

EXRS 3480 / 7800 Exercise Science Strength Training Learning in Retirement

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Time: 12:30-2:00 Tuesday and Thursday

Location: Ramsey Center Weight Room II

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Student coordinators: Casey DuBose and Natalie Harttman

Parking and LIR Coordinator:

Objectives of this class are to:

1. Provide students in training with exposure to members of LIR
2. Learn and experience the basic principles of strength training
3. Learn proper form for lifting
4. Increase strength
5. Evaluate progress

What to wear:

- Wear clothing that will allow you to move your joints through a full range of motion and athletic shoes.
- Bring a towel to each class.
- Drink plenty of water before and after class.
- Complete the modified PAR-Q-Modified.
- Learn of the NIA: A guide to exercise and NIA video.

Ramsey Center Usage

If you do not pay for access to the Ramsey Activity Center, access provided by this class is strictly for access to this class.

Unfortunately on the days we are not here use of the Ramsey Center is not approved.

The Program

Warm up

10 minutes at the beginning of class. – Lead by our wonderful UGA Exercise and Aging students!

Upper Body

Row for muscles between the shoulder blades

Chest press for chest and arms

Military Press for shoulders

Triceps back of upper arm; cable or free weights (knee to bench)

Lower Body - important for mobility

Leg press or squats - hips and legs

Leg curl (1 leg at a time); machine or weights

Leg extension - light weight to protect need

Abdominal

Other exercises are important but due to time we'll stick to this program and make suggestions for substitutions on these muscle groups or learn of exercises for other muscle groups.

Endurance Training

Rhythmic activity that works large muscle groups is important for endurance. For health benefits is five or more days / week, a minimum of 30 minutes of accumulated aerobic activity at moderate intensity. Moderate intensity is working at a level that feels "somewhat hard".

Training Specifics

Movement Range

Moving through the full range of motion (ROM) refers to exercising the muscle from the fully extended to the fully contracted position which moves the joint through its full ROM. Whenever possible perform the strength training exercise through the full range of motion. Research shows that older adults who strength trains increase their joint range of motion.

Breathing

As a general rule, exhale as you lift the weight and inhale as you lower the weight. In no circumstances should you hold your breath. Breath-holding increases pressure on the internal organs and decreases blood flow to the heart muscle and brain.

Order if muscle groups

1. Opposing muscle groups one flexion and one extension is important for maintaining balance. Example knee extension/knee flexion.
2. Young normal 3/2 quadriceps to hamstring muscle strength. Older adult 2/1 therefore it is important to build hamstring.

Training frequency

Two times/week yields similar benefits to 3x/week.

Micro trauma of the tissue is the stimulus for tissue-building; therefore allow 24-48 hours rest between strength training sessions for any muscle group.

Exercise Sets

A set is the number of consecutive repetitions, for example 10 leg extensions followed by a rest period constitutes a set.

For the first 2 weeks while working on form you'll perform one set of each exercise and then increase to two sets 8-12 repetitions. Strength gains are similar for those who perform 1, 2 or 3 sets. When performing more than one set 2-minutes rest break should separate the sets. This allows for recovery for your anaerobic energy supply.

Exercise Repetitions

In general each set should contain 8-12 repetitions. Higher number of reps with lower resistance increases muscular endurance. Lower number of reps with high resistance increases muscular strength.

Overload Principle

Loading muscle with progressively more resistance than they have previously encountered will develop new strength. Physical reserve is to develop new strength over and above that needed for routine daily tasks.

If you can leg press 100 pounds 12 times with good form for two consecutive sessions, increase your weight by 5-10%. Increasing number of repetitions before increasing weight is a general rule that decreases the risk of injury by preparing the muscle with endurance before strength.

Movement Speed

Movement Speed refers to the total time it takes to lift and lower the weight through the complete range of motion. Slower speed requires more muscle tension and less momentum and therefore increases your training stimulus and reduces the risk of injury. Research shows that 4-14 seconds all had similar strength gains across 13 muscle groups. Take 6 seconds to complete repetition (2 seconds to lift the weight and 4 seconds to lower the weight). Note: Lift and lower refers to the direction the weight stack is moving.

Programmatic Considerations

Combined Aerobic/Strength Training

Order is largely a matter of preference. Research shows similar strength gains regardless if strength training was performed before or after an endurance training session.

Warm-up and Cool Down

You should precede strength training with a gradual warm-up in which you do a full range of motion of your joints and gradually increase your heart rate with walking or rowing or some other endurance activity. These can be 5-10 minute transition exercises. The abdominal work-outs the last in the set and will provide a transition from the work out to cool down and rest. As the strengthening exercises will take the full time, I invite you to arrive at the Ramsey Center early and warm-up before coming to the weight room.

Stretching

After working a muscle group each group should be stretched. If you notice soreness stretch all muscle groups between sessions. These and additional stretching can and should be done on other days.

Adapting Routine

One of the great aspects of strength training is that it can be adapted...not everyone has to do the same thing! If you have a pulled muscle or limited range of motion, talk with us about how to adapt the program. Listen to your body and communicate with us when you need program changes.

Lifestyle Recommendations

A strength and endurance program should be only a part of an active lifestyle. Research indicates that people that work activity into their life at several points through life, remain active far into later years.

References and Resources

1. Allen, Lynn, Active Older Adults, Ideas for Action.(1999) Champaign Urbana: Human Kinetics.
2. Cress, M. E.; Buchner, D. M.; Prohaska, T.; Rimmer, J.; Brown, M.; Macera, C.; DePietro, L., and Chodzko-Zajko, W. (2004) Physical activity programs and behavior counseling in older adult populations. Medicine and Science in Sports and Exercise. 36(11):1997-2003.
3. NIA. (1998). Exercise: A guideline from the National Institute on Aging. 1-800-522-2222.
4. Wescott, W. L., &Baechel, T.R. (1998). Strength training past 50. Champaign, IL: Human Kinetics.

Additional Resources

1. NIA exercise video: at same number as above: \$7.00
2. Sequin, R.A., Epping, J.N., Buchner, D.M., Bloch, R, Nelson, M.E. Growing Stronger. CDC: www.cdc.gov/nccdphp/dnpa/physical/growing_stronger/index.htm
3. T' Ai Chi Fundamentals (video) Tricia Yu and Jill Johnson. Uncharted Country Publishing. 800-488-4940; PO Box 3332 Madison WI 53704