

What are evidence-based exercise programs and why are they important?

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Have you ever discharged a patient from physical therapy only to wonder what exercise program to recommend for maintaining the gains achieved in physical therapy?

Evidence-based programs (EBPs) are part of a wide variety of programs available in many communities. EBPs are research-supported programs to promote health and prevent disease and include components for behavior change and self-management. Programs like “A Matter of Balance,” “EnhanceFitness,” and “Fit and Strong,” are popular, safe, and effective EBPs for older adults.

EBPs are packaged, ready-to-go programs that have been:

- developed and researched in controlled settings
- published in a peer-review journal
- shown to have positive benefits for participants
- translated so they can be adopted by community organizations
- delivered by certified instructors (lay, health professionals)
- shown to have high retention rates
- engaging to participants
- designed with fidelity and sustainability strategies

Not all community programs are EBPs. While general programs are often developed and delivered based on personal interest and experience, they may not be consistent from site to site, and are not systematically tested. Participants are often enthusiastic and give great feedback about these individual programs, but do they really work?

If you are a physical therapist offering group classes for older adults, you might think, “My exercise classes are safe and effective for older adults and they are based upon the latest research,” or “I think that I could use my skills as a PT to add a few exercises or combine my program with yoga to make it better.” However, even when exercises are selected based on current research, these types of “best practice” or “evidence-based practice” programs have not been tested through randomized controlled trials to prove their safety and effectiveness.

Several federal initiatives are supporting widespread dissemination and implementation of EBPs. The Administration on Aging (AoA; US Department of Health and Human Services) and the National Council on Aging (NCOA) are leading national administration and support initiatives with a particular focus on efficient utilization of resources for low-cost, but effective programs. Most EBPs are designed to be simple to implement by lay leaders with limited resources.

To support programs, federal funding allocated through the Older Americans Act is disseminated through state aging services agencies to regional Area Agencies on Aging (AAA). Each AAA receives funding to support EBPs that have successfully completed AoA's Title IIIID program submission process and meets evidence-based criteria. (Information detailing the AoA evidence-based criteria can be Found here:

http://www.aoa.acl.gov/AoA_Programs/HPW/Title_IIIID/index.aspx#determine)

According to NCOA, EBPs provide value because:

- **Funders** increasingly demand that programming be based on solid evidence.
- **Agency leaders** want to concentrate limited resources on proven programs.
- **Older adults** are looking for programs that have been proven to work.

Ultimately, evidence-based programs represent a thoughtful way to use limited resources to enhance social good.

How do you learn more about evidence-based programs?

Start by going to the National Council on Aging Website:

<http://www.ncoa.org/improve-health/center-for-healthy-aging/>

There are programs in the following categories:

- Chronic Disease
- Physical Activity
- Falls Prevention
- Behavioral Health

PROGRAM	RESULTS CONTACT	PROGRAM GOALS & TARGET AUDIENCE	PROGRAM DESCRIPTION	DESIGNED BY	STANDARDS REQUIREMENTS	PROGRAM COSTS	NOTES
A Matter of Balance (MBO)	www.matterofbalance.org	1. Reduce fall risk in older adults 2. Increase confidence in walking 3. Increase social support 4. Increase ability to perform physical activities Target Audience: Adults, 65 and older, who are at risk for falls, have a history of falls, or are unable to perform physical activities because of concerns about falls.	1. 8 weeks or less weekly sessions 2. 12-16 total sessions 3. 2-3 hour sessions 4. 2-3 facilitators working together to provide instruction and support 5. The program group instruction addresses: exercise, nutrition, problem-solving, self-help, transportation, safety, driving, financial concerns and social networking.	1. Centers for Disease Control and Prevention 2. National Institute on Aging 3. National Institute on Health 4. National Institute on Mental Health 5. National Institute on Drug Abuse 6. National Institute on Alcohol Abuse and Alcoholism 7. National Institute on Deafness and Other Communication Disorders 8. National Institute on Child Health and Human Development 9. National Institute on Aging 10. National Institute on Aging and Administration on Aging 11. National Institute on Aging and Administration on Aging 12. National Institute on Aging and Administration on Aging 13. National Institute on Aging and Administration on Aging 14. National Institute on Aging and Administration on Aging 15. National Institute on Aging and Administration on Aging 16. National Institute on Aging and Administration on Aging 17. National Institute on Aging and Administration on Aging 18. National Institute on Aging and Administration on Aging 19. National Institute on Aging and Administration on Aging 20. National Institute on Aging and Administration on Aging	1. Learning Goal: Increase confidence in walking 2. Learning Goal: Increase social support 3. Learning Goal: Increase ability to perform physical activities 4. Learning Goal: Increase confidence in walking 5. Learning Goal: Increase confidence in walking 6. Learning Goal: Increase confidence in walking 7. Learning Goal: Increase confidence in walking 8. Learning Goal: Increase confidence in walking 9. Learning Goal: Increase confidence in walking 10. Learning Goal: Increase confidence in walking 11. Learning Goal: Increase confidence in walking 12. Learning Goal: Increase confidence in walking 13. Learning Goal: Increase confidence in walking 14. Learning Goal: Increase confidence in walking 15. Learning Goal: Increase confidence in walking 16. Learning Goal: Increase confidence in walking 17. Learning Goal: Increase confidence in walking 18. Learning Goal: Increase confidence in walking 19. Learning Goal: Increase confidence in walking 20. Learning Goal: Increase confidence in walking	\$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant	1. National Institute on Aging 2. National Institute on Aging 3. National Institute on Aging 4. National Institute on Aging 5. National Institute on Aging 6. National Institute on Aging 7. National Institute on Aging 8. National Institute on Aging 9. National Institute on Aging 10. National Institute on Aging 11. National Institute on Aging 12. National Institute on Aging 13. National Institute on Aging 14. National Institute on Aging 15. National Institute on Aging 16. National Institute on Aging 17. National Institute on Aging 18. National Institute on Aging 19. National Institute on Aging 20. National Institute on Aging
Active Choices	www.activechoices.org	1. Increase active living program participation 2. Increase confidence in walking 3. Increase social support 4. Increase ability to perform physical activities Target Audience: Adults, 65 and older, who are at risk for falls, have a history of falls, or are unable to perform physical activities because of concerns about falls.	1. 8 weeks or less weekly sessions 2. 12-16 total sessions 3. 2-3 hour sessions 4. 2-3 facilitators working together to provide instruction and support 5. The program group instruction addresses: exercise, nutrition, problem-solving, self-help, transportation, safety, driving, financial concerns and social networking.	1. Centers for Disease Control and Prevention 2. National Institute on Aging 3. National Institute on Health 4. National Institute on Mental Health 5. National Institute on Drug Abuse 6. National Institute on Alcohol Abuse and Alcoholism 7. National Institute on Deafness and Other Communication Disorders 8. National Institute on Child Health and Human Development 9. National Institute on Aging 10. National Institute on Aging and Administration on Aging 11. National Institute on Aging and Administration on Aging 12. National Institute on Aging and Administration on Aging 13. National Institute on Aging and Administration on Aging 14. National Institute on Aging and Administration on Aging 15. National Institute on Aging and Administration on Aging 16. National Institute on Aging and Administration on Aging 17. National Institute on Aging and Administration on Aging 18. National Institute on Aging and Administration on Aging 19. National Institute on Aging and Administration on Aging 20. National Institute on Aging and Administration on Aging	1. Learning Goal: Increase confidence in walking 2. Learning Goal: Increase social support 3. Learning Goal: Increase ability to perform physical activities 4. Learning Goal: Increase confidence in walking 5. Learning Goal: Increase confidence in walking 6. Learning Goal: Increase confidence in walking 7. Learning Goal: Increase confidence in walking 8. Learning Goal: Increase confidence in walking 9. Learning Goal: Increase confidence in walking 10. Learning Goal: Increase confidence in walking 11. Learning Goal: Increase confidence in walking 12. Learning Goal: Increase confidence in walking 13. Learning Goal: Increase confidence in walking 14. Learning Goal: Increase confidence in walking 15. Learning Goal: Increase confidence in walking 16. Learning Goal: Increase confidence in walking 17. Learning Goal: Increase confidence in walking 18. Learning Goal: Increase confidence in walking 19. Learning Goal: Increase confidence in walking 20. Learning Goal: Increase confidence in walking	\$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant \$100 per participant	1. National Institute on Aging 2. National Institute on Aging 3. National Institute on Aging 4. National Institute on Aging 5. National Institute on Aging 6. National Institute on Aging 7. National Institute on Aging 8. National Institute on Aging 9. National Institute on Aging 10. National Institute on Aging 11. National Institute on Aging 12. National Institute on Aging 13. National Institute on Aging 14. National Institute on Aging 15. National Institute on Aging 16. National Institute on Aging 17. National Institute on Aging 18. National Institute on Aging 19. National Institute on Aging 20. National Institute on Aging

In addition to the below EBP descriptions, the NCOA provides a chart providing an overview of key aspects associated with all of the programs approved by the Older Americans Act Title IIIID process. (<http://www.ncoa.org/improve-health/center-for-healthy-aging/content-library/Title-IIIID-Highest-Tier-Evidence-FINAL.pdf>)

A. CHRONIC DISEASE MANAGEMENT <http://www.ncoa.org/improve-health/center-for-healthy-aging/chronic-disease/>

1. Stanford University's Chronic Disease Self-Management Program: <http://patienteducation.stanford.edu/programs/cdsmp.html> CDSMP workshops meet once a week for 2 1/2 hours, over 6 consecutive weeks. Workshops are facilitated by two trained leaders, one or both of whom are non-health professionals with chronic diseases themselves. Workshops are highly interactive. Stanford also has a suite of other EBPs to choose from.

B. PHYSICAL ACTIVITY PROGRAMS: Found on the NCOA Website: <http://www.ncoa.org/improve-health/center-for-healthy-aging/physical-activity/community-programs.html>

CDC Approved Programs can be found at the following link:

http://www.cdc.gov/HomeandRecreationalSafety/Falls/compendium/1.0_exercise.html

CDC Document with good guidance and resources for implementation of EBPs:

www.cdc.gov/aging/pdf/Community-Based_Physical_Activity_Programs_For_Older_Adults.pdf

GROUP EXERCISE PROGRAMS FOR PHYSICAL ACTIVITY:

1. **EnhanceFitness** <http://www.projectenhance.org/EnhanceFitness.aspx> Classes meet 3 times per week for one hour per session. Each class includes warm-up (5-8 min.), cardiovascular endurance (20 min.), cool down (3-5 min), strength training for upper and lower body using cuff weights (20 min.), stretching (8-10) and balance and posture activities (may be incorporated in other areas or separately). Level 1 (seated) and 2 (seated/standing) options with modifications



available. In addition, fitness checks are suggested at baseline and every 4 months. Fitness checks are from Rikli/Jones work and include chair stand, arm curl, 8 foot up and go, 2-minute step test, 6-minute walk, and 1 leg

stand. Instructors must be trained in the program and maintain a nationally recognized fitness instructor certification. On-going support for the instructor is available from the Master Trainer. Attendance at annual instructor workshops is encouraged. Target audience is older adults living in the community.

2. **Fit and Strong!** <http://www.fitandstrong.org/> Combines flexibility, strength training and aerobic walking with health education for sustained behavior change among older adults with lower extremity osteoarthritis (OA). Fit & Strong! works with providers across the country to deliver an 8-week program 3x per week for 60 minutes that targets improvement in lower extremity stiffness, lower extremity pain, lower extremity strength, aerobic capacity, participation in exercise and caloric expenditure, and self-efficacy for exercise.

NOTE: The Arthritis Foundation has transferred administration of their exercise programs to other organizations except for Walk with Ease. Please see the individual exercise programs below for the new administrator information.

3. **Arthritis Foundation's Walk with Ease** <http://www.arthritis.org> This program helps participants develop a walking plan that meets their particular needs, stay motivated, manage pain, and exercise safely. 6-week program with 12-15 participants that meets for 60 minutes 3x per week. Also offered is a self-guided format using the Walk with Ease Guidebook that combines self-paced walks with a health topic.
4. **Arthritis Foundation's Exercise Program** <http://www.e-afaa.com/102.e->

[afaa?PK2=46](#) (Arthritis Foundation has partnered with AFAA: Aerobics and Fitness Association of America to administer this program) Low-impact community-based group exercise program designed for people with arthritis to reduce fatigue, pain and stiffness and improve functional ability, mobility, muscle strength, coordination, self-confidence and self-care. Held for 8-12 weeks, 60 minutes, 2-3x per week.

5. **Arthritis Foundation's Aquatic Program** <http://www.aeawave.com> (Arthritis Foundation has partnered with AEA: Aquatic Exercise Association to administer this program) This water exercise program was created by the Arthritis Foundation for people with arthritis and related conditions. The classes are conducted by a trained instructor and include joint range of motion, stretching, breathing, and light aerobic activities. The classes typically meet



2-3 x per week for 60 minutes. <http://aeawave.com/AFInfo.aspx>

6. **Arthritis Foundation's Tai Chi Program** <http://taichiforhealthinstitute.org/> (Supported by, but no longer administered by Arthritis Foundation) Designed to improve movement, balance, strength flexibility and relaxation. Developed by Dr. Paul Lam, the program utilizes Tai Chi's Sun style for its ability to improve relaxation and its ease of use for older adults, the movements are taught backwards and forwards to improve mobility and offer a variety of combinations. Classes are offered for 6-8 weeks, 45-60 minutes 2-3x per week.

7. **Geri-Fit® Strength Training Workout** <http://www.gerifit.com/> 45 minute, 2x



weekly progressive resistance exercise program done without music. Most exercises performed seated using a set of 2lb dumbbell weights. Typically performed in a group setting, though can be done in a person's home and/or administered by a caregiver.

MOTIVATIONAL COUNSELING PROGRAMS FOR PHYSICAL ACTIVITY:

8. **EnhanceWellness** <http://www.projectenhance.org/enhancewellness.aspx> A participant-centered motivational intervention. A team of two professionals, Move into action with the support of a health professional and/or volunteer health mentor, who offer ongoing encouragement, feedback, and monitoring. The team helps with problem solving, health education, and referral to support groups and

additional services, including individual and family counseling, if indicated.

- 9. Active Living Every Day:** www.ActiveLiving.info A 12 week self-management program to overcome barriers to physical activity. Facilitators lead discussions and help participants set goals and find activities they enjoy. A manual and online tools are provided to participants.

IN-HOME INDIVIDUAL INTERVENTION FOR PHYSICAL ACTIVITY:

- 10. Healthy Moves for Aging Well** https://www.picf.org/landing_pages/22,3.html A simple and safe in-home physical activity intervention developed and tested by Partners in Care to enhance the activity level of frail, high-risk sedentary seniors living at home. The model was developed for community-based care management programs arranging and delivering services to seniors in the home.
- 11. Active Choices:** <http://www.ncoa.org/improve-health/center-for-healthy-aging/active-choices.html> 6-month telephone-based individualized program that provides remote guidance and support and builds self-management skills.
- 12. Healthy Moves for Aging Well** In-home physical activity intervention (chair bound and advanced exercises) that is focused on maintaining health status and quality of life of frail elders. Care managers and motivational volunteer phone coaches teach program exercises to participants in their home.
 - Movement repetitions 3-5 days per week, multiple times per day
 - One 15-minute session between participant and care manager
 - 3 month follow up period with weekly or bi-weekly phone calls

C. Falls Prevention:

GROUP EXERCISE PROGRAMS FOR FALLS PREVENTION:

- 1. A Matter of Balance:** <http://www.mainehealth.org/mob> Classes meet for 8 weeks 1-2x per week for 2 hour sessions limited to 8-12 group participants. Program emphasizes practical coping strategies to reduce fear of falling and teach fall prevention strategies. The class is led by peer/lay leaders who have been trained in the program. Weekly topics include: exploring thoughts and concerns about falling, exercise and fall prevention, assertiveness and fall prevention, managing concerns about falling, recognizing faulty habits and fall hazards in the home and community. Excellent for people who fear falling and or who limit physical activity or community mobility due to fear. The exercise component is taught in week 3 and includes: breathing, shoulder rolls, wrist flex/ext, wrist rotation, fist/extend,



pectoral stretch, foot circles, seated hip flexion and knee extension, shoulder range of motion, standing plantar flexion, hip flexion, hip extension, hip abduction, hip circles, side stepping, box step, arm chair push up,

and heel cord stretch in standing. Usually a physical therapist is invited to teach the exercise session.

2. **Stay Active and Independent for Life (SAIL)** <http://livingwell.doh.wa.gov> is a group exercise class, which includes strength, balance and endurance training for adults 65 and older. Classes meet 2-3 times per week for 60 minutes. Each class includes warm-up, cardiovascular endurance, dynamic and static balance and posture training, strength training for upper and lower body using cuff weights, and upper and lower body stretching. All exercises are performed in standing or sitting. Fitness checks are suggested at baseline and on-going periodically.
3. **Tai Ji Quan: Moving for Better Balance™ (TJQMBB)** <http://www.tjqmbb.org/> is an evidence-based fall prevention program for community-dwelling older adults. The program consists of an 8-form core routine with built-in exercise variations and a subroutine of integrated therapeutic movements, which, collectively, comprise a set of simple yet functional Tai Ji Quan-based moves. The program is delivered in two 1-hour sessions each week for 24 weeks. Each session consists of warm-up exercises; core practices, which include a mix of practice of forms, variations of forms, and mini-therapeutic movements; and brief cool-down exercises. The program is currently being disseminated through the YMCA system.

INDIVIDUAL INTERVENTION FOR FALLS PREVENTION:

4. **Fallscape:** <http://www.fallscape.org/> Multimedia fall prevention training is delivered through a headset that allows the participant to experience instructional video vignettes for training and specific video clips for evaluation. The video vignettes provide immersion into situations that are tailored to address their unique lifestyle and the characteristics of their environment. FallsTalk software creates a unique profile for each participant and delivers a customized multimedia experience to the participant.
5. **FallsTalk:** <http://www.fallscape.org/> **FallsTalk™** is user-friendly software that forms the foundation for the **FallScope™ System**. The point & click interview expedites the documentation of key components of the participant's unique features. The **FallsTalk™** Behavioral Intervention components are constructed using this information. **FallsTalk™** administrative functions create documentation specifically designed for different users in various clinical, residential, or community settings. Customized participant workbooks, standardized data collection and reporting tools; as well as fall diary forms and instructions are
6. **The OTAGO Exercise Program** (delivered by PTs. Not a group class): <http://www.med.unc.edu/aging/cgec/exercise-program> Series of 17 strength and balance exercises delivered by a Physical Therapist in the home that reduces falls between 35 and 40% for frail older adults. This EBP, developed in New Zealand, calls for PTs to assess, coach and progress patients over the course of six months to



one year. The training course is a self-paced online training 3 CEUs and costs only \$25.

MULTI-FACETED INTERVENTIONS FOR FALLS PREVENTION:

7. Stepping On

http://www.cdc.gov/HomeandRecreationalSafety/Falls/compendium/3.1_stepping_on.html Multifaceted program consisting of 7 weekly 2-hour program sessions, 1- to 1½-hour home visit, 6 weeks after the final session, 1-hour booster session 3 months after the final session. The original program was developed in Australia required a team of content experts lead by an OT, and included: Physical Therapists, Roads and Traffic Authority volunteers, and Nurse and Guide Dog mobility officers. The program has been reformatted for the US and is administered by the Wisconsin Institute for Healthy Aging. WIHA has permission to use the *Stepping On* North America Leader Manual in its Leader Training programs to WIHA Licensees. The Leader is a current or retired health care professional, social worker, health educator, fitness expert or aging network professional. Individuals should have previous experience facilitating a group program based on adult learning or self-efficacy principles, experience working with older adults in a professional setting and have a sponsoring organization that is willing to commit the resources needed to implement and sustain *Stepping On*.
<https://wihealthyaging.org/stepping-on>

How do I find out what EBPs may already be in my area?

Before making a decision about the best program to implement, check within your local community for currently conducted EBPs. If none or few exist, contact the **Area Agency on Aging** (AAA) <http://n4a.org> to find out what programs currently exist and if there is a need for a specific program in your area. AAAs are charged by the federal government to fund and disseminate programs for aging adults. They might be able to offer funding for the program you want to implement. Look for programs on their maps: <http://www.n4a.org/healthyaging>.

Find out what recreation centers, fitness centers or senior centers might have available space for an exercise program in your community.

When you find a suitable space go back to the NCOA website and browse through their tools and resources page that contains a plethora of information and checklists for implementing an EBP. <http://www.ncoa.org/improve-health/center-for-healthy-aging/physical-activity/tools-and-resources-1.html> Remember, you don't have to reinvent the wheel to begin a safe and effective exercise program for older adults!

What steps should I take if I want to develop an EBP?

If you do want to reinvent the wheel with some great innovations, then start here at the **US Department of Health and Human Services, Administration for Community Living, Administration on Aging** that lists all of the criteria and requirements for delivering an evidence-based program to older adults:

http://www.aoa.acl.gov/AoA_Programs/HPW/Title_IIID/index.aspx#determine You will also

find the definitions of evidence-based program vs. evidence-based practice with some very helpful FAQ's at the bottom of the page!

Many thanks to Lori Schrodtt PT, MS, PhD, Chair of the Health and Wellness Promotion Special Interest Group and Debbie Hanka, PT, DPT, GCS, CEEAA, Member Bone Health Special Interest Group, for their contributions to this article.

For more information about joining the Bone Health, Health and Wellness Promotion or the Balance and Falls Special Interest Groups please visit www.geriaticsppt.org. Best of luck in getting your local communities moving!

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Sherri Betz is the owner of TheraPilates® Physical Therapy Clinic in Santa Cruz, CA. Ms. Betz specializes in the treatment of osteoporosis and spinal pathologies using manual therapy, Pilates and yoga interventions. Teaching low-cost community-based exercise programs to help older adults improve their bone health and maintain their independence is an integral part of her practice.