



Welcome!

The LEA Lab is happy to provide you with detailed at-home and gym-based resistance training protocols.

We recommend starting with a warm up, followed by a workout option of your choice, and ending with a cooldown.

The American College of Sports Medicine offers the following screening for people starting a new exercise program:

1. Do you currently participate in exercise?
2. Do you have any known cardiovascular, metabolic, or renal diseases?
3. Are you currently experiencing any symptoms like chest pain, unusual shortness of breath, or dizziness?

*If you answered question 2 or 3 "YES", please consult a medical professional before beginning to exercise. Though it is okay to feel like you're working hard, exercise should never be painful. Stop exercising if you are in pain.

Citation: Megal, M., & Riebe, D. (2016). New preparticipation health screening recommendations: What exercise professionals need to know. *ACSM's Health and Fitness Journal*, 20(3), 22-27.

Printable PDF links: *Warmup, At-Home, Gym-Based, Cool Down*

Warm-Up

Full-Body Cardio (5 mins.)

Most gyms have several cardio options. Pick a machine of your choice, aim for a speed that you could hold conversation at:

- Treadmill (brisk walk or jog)
- Stationary bike
- Rowing machine
- Elliptical machine

If working out at home, consider the following alternatives:

- Jogging in place
- Walking or running outside
- Jump-roping
- Jumping jacks

Arm Circles (10 x forward, 10 x backward)

Purpose: Increase blood flow to arms and prepare muscles for activity, reducing risk of injury

With arms fully extended, make large circles forward, moving slowly and carefully to avoid over-extending the shoulder. Repeat, going backwards.



Torso Twists (10 x each side)

Purpose: Prepare core and spine for physical activity and reduce stiffness.

Stand shoulder-width apart and twist your torso, looking over your shoulder behind you when you twist to each side.



Walking Lunges (10 x each side)

Purpose: Increase blood flow to the quadriceps

Keeping your core engaged and chest open, drop your weight DOWN and bring your back knee toward the ground, pausing before reaching the floor. The front knee should be lined up with the ankle below it, and both knees should make 90 degree angles. Rise up and repeat, alternating legs.



Squats (10x)

Purpose: Enhance range of motion and bring blood flow to the glutes and quads

Start by standing with feet shoulder width apart. You may clasp your hands together in front of you or reach out. Keep your chest centered as you **DROP** your weight down. Send your hips back as you drop, engaging your glutes and supporting your back. Squeeze your glutes as you move UP back to standing position. To target the abductor muscles of the inner thigh, try Sumo Squats. Simply stand a few inches wider and point your toes OUT.

Important Form Notes:

- Keep your back and your shins parallel as you squat.
- Squat down until your quads are flat, parallel with the ground.
- Stick your butt OUT to avoid “hip dips”, or tucking of the lower back, which may cause pain!



Gym-Based Resistance Training

Leg Press (3 x 10)

Target Muscle Groups: quadriceps, gluteus maximus, hamstrings

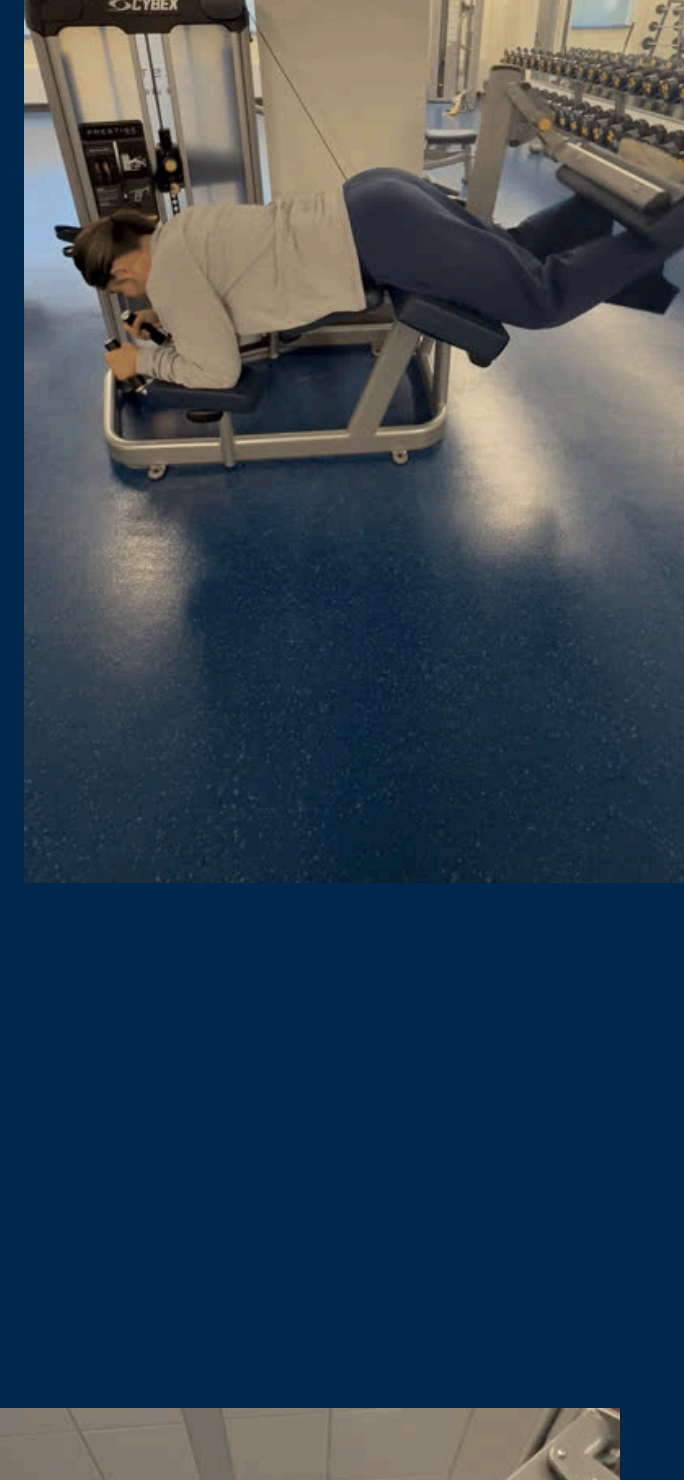
- Position yourself comfortably with about 90 degree bend in the knees.
- Place feet flat and centered on the platform, shoulder-width apart.
- Push AWAY with grounded feet, (2-3 second extension).
- Pause at the top of the movement, and be careful to avoid locking your knees.
- Lower down (2-3 second flexion).



Hamstring Curls, Prone Machine (3 x 10)

Target Muscle Groups: Hamstrings

- Lie down comfortably on your belly and allow your weight to rest on forearms (leaning slightly forward).
- Make sure leg bar is on your lower calves (not ankles, not upper calves!) and adjust if needed.
- Lift bar towards your buttocks with your feet.
- Aim for full range of motion, (2-3 seconds extension and flexion).
- Avoid excessive force, do not let the weights clang.



Chest Press (3 x 10)

Target Muscle Groups: Pectoralis major, anterior deltoids

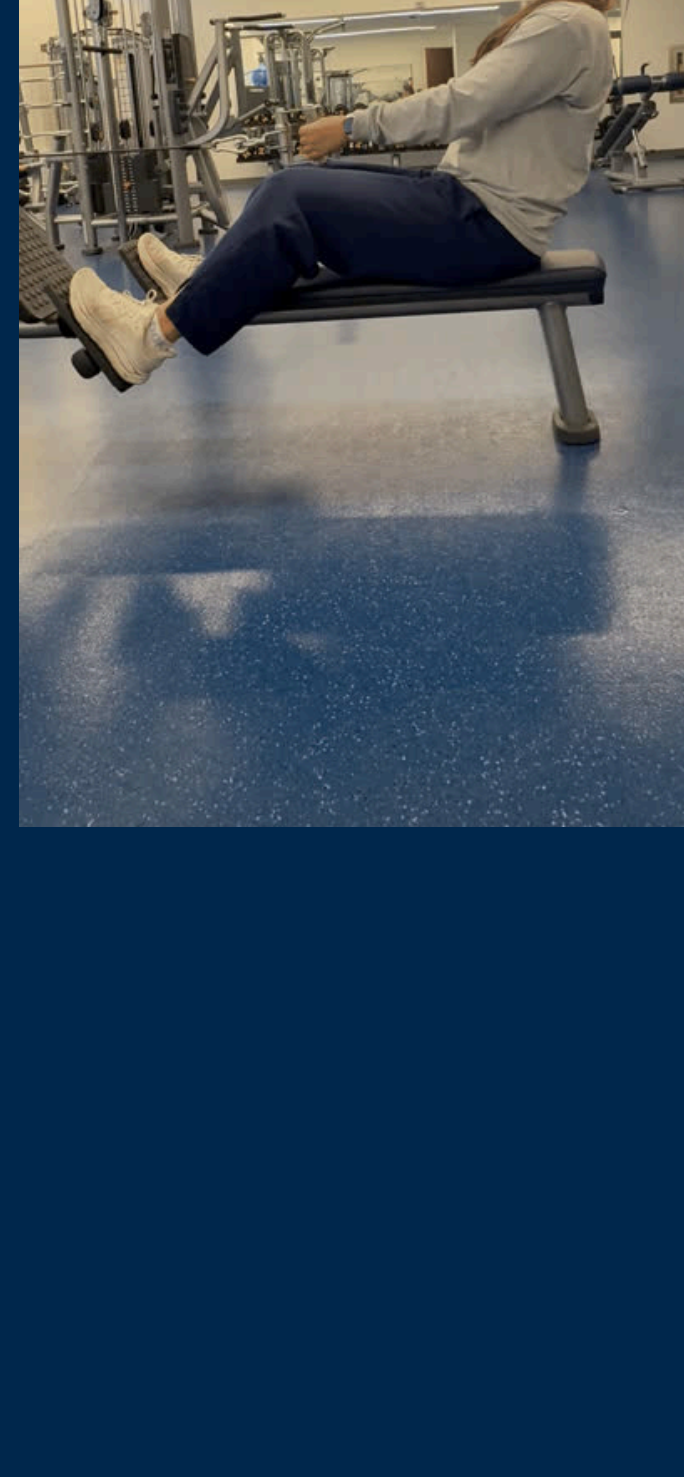
- Sit comfortably with feet flat on the floor.
- Grip bar, elbows at 90 degree angles, and push FORWARD in unison.
- Exhale on the push!
- Avoid locking the elbows on the extension.
- Lower bar, pause just before reaching 90 degree bend in the elbows. Do not hyper-flex



Seated Cable Row (3 x 10)

Target Muscle Groups: Latissimus dorsi (lats), trapezius (traps)

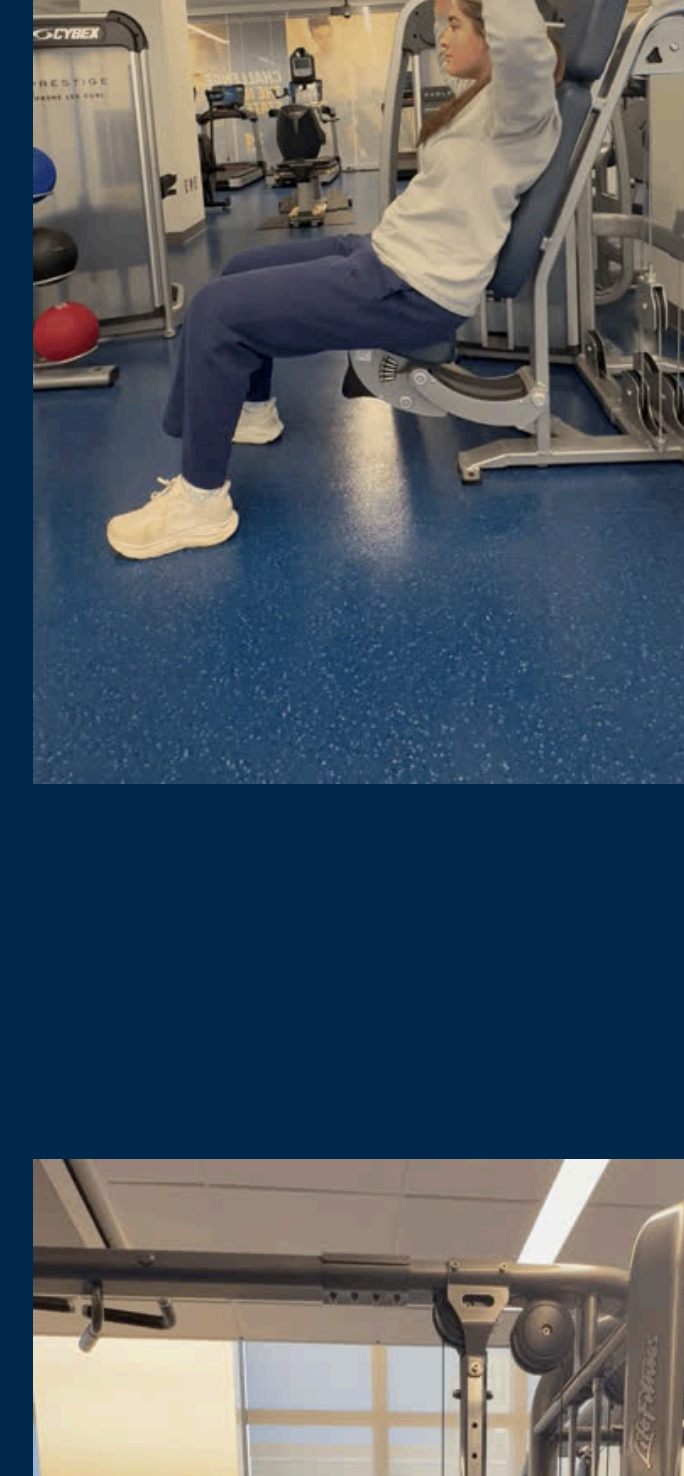
- After setting weight, sit, grab the handle with both hands, then place your feet flat on the platform.
- Keeping a light bend in the knees, lean back with your chest out, sitting up tall.
- Bring weight IN towards your core and parallel with your hips.
- Squeeze shoulder blades as you draw in (hold 1-2 seconds).
- Release weight slowly, just before arms are fully extended. Do not lean forward, do not hyper-extend.



Overhead Press (3 x 10)

Target Muscle Groups: Anterior deltoid (front of shoulder), triceps brachii (back of arm)

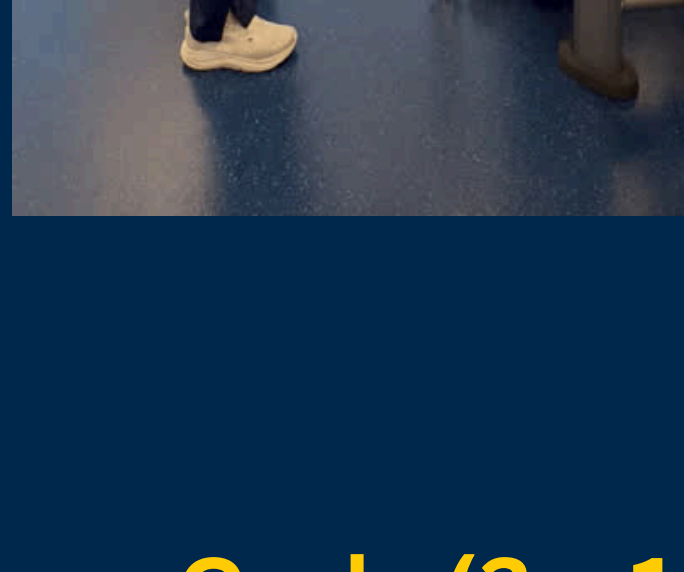
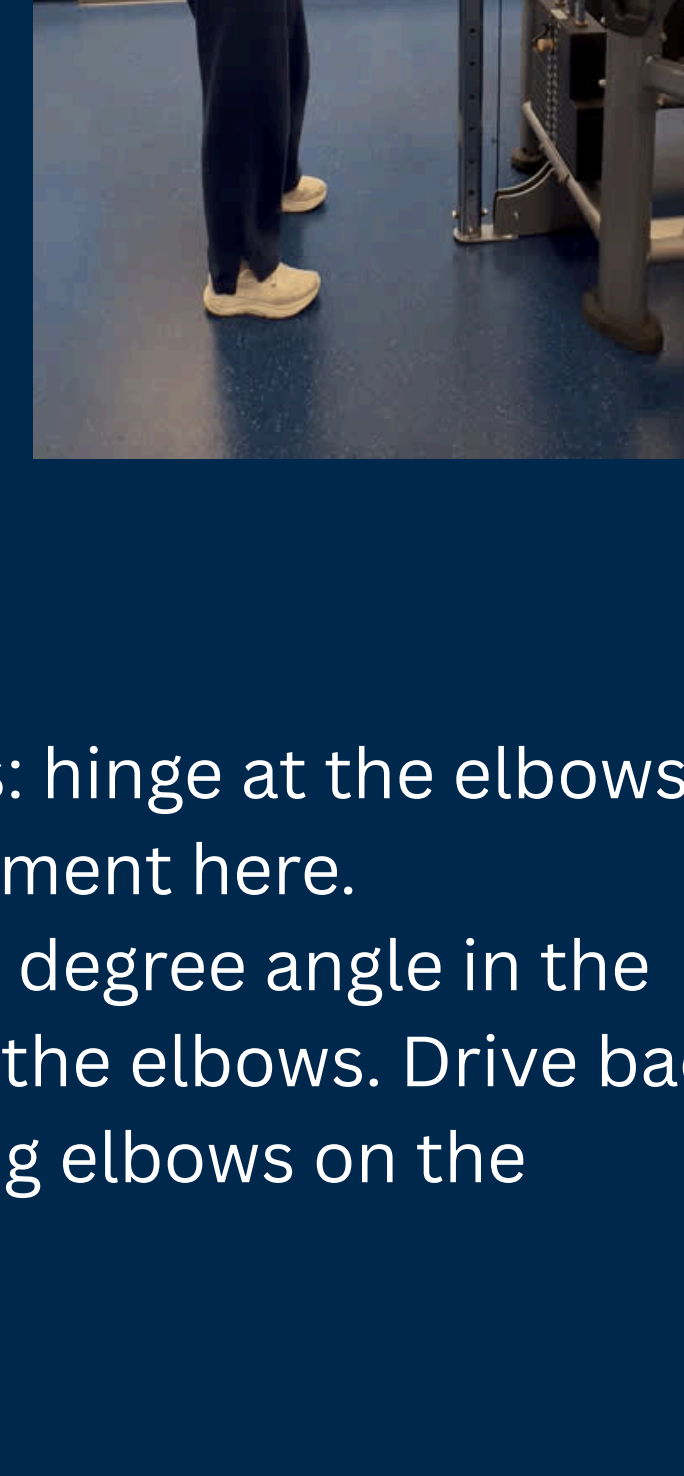
- Sit comfortably with feet flat on the floor.
- Grip bar from below, elbows at about 90 degree angles, and push UP in unison. Exhale on the push!
- Avoid locking the elbows on the full extension!
- Lower bar, pause just before reaching 90 degree bend in the elbows. Do not hyper-flex



Triceps Extension (3 x 10)

Target Muscle Groups: Triceps brachii (back of upper arm)

- Bring handle of choice to eye-level, step close and grip comfortably.
- With knees bent and slightly lean forward, bring the handle DOWN towards the thighs.
- Bring elbows close to ribcage.

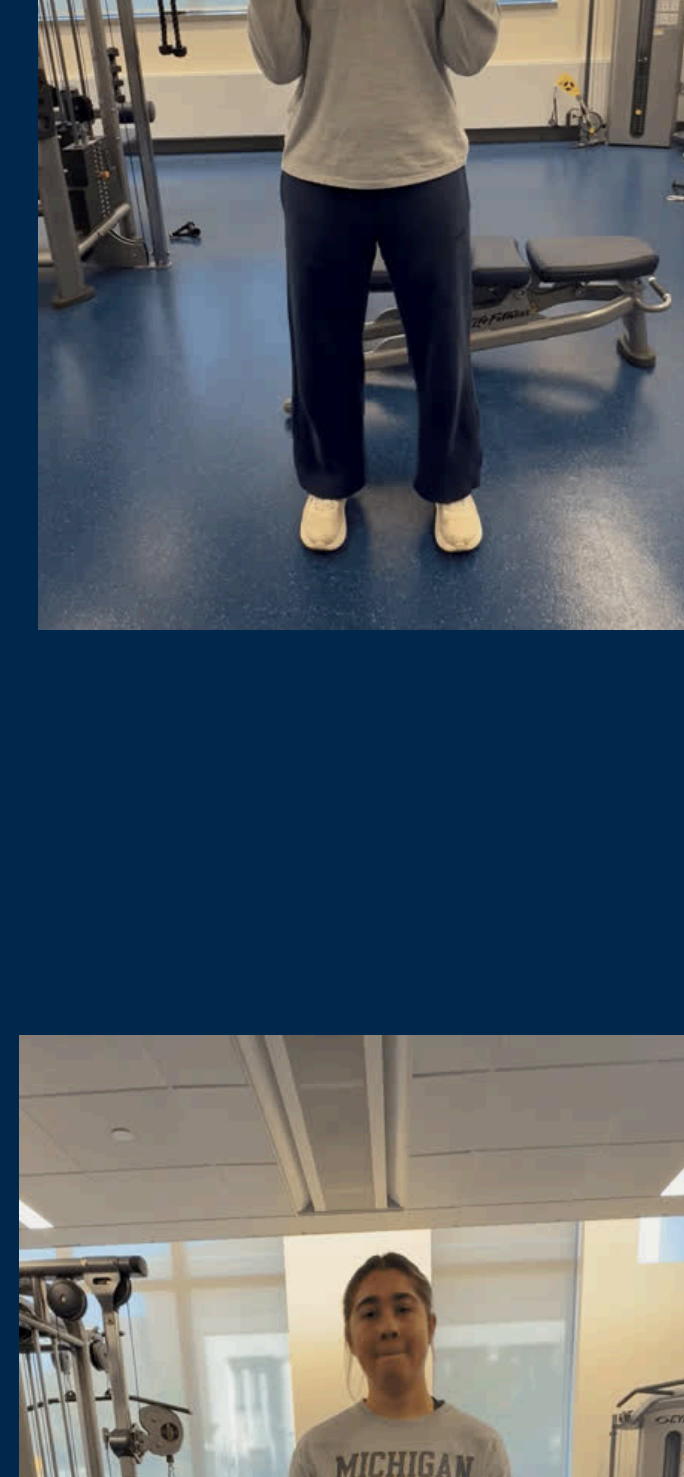


- Make “T-Rex” arms: hinge at the elbows, isolating the movement here.
- Raise weight to 90 degree angle in the elbows, hinging at the elbows. Drive back down, avoid locking elbows on the extension.

Bicep Curls (3 x 10)

Target Muscle Groups: Biceps

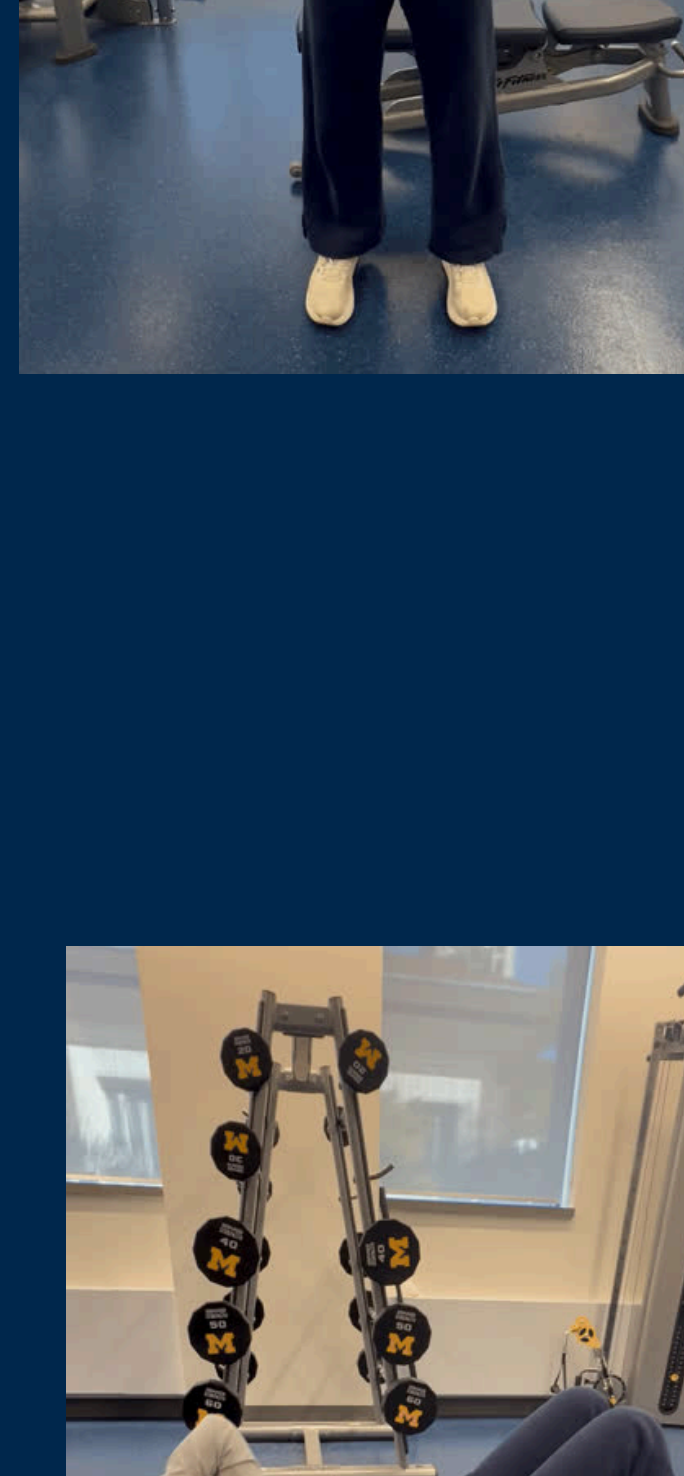
- Stand with feet shoulder-width apart. Bring your shoulders back.
- Palms face forward, hold weights horizontally.
- Bring weights UP to shoulders in unison.
- Carefully lower back down, extending fully without locking elbows.
- Allow for a light swing/momentum but do NOT rely on momentum to complete this exercise!



Hammer Curls (3 x 10)

Target Muscle Groups: Biceps

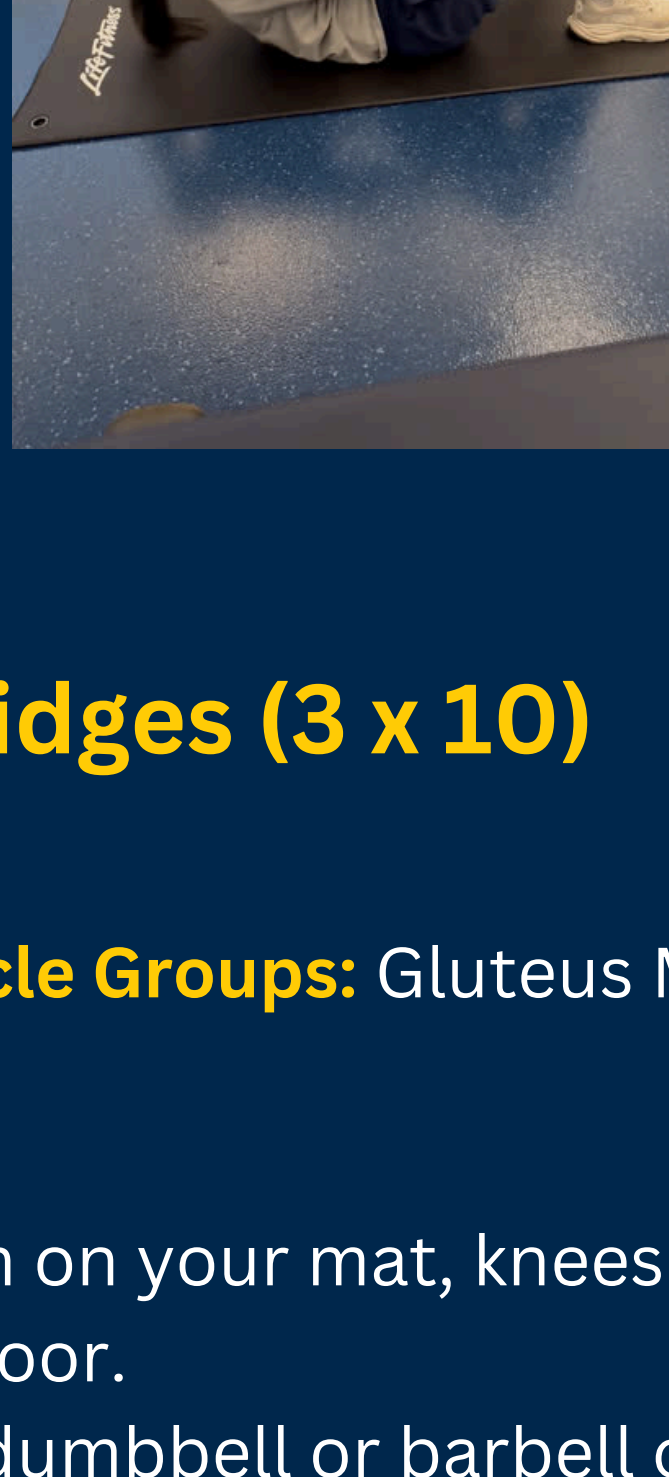
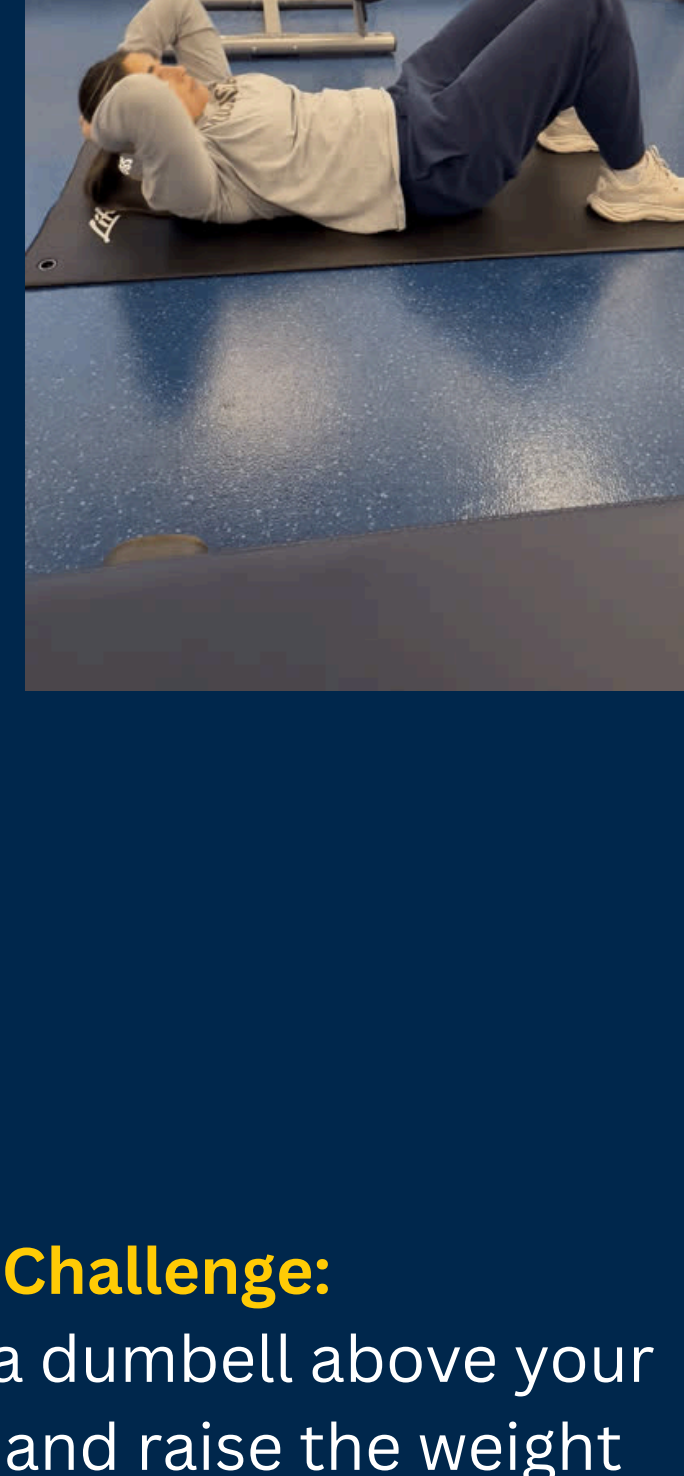
- Stand with feet shoulder-width apart. Bring your shoulders back.
- Hold the weights so that the heavy side faces forward, palms facing your body.
- Bring weights UP to shoulders in unison.
- Carefully lower back down, extending fully without locking elbows.
- Allow for a light swing/momentum but do NOT rely on momentum to complete this exercise!



Abdominal Crunches (3 x 10)

Target Muscle Groups: Rectus abdominus, obliques

- Lie down on your mat, knees bent and feet flat on the floor.
- Cross arms across chest or clasp behind head.
- Squeeze the core as you LIFT your shoulder blades to the floor. If holding weight, bring it UP with you.
- Relax your neck!
- Hold 2-3 seconds, and lower back down.



Extra Challenge: Hold a dumbbell above your torso and raise the weight with your body.

Glute Bridges (3 x 10)

Target Muscle Groups: Gluteus Maximus, hamstrings

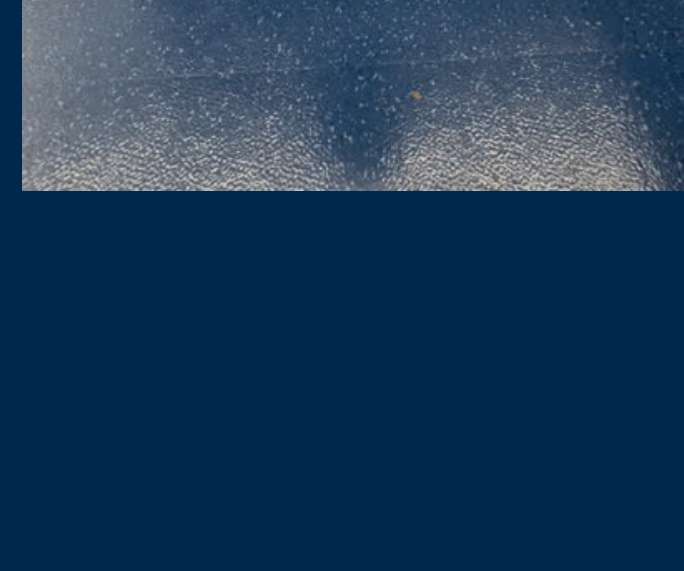
- Lie down on your mat, knees bent and feet flat on the floor.
- Place a dumbbell or barbell comfortably on your hips.
- Push UP through your heels, squeezing the buttocks as you lift the weight as high as you can!
- Lift until you have made a flat “bridge” with your body (hold 2-3 seconds)then carefully lower down.



Hip Thrusts (3 x 10)

Target Muscle Group: Gluteus Maximus, hamstrings

- Sit on the ground with your upper back (just below shoulder blades) resting against the edge of a sturdy bench.
- Bend your knees and place your feet flat on the floor, about shoulder-width apart.
- Roll a barbell over your hips (use a pad or towel for comfort), or place a dumbbell on your lap.
- Brace the core and tuck the chin as you drive through your heels and lift the weight UP.
- Your body should now form a straight line from shoulders to hips. Squeeze the buttocks (hold 1-2 seconds).
- Lower hips until you are facing forward again and your bottom almost reaches the floor. Repeat repetitions.



At-Home Resistance Training

Goblet Squat



Quantity:

- For Muscular strength: 3 sets of 6 reps with a weight
- For Muscular endurance: 3 sets of 15 reps

Modifications:

- To make the exercise easier: Squat at a higher depth than previous
- To make the exercise more challenging: Spend 5 seconds going into the squat, then 3 seconds standing up from the

squat.

Hip Hinge

Target Muscles: Hamstrings, Glutes, Back

Instructions:

1. Place feet slightly wider than shoulder width apart with slight bend in knees
2. Cross arms over the chest, or use optional weight and extend arms to hold it in front of torso
3. Keeping chest up, back straight and core braced, send the hips straight back.
4. To stand back up, send hips forward and maintain proper posture.

FORM TIPS: Use wall as a boundary to examine when dipping too low



Quantity:

- For Muscular strength: 3 sets of 6 reps with a weight
- For Muscular endurance: 3 sets of 14 reps

Modifications:

- To make the exercise easier: Remove any weight
- To make the exercise more challenging: Complete the exercise standing on one leg and perform a single leg hip hinge

Push Ups

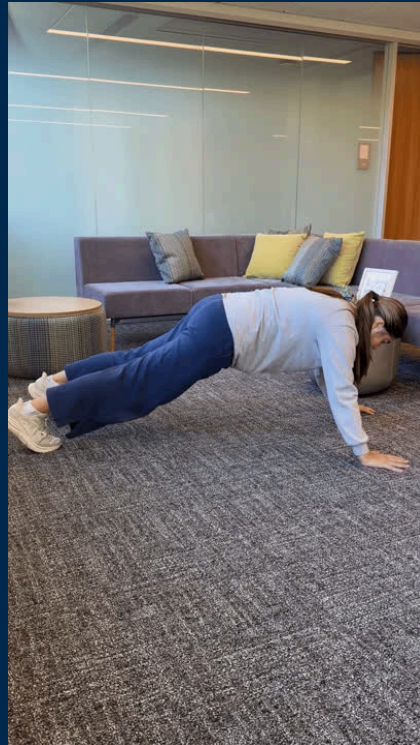
Target Muscle Groups: Chest, Triceps, Shoulders

Instructions:

1. Move into a tabletop position with arms slightly wider than shoulder width apart
2. Extend legs back in a high plank position with legs hip width apart and knees at a slight bend.
3. Lower your chest as close to the ground as possible, keeping elbows close to the side and chest, nose, and head in a straight line.
4. After pausing at the bottom, using hands push back up to the starting position while keeping body level throughout.

FORM TIPS:

1. Lead the movement with chest down, not head
2. Avoid letting your hips drop or back arch
3. Push through the palms of your hands, not fingers





Quantity:

- For Muscular strength: 3 sets of 5 reps
- For Muscular endurance: 3 sets of 10 reps

Modifications:

- To make the exercise easier: Place knees on the ground instead of the toes
- To make the exercise more challenging: Spend 4 seconds going down, then 4 seconds pushing back up

Door Frame Rows

Target Muscle Groups: Upper Back

Instructions:

1. Stand in a sturdy doorway with feet shoulder width apart and arms extended straight out
2. While gripping tightly to the doorframe, lean back until your body forms a straight line from head to heels
3. Bring chest towards the doorframe by bending elbows and squeezing the shoulder blades together
4. Slowly return back to initial position

FORM TIPS: Keep the core tight (blow out birthday candles!), ensure slow and controlled motion, visualize the shoulder blades pinching together



Quantity:

- Complete 3 sets of 10 reps

Modifications:

- To make the exercise easier: Stand more upright/ reduce the amount of lean in your stance
- To make the exercise more challenging: Spend 3 seconds going into the position, and 3 seconds straightening back out

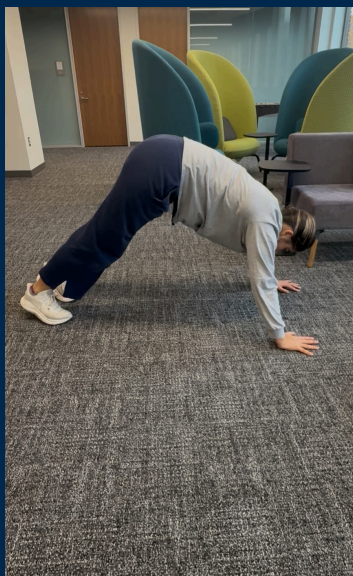
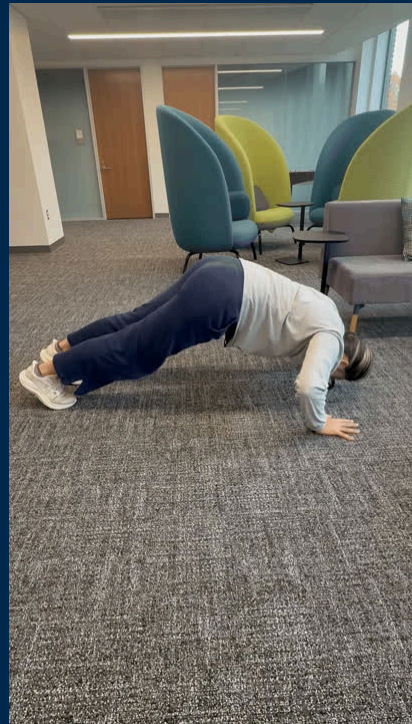
Body Weight Overhead Press

Target Muscle Groups: Shoulders, Chest

Instructions:

1. Start in a high plank position. Walk your feet towards your hands to achieve a downward dog pose
2. Bend your elbows close to your body and lower your shoulders towards the ground
3. Lower yourself as deep as possible, then push back up to the starting position

FORM TIPS: Keep elbows close to body, keep back in a straight line going down and up



Quantity:

- For Muscular strength: 3 sets of 5 reps
- For Muscular endurance: 3 sets of 10 reps

Modifications:

- To make the exercise easier: Increase the distance between your hands and feet
- To make the exercise more challenging: Using a wall as back support, try a handstand or handstand pushups. Or, simply take 4 seconds to lower the body and 4 seconds to raise it back up.

Triceps Dips

Target Muscle Groups: Triceps, back of arms

Instructions:

1. Find a sturdy table or chair and place your hands on the edge, with fingers pointing towards the feet and body in front in a straight line.
2. Lower your body down by bending your elbows until they are either parallel with the floor, or a deep stretch is felt in the back of the arms
3. Press back up through the palms to return to the starting position

FORM TIPS: Keep your back close to the chair/bench, relax the shoulders, and keep the chest straight up



Quantity:

- For Muscular strength: 3 sets of 5 reps
- For Muscular endurance: 3 sets of 10 reps

Modifications:

- To make the exercise easier: Reduce the depth of the dip by decreasing amount of elbow bend on the way down
- To make the exercise more challenging: Spend 4 seconds going down on the dip, and 3 seconds coming up from the dip.

Standing Shoulder Taps

Target Muscle Groups: Upper Arms

Instructions:

1. Standing shoulder width apart with a slight bend in the knees, and arms resting at your sides
2. Lift the arms to make a T shape, then bend the elbows and bring your fingers to touch the shoulders
3. Slowly return the arms back to the T-position, and repeat.

FORM TIPS: Make sure the core is tight and posture is comfortable, maintain slow and controlled movements



Quantity:

- For Muscular strength: 3 sets of 12 reps
- For Muscular endurance: 3 sets of 20 reps

Modifications:

- To make the exercise easier: Start with elbows slightly bent instead of the stretched-out T-position
- To make the exercise more challenging: Spend 5 seconds bending elbows, and 5 seconds returning back to the original position.

Ab Crunches

Target Muscle Groups: Core Muscles

Instructions:

1. Lie down on your back with knees bent and feet flat on the floor.
2. Cross arms over the chest or place behind your head
3. Keeping the core tight, lift your upper body and shoulder blades off the ground, as if someone was pulling a string up at your chin
4. Slowly lower yourself back to the ground and repeat

FORM TIPS: Keep the neck relaxed and ensure the shoulder blades are lifting off the ground, anchor the feet into the ground and solid bend in knees.





Quantity:

- For Muscular strength: 3 sets of 10 reps
- For Muscular endurance: 3 sets of 20 reps

Modifications:

- To make the exercise easier: Use your hands to assist body on the way up
- To make the exercise more challenging: Complete a total sit up by bringing entire torso off the ground

Glute Bridges

Target Muscle Groups: Glutes, Hamstrings

Instructions:

1. Lie down on your back with knees bent and feet on the ground
2. Pushing through your heels, send the hips to the sky and hold at the top in a straight line for 2 seconds
3. Slowly lower your body back to the ground

FORM TIPS: Squeeze your buttocks throughout the motion, keep the movement controlled



Quantity:

- For Muscular strength: 3 sets of 10 reps
- For Muscular endurance: 3 sets of 15 reps

Modifications:

- To make the exercise easier: Remove the holding time at the top of the movement
- To make the exercise more challenging: Spend 5 seconds mounting into the bridge, then 5 more seconds lowering back to the ground

Cool Down

Seated Twist

- While sitting on your bottom, bend and cross one leg over the other and rotate the upper body towards the side of the bent knee. Hold for 15 seconds, then switch sides. Repeat this 2 times.



Cobra

- Lay down flat on stomach and place hands next to head. Gently lift up upper body while keeping back straight. Hold for 15 seconds, then slowly lower back down. Repeat for a total of 2 sets.



Quads

- While standing with knees slightly bent, bend one leg back and grab onto the top of the foot. Hold this position for 15 seconds, then switch to other side. Repeat for a total of 2 sets



Hamstrings

- Stand with legs slightly wider than shoulder width and feet pointing outwards. Bend forward to touch the ground with a soft bend in the knees. Hold this stretch for 15 seconds, then relax and repeat for a total of 2 sets.



Arms-front

- Standing straight up, cross one arm over the chest. Secure the position by bringing opposite arm under the forearm, making a v shape. Hold for 15 seconds, then repeat on the other side. Complete 2 sets.



Arms-back

- Standing in a straight up position, bring one arm bent in a v shape behind the head. Hold for 15 seconds, then switch to other side. Repeat for 2 total sets.



Neck

- Standing up straight, look down at your shoes and move your head back and forth as if your saying no. Complete this motion for 15 seconds, then relax and repeat once again.



Chest Opener

- Standing up, find the edge of a wall or doorframe. Grip with the fingers of one arm, then rotate 90 degrees to open the chest. Hold for 15 seconds, then repeat on the other side. Complete 2 total sets.



Calves

- Place toes and tops of feet on the edge of a wall and hold in this stretch for 15 seconds. Repeat for 2 sets.

