

Learning Objectives

1. Identify the benefits of a functional movement preparation routine compared to a traditional cardiovascular warm-up routine
2. List the guidelines of an appropriate functional movement preparation routine
3. Describe functional movement preparation routines for lower level and higher level **students**
4. Identify the benefits of flexibility training for mature **students**
5. Describe functional flexibility exercises
6. List functional flexibility routines that are appropriate for lower level and higher level **students**

Introduction

In the group exercise class for this maturing market, many factors will determine how the class progresses of the instructor, the size of the class, the space and equipment available, the skills of the students, as well as the likes and dislikes of the students.

A general class should contain the following sections:

1. Warm-up – no less than 10 minutes in length for this special population.
 - Elevate heart rate
 - Prepare muscles and joints
 - Simple and easy to follow movements
 - Repetitive warm-up with slight variations

At the beginning of class, the instructor should explain the class format and review what the participants can expect. It is a priority to create a positive attitude and comfortable atmosphere for the class. Tapping into the participant's feelings and emotions will create adherence. How participants are treated and whether they are comfortable can be a big influence on their attendance for the next class. Enjoyment during physical activity is optimized when a positive and supportive leadership style is coupled with an enriched and supportive group environment. It is imperative that students develop self-efficacy, self-esteem, and mastery of

skill and movements. One reason students like group exercise is the enjoyment of interacting with other individuals. Many participants get a feeling a satisfaction and belonging which is an important part in the participant's overall health.

The traditional general cardiovascular warm-up routines are inadequate for a functional exercise program because they do not prepare the body for the diverse neuromuscular demands that will be placed on it. Performing some light cardiovascular exercise prior to performing a functional program isn't harmful and can still be included. However, a more effective approach is to perform a movement preparation routine that is specific to functional exercise. This means including multi-dimensional, multi-planar movements that lightly challenge many aspects of function such as proprioception, balance, coordination, etc. In this module we will briefly define a functional movement preparation routine, its benefits and characteristics. Two sample routines are provided (videos included).

The functional preparation includes both neuromuscular and cardiovascular warm-up components

. The typical benefits of a cardiovascular warm-up such as increased muscle blood flow, oxygenation and temperature are enhanced by the benefits of the neuromuscular warm-up such as coordinated muscle activation.

This dual-benefit is accomplished by performing a variety of movements in combinations and sequences that reflect the types of physiological demands that will be placed on the body. While there will be some similarities between movement preparation routines (e.g. multiplanar, whole-body, variety of muscle contractions, etc.) they should also include aspects specific to the coming exercise routine and matched to the individual's abilities. For example, if the routine will significantly challenge balance and proprioception then the movement preparation should

focus on those components. If the routine focuses on agility and mobility then the movement preparation should specifically address those areas.

However, one **student** may be able to perform mini-lunges as part of their movement preparation but for another **student** mini-lunges might be too challenging. A higher-functioning individual may be able to perform hand walks or spider walks as part of their movement preparation while another individual might not be able to perform these at all due to limitations in core strength, flexibility, etc.

Movement preparation should last about 4-5 minutes consisting of about 30 seconds of 8-10 different movements but this varies widely depending on the abilities of the individual **student**. For all **students** and especially the very deconditioned or frail **students** the movement preparation routine should be considered part of the workout rather than something you “should do” before the workout. When it is presented as an essential part of the workout then the **students** are more likely to do it. In a small or large group setting the leader can obviously start the exercise session with the movement preparation routine\The intensity of the movement preparation routine should be moderate. By the end the **student** should feel warm with an elevated pulse and respiration rate, similar to a cardiovascular warm-up. Intensity can gradually increase throughout the routine by starting low and ending high. This is accomplished by manipulating spatial (range of motion, depth, stride length, etc.), temporal (speed, tempo, pace), load and other characteristics of the movements as well as moving from easier/simpler to more difficult/complex movements.

Two sample movement preparation routines have been included. These routines were created for a follow-along video home exercise program so the routines are rather generic, simplistic and not

matched to a specific individual's abilities. However, one routine is geared for lower to average functioning mature adults and the other is geared for average to higher functioning mature adults.

Sample Functional Warm-up for Levels 1 and 2 (lower to average function)

Time: 4-5 min

20-30 seconds of each movement

Woodchops straight up and down

Woodchops down-left to up-right

Woodchops down-right to up-left

March in place

Heel Kicks

Small Forward Lunge with 2-arm reach alternating legs

Small Forward Lunge with 1-arm crossover reach alternating legs and arms

Backwards Lunge with 2-arm overhead reach

March in place

Heel Kicks

Sample Functional Warm-up for Levels 3 and 4 (average to higher function)

Time: 4-5min

30-40 seconds of each exercise

Marches with torso twist (elbow to knee)

Heel Kicks with side step and squat

Split Squat right leg

Split Squat left leg

Hand Walks

Mountain Climbers

Backward Lunges with twist alternating legs

2. Skill section which could include any and all of the following:

- Multisensory balance training – visual, somatosensory, and vestibular
- Center of gravity – moving the body in various positions to challenge the COG
- Gait enhancement – Various methods of walking and moving
- Fall prevention training – foot work, ankle and hip strategy
- Strength training – all muscles

- Posture training – total body
- Cardiovascular – student dependent

The skill section can be built from information found in many of these modules.

Proper cueing and instructions are crucial for successful learning. Students have different ways of learning: most learn by seeing (visual), some by hearing (auditory), and some by doing (kinesthetic). For effective learning, the instructor should teach with a variety of styles to allow all participants to have maximum learning.

To successfully convey information, several teaching cues can be used:

- Anticipatory - tells students what is to come next and this needs to be done in a timely manner
- Movement - this directs students footwork and direction and enforces confidence and success
- Motivational - increase self-confidence and adherence
- Educational - provides applicable information to help students acquire more from their workout
- Alignment - posture and form are essential in efficient movement patterns
- Safety - cues that keep the student safe
- Verbal - simple, direct, and specific
- Visual - perfect demonstration, hand cues, and high energy

It is important that the instructor perform exercises correctly when giving verbal clues. Visual demonstrations appear to be the most effective when learning new motor skills. Even when the auditory information is different than the demonstration, most learners will mimic the demonstration. If the class is divided into groups, while one group is working and one is waiting - observational learning becomes very important and much information can be learned thorough watching others.

Proper alignment and safety cues are instrumental in running an organized and effective group class. Motivational cues are used for continual encouragement. Descriptive cues use imagery and visualization to help

students integrate a mind and body awareness for ultimate neuromuscular movement sequences.

Students learn in different stages. The first stage of learning is to develop an understanding of the goal of the movement and feedback is important in this phase. Both what they are doing incorrectly and what they need to do to correct the error are needed in this stage. The second stage is to perfect the movement so there is little cognitive or physical effort and the feedback needed is more descriptive of the error not how to correct it. Learners should be encouraged to evaluate their own performance; this process nurtures the problem solving skills of the learner and develops self-efficacy. Learners need more feedback in the earlier stages of time. The proper amount of feedback is also important, too much feedback can be detrimental to learning especially in the later stages.

Communication

Good communication skills are essential when working with seniors. Positive feedback about strategy performance will determine how well the students will perform in the future. Showing general concern and interest is an important asset to being a good instructor. Positive language and building self-efficacy through optimistic working is key to empower students to continue to move outside their comfort zone.

Feedback

1. **Augmented** – information from outside source
2. **Knowledge of results** – information on outcome of task
3. **Knowledge of performance** – information about the quality of movement

There should be a small time gap between the completion of a task and the feedback. Learners should estimate the accuracy of their performance.

More is not better. Too much feedback can make the learner overly dependent. Get the learner to evaluate, feel, and understand their movement patterns and skills. Error correcting and positive feedback should be interspersed for self-efficacy.

This class can be taught as a group or broken down into smaller groups. This could be done in a station layout as a circuit format. Groups can also be divided by skill level if needed. More class breakdown information can be seen in Module 11.

3. Cool-down

- Gradual reduction of intensity
- Lower heart rate and respiration
- Relaxation
- Breathing
- Posture awareness
- Flexibility
- Inspirational reading
- Review of class

Declines in flexibility with advancing age have been identified as contributing to the development of a number of acute and chronic conditions including postural deviations (kyphosis, forward head), low back pain and rotator cuff tendinitis. However, the impact of these declines on physical function is less clear. In addition, the functional benefits of stretching for older adults are also unclear.

A recent systematic review [Stathokostas, Little, Vandervoort and Paterson (2012). Flexibility training and functional ability in older adults: a systematic review. *Journal of Aging Research*] concluded that the evidence for flexibility training to positively influence functional ability is inconclusive.

The authors state:

“From the present review, there is not enough consistent evidence to make recommendations for any specific prescriptions of type, frequency, duration, or length of program related to flexibility training; particularly no specific recommendations can be made regarding the program or dose response of flexibility training to the focus of the present study, the transfer of flexibility gains to functions of daily life, or ability to live independently.”

“While flexibility training interventions synthesized in the present paper have been shown to increase flexibility and joint ROM, no consistent increases in functional outcomes have been observed. Therefore, future studies should consider the relationship that increased flexibility and

joint ROM have with functional outcomes to determine if the increased flexibility is beneficial and worthwhile in terms of maintaining or increasing functional capacity for healthy older adults.”

Based on the current evidence it is reasonable to conclude that flexibility training is secondary to other forms of training that have been proven to be more closely linked to functional ability. In the Functional Aging Training™ model flexibility exercises should target areas of significant deficit, especially if they have an acute or chronic condition that has been directly linked to poor flexibility, as well as the hips and low back.