

Overview of Exercise Programming for Active Older Adults

Generalized exercise program guidance for older adults is typically focused on providing frequency, duration, and intensity parameters to follow. We are all probably aware of the CDC's current recommendation on the quantity of physical activity for older adults – 150+ minutes of moderate intensity activity or 75+ minutes of vigorous activity per week. (29)

Research has shown that even training periods as short as 15 minutes in duration per day have been shown to reduce risk of mortality by 22% (30).

While these are encouraging statistics, does it really provide the sort of guidance that we really need to help active agers? It is likely that your active aging clients are already exceeding these recommendations, but are they doing the right combination of exercises for their active lives? In order to answer this, we need to look more closely at our clients.

For the most part, active Baby Boomers are leading happy and fulfilling lives. According to Colin Milner, CEO of the International Council on Active Aging, Baby Boomers are the most financially secure cohort of older adults ever and they are set to inherit 70% of the \$41 trillion wealth transfers in the upcoming years. And there is a noticeable trend in how they are choosing to enjoy this financial security. Instead of purchasing bigger homes or more expensive automobiles, Baby Boomers are engaging in what is called *experiential luxury* (31). This means that they are taking time and spending money to enjoy things like luxury travel, cultural events, and active recreational pursuits. That means our older clients are likely to seek us out to help prepare them to hike the Inca Trail to Machu Picchu, ride mountain bikes in the Rockies, paddle kayaks around Key West, or walk

the streets of Paris and Rome. Along with those exciting things, they also still need to live their daily lives where they tend to their gardens, carry their groceries, climb their steps, work/volunteer in the community, and visit with their family and friends. This is what it means to be an active ager.



In light of this, think about all the domains of function it takes for older adults to live an active and exciting life: cardiovascular/metabolic fitness, muscle strength/power/endurance, flexibility, balance/agility and cognitive function. So really, an older adult must be a “JACK OF ALL TRADES” (or a “JILL” with your female clients!) when it comes to these domains of function. Going back to the aging curve illustration, young and middle-aged adults have these functional domains still close to their peak and the body recovers quickly from illness and injury. However, this is not true in later life. Even active agers cannot ignore any of these areas in order to become overly specialized in one area. For example, perhaps an older

cyclist comes to you to prepare for a bike trip in France along portions of the Tour De France course. This client may think that the only element needed is to train for cardiovascular and metabolic fitness. In reality, though, there are many other things that go into it: muscle strength to lift the bike on and off the roof rack of the car, dynamic balance to walk into coffee shops in their cycling shoes, core strength to protect the back while in the saddle for hours on end – it all is important! Think of these domains of function as individual links of an interconnected chain. If there is even one weak link, chances the body will eventually break and take down even your most active older clients.



A major benefit in approaching exercise program design from the “Jack of All Trades” perspective is the variety of programming that you have at your disposal. With so many domains of function that need to be trained, your programming and equipment options are practically endless. This helps you create fun & engaging programs and have very happy clients who will be your loyal customers for years to come. And since all these domains of function influence each other, a client may see huge improvements in one area with only a modest investment of time and energy because all the

other aspects of their training help to boost it up. The Functional Aging Institute has developed the honeycomb Functional Aging Training Model graphic shown below which further illustrates the elements necessary to build your active agers into Jacks/Jills Of All Trades.



Training the Active Older Adult

Scope of Practice

An essential element of exercise program design for any client is to gather information pertaining to their state of health, formulate objectives for the training program and perform assessments of functional capacity. This is no different for active older clients. A word of caution, however. Older adults will often seek advice on medical issues that might be bothering

them. Remember that the assessment process is not an acceptable substitute for a medical examination done by a licensed medical professional. If an active ager exhibits unusual symptoms or has significant discomfort or pain any point during the assessment process or during training, you should discontinue the activity and strongly recommend a physician visit to diagnose and treat the issue. In order to help clarify the limitations to scope of practice, the National Strength and Conditioning Association published guidelines in the table below for fitness professionals as compared to allied health professionals that often work with a similar clientele (32).

	CERTIFIED PERSONAL TRAINER (CPT)	PHYSICAL THERAPIST	REGISTERED DIETITIAN (RD)	BEHAVIORAL COUNSELOR
Education	High school diploma or equivalent (depending on organization)	Master's or doctorate degree (doctorate required by 2016) 6 months clinical residency Board exams	Bachelor's degree 12 months supervised practice Board exams	Master's or doctorate degree Supervised clinical Board exams (in most states)
Basic Job Description	Developing and implementing appropriate exercise programs Assisting clients in setting and achieving realistic fitness goals Teaching correct exercise methods and progressions	Diagnose and manage movement dysfunction Restore, maintain, and promote optimal physical function and wellness Prevent the onset and progression of impairments	Administer medical nutrition therapy as part of the healthcare team Manage food service operations Teach and advise on healthy eating habits and about the connection between food, fitness, and health Conduct research	Recognize and treat mental disorders and psychosocial problems Treat and manage clients with chronic emotional and/or health problems Manage clients who use medical visits to obtain needed social support Transfer clients into appropriate mental health specialty care when indicated
Diagnose	No	Yes	Yes	Yes
Treat Illness or Injury	No	Yes	Yes	Yes
Prescribe Medication	No	Yes	Yes	Yes
Rehabilitate/Counsel	No	Yes	Yes	Yes

Initial Screening – the PAR-Q

As stated earlier, most older adults, even those who are highly active, have chronic medical conditions and take prescription or over-the-counter (OTC) medications (1). This illustrates the importance of having a dialogue about these issues with new older clients. You should encourage all your active older clients inform their medical team that they are working with you on a new exercise program, however it is NOT necessary for most of them to seek written medical clearance to participate in a new exercise program. In 2018, the American College of Sports Medicine released a revised flowchart to guide fitness professionals to determine when older clients should be referred out for written medical consent to exercise. This flowchart is based on 2 data-driven guiding principles:

1. Exercise is generally safe for the vast majority of older adults, even those with chronic disease, particularly for those who are already regularly physically active.
2. Requiring consent from a medical professional creates an unnecessary barrier to adoption of exercise due to challenges with scheduling, transportation and other factors.

The ACSM Flowchart can be seen below.

INSERT 2018 ACSM RISK FLOW CHART HERE (OR LINK TO IT)

The revised Physical Activity Readiness Questionnaire (PAR-Q+), is useful to determine if the active ager has any high-risk conditions such as cardiovascular, metabolic, and renal disease that may warrant written

medical clearance to exercise. The PAR-Q+ was designed to determine if it is safe for a person to engage in moderate-to-high intensity physical activities. Through simple Yes and No questions, it identifies people for whom certain activities may not be appropriate or who may need further medical evaluation. The PAR-Q+ also includes information about other chronic medical conditions (e.g., musculoskeletal impairments) that should be noted by the fitness professional.

Medical History Questionnaire

Following the PAR-Q+, it is important to include a medical history questionnaire as part of the intake process of your active aging clients. Even if your client is a masters athlete, has no chronic disease, and looks as good as Jane Fonda or Pierce Brosnan, you should still go through this process. Because, like it or not, older people are at greater risk for medical complications simply because they are older! Medical history questionnaires come in all shapes and sizes, but it is recommended to use one that includes a comprehensive medical history of the individual and their close blood relatives (parents, siblings, children) and includes questions about diagnosis of cardiovascular disease, cancer, diabetes and other health issues. There should also be questions about past musculoskeletal injuries that may affect the active ager's everyday life and result in pain and movement issues. Additionally, questions about other lifestyle behaviors such as smoking, drug use, hobbies/occupation and diet may reveal what behaviors may be in need of health coaching and may affect the success of the exercise program. Finally, information concerning over-the-counter (OTC) medications and dietary supplements should be gathered.

A sample medical history is included below.

INSERT TFS HEALTH HISTORY HERE (OR LINK TO IT)

Medications

Most active agers take prescription and OTC medications. Remember, it is not your role to administer, prescribe, or educate on the usage and effects of any of these medications. However, you need to understand how certain types of medications may affect or alter exercise performance. The tables below list several common classes of medication and their expected influence on exercise tolerance.

Medication Class	Treatment
Beta Blockers (β -Blockers)	Hypertension & arrhythmia
Calcium Channel Blockers	Hypertension & angina (chest pain)
Nitrates	Hypertension & angina
Diuretics	Hypertension
Vasodilators	Hypertension
Statins	LDL cholesterol reduction
Insulin Derivatives	Blood glucose management
Biguanides	Blood glucose management

Alpha-Glucosidase Inhibitors	Blood glucose management
Bronchodilators	Pulmonary conditions
COX-2 Inhibitors	Arthritis and inflammation
Tumor Necrosis Factor	Autoimmune diseases
Bisphosphonates	Osteoporosis and osteopenia
Antidepressants	Anxiety and depression

Medication	Effect on HR	Effect on BP	Effect on Alertness
Beta Blockers (β -Blockers)	↓	↓	↔ or ↓
Calcium Channel Blockers	↑ or ↔ or ↓	↓	↔ or ↓
Nitrates	↑ or ↔	↔ or ↓	↑ or ↔
Diuretics	↔	↔ or ↓	↔ or ↓
Vasodilators	↑ or ↔ or ↓	↓	↑ or ↔
Statins	↔	↔	↔
Insulin Derivatives	↔	↔	↔ or ↓
Biguanides	↔	↔	↔ or ↓
Alpha-Glucosidase Inhibitors	↔	↔	↔ or ↓
Bronchodilators	↑ or ↔	↔	↑ or ↔

COX-2 Inhibitors	↔ or ↓	↔	↔
Tumor Necrosis Factor	↑	↑	↑ or ↔
Bisphosphonates	↔	↔	↔
Antidepressants	↑ or ↔	↔ or ↓	↔ or ↓

Key: ↑ = increase, ↔ = no effect, ↓ = decrease

These tables are merely intended to present a basic overview of some common medications. They are not intended to serve as conclusive evidence regarding the medications and/or their effects. For more complete information regarding medications, the STOPP/START criteria has been developed to assist clinicians and fitness professionals to identify medications that may pose issues to older adults during physical activity and suggest possible alternatives. A link to the START/STOPP criteria is below:

<https://www.cgakit.com/m-2-stopp-start>



The Interview Process – Motivational Interviewing

There is truth to the saying “You only get 1 chance to make a first impression”. And, when it comes to the crowded fitness space, the importance of the first impression you make on a prospective active ager client cannot be underestimated. Many older adults feel as though medical and allied health professionals are too focused on diagnosis and therefore do not do enough to promote overall health and well-being (33,34).

Demonstrate that you will not be that way. Take time to talk to your client about their physical activity and exercise history. A casual conversation may reveal important information. What experiences have they had with fitness professionals previously? What does their current physical activity program look like? Are they into group exercise classes such as spinning, Zumba, yoga or Pilates or do they prefer training by themselves? And, as with all your clients, make sure to ask your active ager to discuss their expectations. They need to know that it may be unreasonable to expect that an arthritic joint will never hurt when they are out playing tennis or that an accidental fall on the hiking trail will never occur. However, remind them that by working with you, these issues are likely to be much less frequent.

An excellent process to build trust and rapport with a new active aging client is MOTIVATIONAL INTERVIEWING. Motivational interviewing (MI) is a process that was first utilized during the 1980’s in substance abuse treatment programs. The goal of MI is to help guide the client to determine the reasons for behavior change and make the “why” to focus of communicating the value of the program in order to increase intrinsic motivation and improve exercise adherence (35). Although active agers rarely lack intrinsic motivation, practicing MI with your older clients is a great way to . The keys to motivational interviewing are to ask open ended

questions, encourage “change talk”, avoid “barrier talk” and practice reflective listening.

In order to employ MI strategies, the acronym O.A.R.S. is often used to guide the fitness professional:

- **Open-ended Questions:** Nothing slows down conversations more than the word “No”. Always choose to ask questions that require the active ager to provide useful information. For example, instead of asking “Do you have time in your busy training schedule to engage in balance training?” you can ask “In what ways does better balance help you become more active?” Open-ended questions allow the client to give thought to their answer and you will often gather more information that can be followed up on further with additional open-ended questions.
- **Affirmation:** Demonstrate to the client that you are going to be one of their biggest cheerleaders. Celebrate positive statements with comments such as: “I am really impressed that you have been doing yoga twice a week for the past 10 years. It is a great form of exercise and will complement what we do here.” Conversely, empathize with negative statements but always be solution-oriented: “The osteoarthritis pain in your hip when you ski is a real bummer, fortunately a corrective exercise program can help to reduce that pain significantly.”
- **Reflection:** Prove that you are a good listener through reflective listening. On a frequent basis during your interaction with the client, use your own words to reflect back the content of what was said and

the emotions that were attached to the thoughts. It is often very helpful for the client to have their thoughts reflected to them. “I hear you saying that you are both excited but a bit worried about your upcoming trip to Europe because it will involve so much hiking.”

- Summarize: An extension of Reflection that occurs at the end of the conversation. Provide an overview of the main points of the conversation and a broad overview of the action plan that was discussed. “We decided to schedule training 2 days per week in advance of your 10K race in August. Your program will incorporate cross-training so that the plantar fasciitis that has been bothering you lately will be less likely to impact your ability to train.”



Assessing the Active Aging Client

With all the inaccurate stereotypes about aging, many fitness professionals underestimate the capabilities of active agers and deliver exercise programs that are not challenging enough. The goal of training an active older client, much like clients of younger age, is to provide a sufficient

stimulus (overload) to induce positive physiological adaptations and to allow the active adult to become even MORE ACTIVE. The assessment process identifies current functional capacity in order to build an appropriate exercise program design for any older client.

The purpose of this section is not to advocate for any one specific assessment protocol or to provide detailed instruction on how to administer assessments. There are hundreds of possible assessments to choose from and many of you are already trained on how to administer many of them. Attending conferences, taking additional CEC courses, and scouring the internet will provide plenty of resources to learn additional assessment techniques. Our purpose here is to provide guidance on how to select the most appropriate assessment protocol(s) for your active ager so that the exercise program can be constructed most effectively.

There are 2 principles that must guide the assessment process of active older adults: SPECIFICITY and SENSITIVITY. Specificity refers to choosing assessments that quantify the domains of fitness that are utilized during the activities that the person regularly performs. Sensitivity refers to the ability of an assessment to detect change and classify people into different levels of fitness. For example, to measure muscle strength and power, you probably should not do the 5-Repetition Sit-to-Stand assessment on Linda, a 60-year old masters swimmer. That test is neither specific nor sensitive for Linda because it is intended for low function older adults who struggle with a basic fundamental movement pattern (squatting). It is also likely that Linda and most other active agers would exhibit a “ceiling effect” so the test would not inform you about her muscle

strength and power relative to others of higher fitness. It might be a better idea to do a maximal strength pull assessment (e.g., 1-RM cable row) and maximal strength multi-joint lower body assessment (e.g., 1-RM leg press) that are more specific to her swimming stroke and exhibit no ceiling effect.

The fitness professional should consider a combination of both OBJECTIVE and SUBJECTIVE assessments with their active agers. Objective assessments provide a measurable score, such as time, repetitions, distance...etc. Objective assessments allow for comparison to other active agers due to the score being measurable and the existence of published norms to determine relative capability. Results from objectively scored assessments will give you an idea of which domains of fitness are less developed and guide you in determining the selection of the exercises in the program as well as their acute variables (e.g., sets, reps, loading, duration, tempo...etc.). Subjective assessments analyze movement quality and identify dysfunction associated with different movement patterns such as hinging, carrying, pushing, pulling and gait patterning. These assessments require a trained eye to reliably administer and can guide you in determining the corrective exercises (e.g., movement preparation, foam rolling, stretching...etc.) that should be an essential part of an active ager's training program. Additionally, it will reveal movement compensation patterns that must be monitored and corrected during their training sessions.

In order to train your active agers to be Jacks/Jills Of All Trades, you should assess them in all those areas of function and determine their

relative strengths and weaknesses. See the box below for some suggestions that may be good selections for active agers:

Specific interests of your active ager should also drive the selection of assessment. There are many assessment and training solutions that have been developed for different activities/sports. Your active agers may be appropriate for high-function assessment systems such as the Functional Movement Screen (FMS) and golfers may be assessed by the Titleist Performance Institute (TPI) system.



The next section of the course gets down to the nuts and bolts of a “Jack of All Trades” training program for your active agers. It will provide guidance on constructing and leading these programs as well as age-specific safety issues.