. Residents can forward step, side step, alternate leg lead or same leg lead through the hurdles.

Models: Florence and Sarah with Kim Eichinger

Time for a cool-down! Residents are led through a series of hand exercises.

Golf. *(trunk movement, shoulder flexibility, weight shifting, balance)*
A portable putting green with a regular putter and oversize putter and balls and a portable driving range with net are set up. Residents practice short putts and longer hits. Spotters assist each resident and retrieve golf balls.

Sit-to-Stand. *(lower body strength, balance)*
Four chairs are lined up side by side. Residents sit down and stand up and move to the next chair to repeat the activity. They can use the arms of the chair, if needed, for support. Residents unable to stand are assisted with leg extensions while seated.

Hand exercise. *(flexibility, dexterity)*
This is generally the last activity station and serves as a cool-down. Residents do hand and finger exercises recommended by the Arthritis Foundation. They also do hand and finger exercises using therapy putty. Occasionally, we use bubble wrap and have residents pop the bubbles using each finger and thumb.

Smoothies!
The trail ends at the smoothie station. We offer strawberry and banana smoothies to reward participants for a job well done! Co-workers make the smoothies with fresh strawberries or bananas, yogurt, orange juice and ice. These are very popular!

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Client handout

Got arthritis? Get moving!

If you have arthritis, you know all about feeling stiff and achy. You may also feel tired and have trouble doing everyday things, like opening a jar or going up and down stairs.

Do you also know that there is something you can do to ease arthritis pain, relieve stiffness and maybe even reduce swelling around the joints? Physical activity does all these things—and it's free!

A little physical activity goes a long way to relieve arthritis symptoms. It may be hard to imagine walking to the store when your knees hurt, but over time those walks can really help.

Since there are so many types of arthritis, check with your doctor or therapist to find out if there are activities you should or should not be doing. For most everyone, physical activity is safe and helpful.

You can get more active on your own and join classes in your community, at local community colleges, recreation centers and health clubs. It's more fun to get active with others, and instructors can keep you safe and interested.

Activities for people with arthritis

bicycling	cross-country skiing
dance	golf
swimming	tai chi
walking	water classes
yoga	weight training
low-impact aerobics	

How to start

• Slow and steady is the way to go. If you feel more pain than usual, or your joints swell with exercise, then slow down or take a break for a day or two. Don't forget to start again!

• Get ready by moving around a bit with slow movements, such as making circles with your arms and ankles or gently rolling your shoulders.

• Start with stretching, every day.

• Try a water class. The water is warm, supports your body weight and joints, and helps you move with comfort.

• Walk for about 10 minutes, 3 times a day, and then start taking longer walks when you get stronger.

Once you start moving, you're likely to feel better and sleep better. That's a great way to start the day.

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Comment

Function, fun and discounts

When my mother arrived at her mid-sixties, she would say with a curled lip, "I'm not a senior." Then, she discovered the world of senior discounts. Suddenly, the snarl turned to a smile as she relayed to the clerk or waiter, "I *am* a senior. Could I have the discount, please?"

So much of our attitudes depend on self-perception. I was startled to discover I was eligible for the senior discount at a local fabric store once I turned 50. Do I think of myself as "a senior?" No, I think of myself as Pat. Did I reject the discount? Of course not! If you visit that store on a Saturday, you likely will find a line of so-called middle-aged women, with kids and teens by their sides, and sometimes the grandmother in tow, claiming that "senior" discount.

At ICAA, we believe that function is the appropriate descriptor of adults, not chronological age. Yet the markers in society, such as senior discounts and retirement distributions, are based on chronological age, not function.

The people you met in this issue, who attend balance classes and walk the fitness trail, realize that function is more important than age. Whether more frail or more independent, they are working on functional ability. They also are laughing and having fun.

That sense of enjoying classes and activities is partly due to the teacher. Who wants to spend a half hour with a dour leader? But the larger portion comes from within each individual. That's another functional skill: The ability to laugh and find the humor in situations.

While there may be no discounts available for functional ability, it is a welcome visual target as we keep our eyes on the horizon.

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