Exercise Modes

Treadmill

How to:

- Familiarize yourself with the control panel, particularly the “emergency off” button.
- Do not start treadmill motor while standing on the belt.
- In early stages of treadmill training use handrail for support until you feel comfortable staying in the center of the belt.
- Always warm up by walking slowly (for example, 2–2.5 mph) and gradually increasing the pace whether you are going to do a walk or run workout.
- For longer workouts, for example > 10 minutes, use a fan for cross-ventilation.
- Many treadmills are programmed with 6–15 preset workouts. It is recommended that you begin with manual mode and set the speed and % grade (hill) conservatively.
- As with all stationary aerobic exercise equipment, ensure you have adequate cross-current ventilation—i.e. use a fan to cool your trunk and upper body.

Stationary cycle

How to:

- Adjust the seat height of an upright exercise bike to allow a 10- to 15-degree bend in your knee when sitting on the bike seat.
- A seat that is too high can result in pain in the back of the knee. A seat that is too low or too far forward may cause pain in the front of the knee.
- Toe clips can help improve the distribution of “push-pull” forces on the legs, which will reduce unnecessary muscular fatigue in the calves and thighs.
- Start pedaling to activate the machine console. Select your desired fitness program by pressing the buttons on the console.
- Adjust the handlebars to allow for a comfortable forward-leaning position. Handlebars that are too high will put excessive pressure on your seat, while handlebars that are too low may result in lower back soreness and arm and shoulder fatigue.
- Pedal crank speed can vary widely but generally can be between 50–90 rpm.
- Resistance – start light to warm up and then gradually increase to desired workout.

Spin cycles

Spin cycles have a weighted flywheel in the front mimicking the feel of an outdoor bike that is actually propelled by the pedals. When you tighten the resistance and come out of the saddle, you absolutely feel like you're cycling up a steep hill. Spin-style bikes are made of stronger steel than regular stationary cycles, built for the rider to come out of the saddle and grind on the pedals, which isn't often done on a regular stationary bike. These cycles are built for high rpm (> 100 rpm) and consequently are primarily used in Spinning cycle classes. Spin cycling is intensive and should be reserved for those who are sufficiently fit. Besides being a great form of aerobic activity (burning between 400–600 calories in 40 minutes), spin cycling is also beneficial in strengthening the muscles of the lower body.

How to:

- Spinning should be taught in a class where a qualified spinning instructor can monitor and guide your workout level.

- Spinning classes can be very intense, often reaching or exceeding maximal aerobic capacity, consequently participants should be in at least a moderate level of fitness without symptoms of cardiometabolic disease.

- Similar to stationary cycle riding, spinning with an incorrect seat setting can also lead to knee overuse injury. Set your seat height so your knee is slightly bent at the bottom of the pedal stroke.

- Set the handlebars so that they are level with the seat. When you lean forward and place your hands on the bars, there should be a slight bend at your elbows.

- Spinning every day is not recommended for most individuals. Overuse injuries (especially in the knee) can occur with everyday spinning.

- Stiff-soled shoes with good cross-ventilation are imperative. (Running and aerobic shoes, which are soft-soled, may leave your feet numb by the end of the class.)

- Two towels are recommended, one for wiping away sweat and one for draping over the handlebars so your hands won't slide out of position.

- A full water bottle should be readily available because sweat loss can be substantial. Most spinning bikes are equipped with a water bottle cage so you can place your H2O within easy reach.

Recumbent cycles

A recumbent bicycle is a stationary cycle that places the rider in a laid-back reclining position. Pedal forces are different and in some contrast to upright cycles where your body weight and legs are directly over the pedal crank axis. Stationary recumbent cycles are often preferred for patients with impaired balance or cardiometabolic disease, because they are generally easier to use and do not generate the same cardiorespiratory stresses as upright cycling, at least at sub-maximal work loads—although significant aerobic benefits can be attained with this form of cycling.

How to:

- Toe clips can help with improving the distribution of “push-pull” forces on the legs which will reduce unnecessary muscular fatigue.
- Utilize the hand grips on the sides of the seats (these are a feature of most recumbent bicycles). They provide stability through your workout.
- The seat should be adjustable. You should adjust the seat-pedal crank axis such that there is nearly total extension of the legs (slight bend in knee) when cycling.
- You can adjust the pedal tension to make it harder or easier to pedal, but it is recommended that in early stages of training you adjust the resistance to allow at least a 10-minute workout.
- Most stationary recumbent bicycles come with digital displays that show how fast you are pedaling, how many calories (estimated) you are burning, and distance you have ridden.

Elliptical trainer machines*

Studies show that elliptical trainers provide the same cardiovascular benefits as running but have far lower impact to the joints. This is ideal for those with joint pain such as arthritis. An elliptical cross trainer is comparable to a treadmill in its exertion of leg muscles and the heart. Ellipticals produce an intermediate range of leg motion between that of stationary cycles and treadmills.

How to:

- Step onto the machine, facing the console. Typically, nothing will happen until you start pedaling and turn on the machine.
- To turn on the monitor, start pedaling by pushing the pedals in a forward motion with your feet, and pushing and pulling on the handles evenly.
- Pedaling in a forward motion is recommended because it's easier to balance, it simulates real movements and is not as tough on the knees as backward pedaling.

- Some elliptical trainers have adjustable stride and incline controls: the stride length should be adjusted to your height and comfort level. Whereas, the incline can be adjusted to steeper grades, but only as your endurance improves

- Stand upright on the machine and do not lean forward or backward. You should be able to balance without leaning the handles for support.

*Note that there is a wide variety of elliptical machines, with some being poorly constructed that do not provide a very efficient or comfortable workout, and may even cause overuse stress on the legs and knees. One gauge of poor equipment is lingering joint pain after a workout—often due to jerky or rough pedal resistance. Avoid these poorly constructed machines.

Preset Elliptical Workout Programs

Most elliptical trainers (including many stationary cycles and treadmills) have at least 5 or 6 preset user-specific workout programs such as:

Manual
Random
Fat-burning
Interval
Endurance
Heart rate control

For those just beginning an elliptical training program it is recommended that you begin with the *Manual* mode and adjust the level (pedal resistance) gradually, so that you can pedal at least 5 minutes. The *Fat-burning* mode, while a good overall endurance-type workout, implies that this mode is necessary for fat burning, i.e., weight loss—which is an oversimplification, as nearly all sub-maximal workout programs utilize fat at some level. *Interval* and *Random* workouts probably should be reserved for those who are at least moderately fit.

Stair stepping machines

Stair climbers/steppers can build lower leg and thigh strength, stamina, and cardiorespiratory endurance very quickly, primarily because they employ your body weight—in addition to stepping resistance and stepping rate—as the principle work stress. There are two main types of stair climbers: motorized and manual. The more expensive *motorized stair steppers* are the kinds you see in health clubs, and they have motors that create the step movement. You can program the motorized steppers with various stair climbing workouts and store your results. The cheaper stair steppers are the manual type which run on air pressure pushed through pistons.

Stair stepping machines can generate significant cardiorespiratory work stress very quickly and for this reason ensure that you are sufficiently fit prior to engaging in a full step workout. As a rule, stair stepping machines are *not advised* as first choice exercise for those who are beginning an indoor aerobic exercise program, as graded treadmill exercise may be a better and safer choice in early stages of training.
How to:

- Before you get on: Read the instructions on the machine.
- The stepper should have side rails, a rail in the front, and/or moving posts on the side.
- When using the stationary rails, your hands should rest lightly to assist with balance.
- Posture should be upright. Stand tall and look forward. Make the legs do the work.
- Cross-ventilation is essential for stepping workouts because of the relatively high energy expenditures.
- Understand how to increase and decrease the intensity of the workout.
- Stepping rate: Choose an initial stepping rate that slightly raises your perception of effort and pulse rate. *Remember, the faster the pedals move, the faster you must move to keep up!* More pedal resistance allows you to slow your stepping rate.
- The height of each step should approximate the stepping action for climbing a normal step. The stepping height should feel comfortable on the knees and ankles.

Rowing machines

Rowing is a great cardiorespiratory endurance and muscular endurance and strength-building exercise. The smooth, low-impact rowing motion works the whole body, is easy to learn and can challenge any fitness level. With the proper technique, rowing will work all the major muscle groups of the core, arms and legs in a balanced manner. One of the most efficient rowing machines is the *Concept2* machine which has been a favorite in fitness centers for nearly 30 years. Be sure to warm up before your workout, i.e. take a short 5-10 minute walk.
How to row:

- Read instructions on how to row (see example below).
- Sit on the seat, strap your feet into the foot pads and grab the handles with an overhand grip.
- Extend your arms straight toward the flywheel, and keep your wrists flat.
- Slide forward on the seat until your shins are vertical.

- Lean forward slightly at the hips.
- Begin the pull-back or drive by extending your legs and pushing off against the foot pads. As your knees straighten, gradually bend your arms and lean your upper body back.
- Finish with a slight backward lean.
- Bend your elbows and pull the handle into your abdomen. Extend your legs.
- Extend your arms by straightening your elbows and returning the handle toward the flywheel.
- Lean your upper body forward at the hips to follow the arms.
- Gradually bend your knees and slide forward on the seat to the start position.
- Similar to the start position, extend your arms straight toward the flywheel and keep your wrists flat. Slide forward on the seat until your shins are vertical.
- Lean forward slightly at the hips.
- You are ready to take the next stroke.

Stability ball exercise

A stability or exercise ball is a ball constructed of elastic soft plastic, with a diameter of approximately 35–85 centimeters (14–34 inches) and filled with air. The air pressure is changed by removing a valve stem and either filling with air or letting the ball deflate. Stability ball exercises are often central to a program designed to improve core stability (abdomen, trunk area). In recent years, health and fitness practitioners have given greater and greater emphasis to core stability training for injury prevention, rehabilitation and performance enhancement.

Core Exercises on the Ball

This core workout focuses on using an exercise ball to strengthen all of the muscles in the abs and back including the *rectus abdominis, transverse abdominis, internal/external obliques* and the *erector spinae.*

Examples of ball exercises:

Back Extension

Position the ball under your hips and lower torso with the knees straight or bent. With hands behind the head or behind back, slowly roll down the ball. Lift your chest off the ball, bringing your shoulders up until your body is in a straight line. Make sure your body is in alignment (i.e., head, neck, shoulders and back are in a straight line), your abs are pulled in, and that you don't hyper-extend the back. Repeat for 12–16 repetitions (“reps”).

Butt Lift

Lie on the ball with the head, neck and shoulders supported, knees bent and body in a tabletop position. Lower the hips towards the floor without rolling on the ball. Squeeze the glutes to raise hips until body is in a straight line like a bridge. Hold weights on the hips for added intensity and make sure you press through the heels and not the toes. Repeat for 12–16 reps.

Hip Extension

Lie down with feet heels propped on ball. Keeping abs tight, slowly lift your hips off the floor (squeezing the glutes) until body is in a straight line. Hold for a few seconds and lower. For added intensity, lift the hips and then take one leg off the ball, hold for a moment and lower. Repeat for 12–16 reps.

Ab Roll

Place your hands on the ball in front of you, arms parallel. Pulling your belly button towards your spine and tightening your torso, slowly roll forward, rolling the ball out as far as you can without arching or straining the back. Push the elbows into the ball and squeeze the abs to pull the body back to start. Avoid this move if you have back problems. Repeat for 12–16 reps.

Ball Rotation

Lie with ball under shoulders and lower back and hold a light or medium-sized medicine ball over the chest. Hold your body in a straight line from hips to knees. Tightening your glutes and abs, slowly twist your body to the left, sweeping medicine ball parallel to the floor, then back up, repeating on the other side. Watch your knees on this move, and allow them to turn naturally with the body so you don't injure them. Repeat for 12-16 reps, alternating sides.

Ball Twist

Get into a pushup position with the feet on either side of the ball (turning your ankles so that you are hugging the ball). Hold body in a straight line with abs pulled in, hips straight and hands directly under shoulders. Slowly rotate the ball to the right while trying to keep your shoulders level, then to the left. Repeat for 12-16 reps, alternating sides.

Resistance training equipment

Resistance training, when executed properly, can improve muscular strength and muscular endurance and can also increase lean muscle mass; which can help improve insulin sensitization and body composition. Generally speaking, there are three methods of resistance exercise: free weights, resistance machines, and specific exercises that use the body as the resistive force, for example, various *hatha yoga* programs.

How to:

For those beginning a resistance training program with free weights or a resistance machine, the following are recommendations made by the American College of Sports Medicine in 2009:

1. For **novice** (untrained individuals with no resistance training (RT) experience or who have not trained for several years) training, it is recommended that loads correspond to a repetition range of an 8–12 repetition maximum (RM).

2. For **intermediate** (individuals with approximately 6 months of consistent RT experience) to advanced (individuals with years of RT experience) training, it is recommended that individuals use a wider loading range from 1 to 12 RM in a periodized fashion with eventual emphasis on heavy loading (1–6 RM) using 3- to 5-min rest periods between sets performed at a moderate contraction velocity (1–2 seconds lifting; 1–2 seconds lowering).

3. **Progression:** When training at a specific RM load, it is recommended that 2–10% increase in load be applied when the individual can perform the current workload for one to two repetitions over the desired number.

4. The recommendation for **training frequency** is 2–3 days/week for novice training, 3–4 days/week for intermediate training, and 4–5 days/week for advanced training. Similar program designs are recommended for hypertrophy training with respect to exercise selection and frequency.

5. For loading, it is recommended that loads corresponding to 1–12 RM be used in periodized fashion with emphasis on the 6–12 RM zone using 1- to 2-min rest periods between sets at a moderate velocity.

6. Resistive loads no greater than a load that allows *at least* 10 repetitions should be used in those who are in the very early stages of resistance training.

7. Higher volume, multiple-set programs are recommended for maximizing hypertrophy. Progression in power training entails two general loading strategies: 1) strength training, and 2) use of light loads (0–60% of 1 RM for lower body exercises; 30–60% of 1 RM for upper body exercises) performed at a fast contraction velocity with 3–5 minutes of rest between sets for multiple sets per exercise (3–5 sets).

References:

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