CHAPTER 13

EXERCISE SELECTION AND TECHNIQUE

LEARNING OBJECTIVES

1 | Describe the three different learning styles.

2 | Define verbal and nonverbal communication and how a fitness professional uses both.

3 | Explain exercise cueing and its importance in exercise and fitness.

4 | Identify the fundamental movement categories that classify human movements.

5 | List exercises applicable to each fundamental movement category.

6 | Identify the prime mover(s) for each exercise presented.

Exercise selection is one of the primary acute training variables the personal trainer will consider when building exercise programming. Exercise selection can determine factors such as the potential intensity of the exercise, training outcome, or even enjoyment of the program by the client. When considering which exercises to select for a program, the trainer must consider the following:

- The target muscle groups or movement patterns
- Muscle groups or movement patterns to avoid that will prevent injury or overuse
- Skill or comfort level of the client with specific movements
- Available tools, space, or exercise equipment

For most training programs, there's an excess of different exercises a trainer can select. Most exercises can be divided into how they are performed and the fundamental human movements they incorporate. A well-rounded exercise program should incorporate exercises from each category of movement to promote optimal health, **mobility**, strength, and musculoskeletal function. For the most part, the variety of exercise choices come from the many variations of each foundational movement pattern including the use of different equipment, starting positions, exercise machines, surfaces, or grips.

MOBILITY:
The ability of a joint to move freely through a given range of motion.

COMMON EXERCISE INJURIES AND INJURY PREVENTION

Before learning about movement categories and exercise technique, it is important for a fitness professional to understand why proper exercise technique is important. "Ideal" form will vary by client since factors such as flexibility, joint mobility, strength, and body size can impact the range of motion a client will have. However, proper form and technique can prevent injury and encourage optimal muscular recruitment during a movement pattern. When ideal muscular recruitment occurs, movement and muscular compensation can be avoided.

There are many common reasons a client may have an injury during exercise:

- **Misuse of the acute training variables**: when load, speed, rest, and so forth are not implemented in a way the body can handle. For example, performing a back squat too quickly or with too much weight.
- **Improper training progression**: when the acute training variables are implemented out of order. For example, a beginning client performing jump squats without properly training and progressing their ability to squat with both feet flat on the floor.
- **Poor mobility or flexibility**: Both mobility and flexibility impact every movement pattern. Whether the client has stiff joints, poor range of motion at a joint or joints,

or low muscle pliability, they may see what is known as **altered arthrokinematics**, or the altered movement of joint surfaces, or movement dysfunctions including **synergistic dominance** when a synergist (helper) muscle takes over a movement pattern when the prime mover fails.

ALTERED ARTHROKINEMATICS: Altered movement of joint surfaces.

SYNERGISTIC DOMINANCE: When a synergist (helper) muscle takes over a movement pattern when the prime mover fails or is too weak to control the movement.

- **Poor exercise form or technique**: A client may experience movement dysfunctions that lead to injury when they perform an exercise incorrectly. This can include moving without proper stabilization such as abdominal bracing or making compensations where other muscles take over for the action of the prime mover (synergistic dominance or inhibited musculature). For example, having weak or inhibited glutes for many movement patterns including walking can cause low-back pain, hip or knee pain, and overactive hip flexors.
- **Poor preparation for movement**: When a warm-up is skipped (general or specific), the body may not be prepared to execute the necessary movement patterns.
- **Insufficient energy or exhaustion**: When the body is fatigued, under recovered, or exhausted, movement will suffer, and injury can result. This can apply both within an exercise session, from one session to the next, or over time with overtraining.

EXERCISE PROGRESSION AND REGRESSION

PROGRESSIONS: Modifications to acute training variables that increase the challenge of a movement pattern.

REGRESSIONS: Modifications to acute training variables that decrease the challenge of a movement pattern.

Most exercises have a standard technique for proper execution that may vary by person. Exercises can have **progressions** that increase the challenge of the movement and **regressions** that decrease the challenge of the movement. For example, adding weight to a movement to progress it or removing weight from the exercise to regress it. Variables that can be manipulated to create a progression or regression include load (weight), tempo (speed), range of motion, movement complexity, or novelty.

Increasing tempo adds the challenge of generating speed and controlling the body when moving at greater speed through a movement. For example, progressing from a body weight squat to a squat jump. Decreasing tempo can be used as a regression to allow someone to master technique, but it can also be a progression if time under tension becomes the emphasis, as with a very slow push-up.

Increasing the range of motion of an exercise can increase the challenge since a load is traveling for a greater distance, which will require more work and higher levels of control. A decrease in range of motion may allow for the client to work in a range that they can better control and move through without pain. Trainers should consider a lunge for this concept. Lunging forward and moving all the way to the ground may be too great of a range of motion

for some people. Their maximum range of motion should be determined by the distance they can travel in the movement with coordination and without pain.

An increase in movement complexity can increase the challenge, such as pairing two movements together in the reverse lunge with rotation. This exercise combines two different movement patterns with several joints moving, which increases the necessary coordination and stability to complete the exercise. Keeping movements simple (fewer movement patterns and joint movements) can act as a regression and teach individual aspects of a complex movement pattern before combining them.

Movement novelty simply refers to movements that are new or highly untrained. Breaking down a more complex movement pattern into simple components is a way to regress a novel movement and strengthen the individual aspects before combining them and increasing the speed at which they are executed.

KEY COMMUNICATION PRINCIPLES

Just as there are many ways to effectively design a workout, there are many different ways to teach and communicate with clients. When teaching clients exercise and progressing them through a training session, clear communication is required to prevent injury and ensure optimal form and movement execution. While some personal trainers may have the ability to easily communicate clearly and directly, most trainers need to work at it.

NONVERBAL:
Not involving words or speech.

BODY LANGUAGE:
Communication of a nonverbal form with gestures or body movement.

SPATIAL RELATIONS:
How objects are located relative to one another in space.

PARALANGUAGE:
Components of speech like tone, pitch, facial expressions, cadence, and hesitation noises.

Communication encompasses much more than just spoken words. The quality of interactions with clients is reflected in how trainers greet their clients, teach them movement patterns, and answer their questions along the way. An effective first step to successful teaching is gaining the clients' trust, and to do this, trainers must understand that some valuable communication techniques are **nonverbal**.

NONVERBAL COMMUNICATION

Nonverbal communication has three components

- **body language**,
- **spatial relations**, and
- **paralanguage**.

Body language incorporates communication through physical appearance, posture, gestures, touch, and changes in facial and eye movements. The face is the most expressive part of

the body, and facial expressions are an important part of communication and developing impressions of other people. Smiling transcends cultural and language barriers and can be an effective way to offer positive encouragement and understanding.

Posture is another key element of body language and is an indicator of self-esteem, openness, and kinesthetic awareness (an individual's sense of their body and how it moves). Clients will look to personal trainers to set an example, so it is important for trainers to maintain good posture both inside and outside the gym.

Proxemics is the study of what is communicated by the way a person uses personal space. Edward T. Hall, an anthropologist and considered the father of proxemics, described four distinct zones used when interacting with others: intimate distance (0–18 inches), personal distance (1.5–4 feet), social distance (4–12 feet), and public distance (12–20 feet). A personal trainer's interactions with clients will primarily fall in the personal and social distances, although it is possible that they may enter the intimate distance. Asking for permission to come into this zone is recommended, always with new clients and frequently with regular clients, to determine their comfort level with the trainer's presence in such close proximity.

PROXEMICS:
The study of what is communicated by the way a person uses personal space.

There are many elements to delivering a message to clients; what a personal trainer does and how they do it speaks more loudly than what they say. Personal trainers should practice their own nonverbal messages and strive for congruence among the various forms of verbal and nonverbal delivery.

The Importance of Listening

One of the greatest communication skills a personal trainer can acquire is the ability to listen. As a personal trainer, it is important to foster trust and build rapport with clients and support their growth.

- **Active listening** is the act of paraphrasing or stating in one's own words what someone has just said. Personal trainers can use lead-ins such as "I hear you saying…" and "Do you mean…?" Paraphrasing keeps the trainer more involved in the conversation, helps them to remember what was said, eliminates miscommunication, and makes clients feel that they are being heard. Asking more questions for clarification may be necessary, especially if the client is discussing a complex issue they are working through.

ACTIVE LISTENING:
Paraphrasing or stating in one's own words what someone has just said.

EMPATHIC LISTENING:
The ability to understand how the clients feel and empathize with them.

- **Empathic listening** is another useful listening skill. The ability to understand how the clients feel, whether they are new to exercise, working with an injury or condition, or working through something else, establishes a foundation of trust. As a personal trainer, it is important to practice humility, and empathetic listening is an excellent way to better relate to clients and resist being placed on a pedestal.

VERBAL COMMUNICATION

The introduction of language to communication is not a requirement, but a luxury. So much goes into overall communication and the addition of speech can cause confusion or miscommunications. Attention to detail is necessary with language to ensure the intended message is conveyed.

Paralanguage

Paralanguage comprises the vocal components of speech considered separate from the actual meaning of the words. It includes things like pitch, **articulation**, tempo, and volume. These elements make a huge impression on clients, so it is worth refining them.

ARTICULATION:
The ability to pronounce distinctly—to enunciate.

Pitch occurs by tightening or loosening the vocal cords. Intense feelings of joy, fear, or anger cause the voice's pitch to rise. When a person is depressed, tired, or calm, the voice relaxes and the pitch decreases. The most dramatic pitch change should occur when saying the most important words of the message.

Articulation is the ability to pronounce distinctly—to enunciate—which is an extremely valuable tool. Clients should be able to hear and clearly understand a trainer's cues.

Tempo, or the speed at which words are spoken, is also important. If words are spoken too slowly, a client's attention may wander. On the other hand, if words are spoken too rapidly, some clients may find it difficult to follow the instructions.

The volume of a personal trainer's voice can vary depending on the workout, and it can convey different emotions and energy levels. Finding the right volume comes with experience and an awareness of one's own voice. If unsure of how well clients can hear instruction, the trainer should not hesitate to ask.

A vital part of becoming a successful personal trainer is the ability to instruct effectively in each of the three forms - visual, auditory, and kinesthetic. Each form corresponds with the way people communicate and the way they learn.

- **Visual learners** tend to process information quickly, use descriptive language, and are prone to using hand gestures. They learn best through seeing the information being taught. This could include reading text, looking at pictures or diagrams, or watching someone demonstrate a movement.
- **Auditory learners** prefer to learn by hearing instructions. They do best by listening and rely on both speaking and hearing to process information. Auditory learners often like to repeat information back to ensure their understanding of a concept or movement.
- **Kinesthetic learners** learn best through movement and hands-on activities. They can be slower to process information and respond better to physical touch than verbal instruction. They prefer being active when learning and rely on the senses of touch, smell, and taste in the learning experience.

VISUAL LEARNERS:
People who learn by seeing information.

AUDITORY LEARNERS:
People who learn by hearing information.

KINESTHETIC LEARNERS:
People who learn by physical touch.

Effective trainers remain aware of all three types of learners. This includes learning different types of instruction to better relate to clients in their "language."

Language Choices

Personal trainers should be selective with the words they choose and consciously construct the phrasing of their instructions, keeping in mind that literal and implied meanings are not always the same. For example, the instruction "straighten your spine" is ambiguous and can be frustrating for clients because it is not physically possible to straighten the spine due to its natural curves. A clearer cue would be "lengthen your spine" or "elongate your spine" to indicate increasing the space between each vertebra and the sensation of growing taller.

Using clear, active language rather than passive or overly descriptive language is essential for personal trainers. An instruction such as "straighten your arms" is much clearer and action-oriented than "your arms are straightening," which implies that clients are already doing what is asked of them. Using excessive or complex jargon, such as "dorsiflex your ankle" or "flex through the hip," should be avoided because these instructions are ambiguous and difficult for clients to understand in many cases. Keeping language clear and simple will ensure that the greatest number of clients can benefit from the trainer's knowledge and guidance.

CUEING

Cueing is an important part of personal training. The ability to cue with clarity and precision plays a huge role in each client's movements and overall success. Every client has a different learning style, so effective cueing involves both good communication skills and an ability to

CUEING:
To give a reminder or a direction.

adapt based on clients' individual needs. Most individuals will have a dominant learning preference, whether visual, auditory, or kinesthetic, but it will not be exclusive. As cues are refined, it is important to cultivate a greater understanding of the cues that might work best for each learning preference.

VISUAL CUEING

Visual learners tend to learn best by seeing what is being taught through physical demonstration. To best serve those who learn visually, movements must be clear and concise. Any unnecessary movements or transitions should be avoided, and (if relevant) a movement can be broken down to ensure that clients can understand the proper execution. Particularly with advanced or more complex movements, trainers should consider offering a step-by-step demonstration. For example, when teaching a deadlift, the trainer may individually break down the start, stand, hinge, and knee flexion components so the client can understand the full movement and see it in action.

VERBAL CUEING

Auditory learners learn best by listening to verbal cues. Much of the cueing a personal trainer will deliver will be verbal. The ability to succinctly provide verbal feedback to clients and reinforce correct movement patterns is a vital skill and takes practice. Here are a few things to consider while refining verbal cues:

1. Trainers should avoid over-instructing or feeling the need to narrate every moment. Clients can only take in so much information at once, and the level of the client should be considered. Newer clients may need more guidance while more advanced clients likely have a better understanding of how to execute certain movements.
2. Trainers should avoid using overly technical language. Although it is important to have a solid understanding of the biomechanics of each exercise, trainers should stick to simple language so clients have a clear understanding of what they are being asked to do.
3. Trainers should watch to see if clients are responding to verbal cues. If not, it may be that the concept was not explained clearly, or repeating the same cue using a different language is necessary. It could also be that the action being taught is too complex for the level of the client, which may call for a different form of instruction, such as a physical demonstration or a regressed form of the movement first.

KINESTHETIC CUEING

Kinesthetic learners absorb instruction best through hands-on learning. Physical cueing can be effective, particularly for new clients as it helps them develop kinesthetic awareness. While hands-on learning can be useful, any kind of physical touch between a personal trainer and client must be appropriate. It is important to ensure that clients feel comfortable with the use of touch and that it has been approved by the client.

MOVEMENT CATEGORIES

There are six fundamental **movement categories**. They can help to ensure that exercise selections are being made to accommodate a specific fitness goal and meet the basic criteria of maintaining general movement skills and capacity. They are not an absolute description of an exercise but are used as organizational categories. With this in mind, it's important for fitness professionals to note that there are exercises that can overlap more than one movement category.

MOVEMENT CATEGORIES:
The six fundamental movements that are the basis for most exercise selections in exercise programming.

The movement categories (in no particular order) are

- Hinge
- Push
- Pull
- Squat
- Lunge
- Locomotion

In addition to the movement categories, the following exercise categories are also applied:

- Core
- Isolation and activation

HINGE

The **hip hinge** is a forward and backward movement of the upper body (spine remains neutral) while the hips remain at the same height and move back rather than downward to counterweight the movement of the head and rib cage. The primary joint involved is the acetabulofemoral joint (hip joint).

HIP HINGE:
A forward and backward movement of the upper body while the hips remain at the same height and move back.

During a hip hinge, the prime mover creating hip extension is the gluteus maximus, with some strong help from the hamstring group. Hinges can also be used to strengthen the

erector spinae along the spine as they will be isometrically acting to maintain the neutral spine position. This position is a foundational movement for many exercises and should be mastered early in an exercise program.

Barbell Deadlift

Prime movers: Hamstrings, Quadriceps, Glutes

Begin by stepping up to the barbell with the shins to the bar and with the feet just outside hip width. Next, hinge to the bar, and place the hands just outside the shins with an overhand grip. The back should remain flat with the shoulders down and away from the ears. Press through the midfoot to come to a standing position with the barbell in hand, while avoiding *pulling* to stand up by using the arms to lift the weight before extending the legs. The glutes are engaged while standing with a slight posterior pelvic tilt. The knees should remain stacked over the ankles (pressing out) to engage the glutes. To return to the starting position, a hip hinge is initiated until the barbell reaches the knees. Then, keeping the knees over the ankles, begin to bend the knees while maintaining a flat back and pushing the hips back with the goal of maintaining a close-to-vertical shin angle.

> **TRAINING TIP:**
>
> For clients with limited mobility or strength, fitness professionals should elevate the starting position of the bar using plates or boxes. Also, they must watch for jerking at the start of the movement or bouncing consecutive reps off the ground.

Dumbbell Romanian Deadlift (RDL)

Prime movers: Hamstrings, Glutes

To begin the exercise, pick up the dumbbells and stand tall. Keep the shoulders down, brace the abdominals, and initiate a hip hinge. Keeping a slight bend in the knees, hinge until a stretch in the hamstrings is felt. Typically, the weight will be between the knee and mid shin. To return to the standing position, squeeze the glutes and hamstrings with bodyweight in the midfoot. Do not allow the upper body to *pull* the weight up and extend the hips, placing all the effort into the lower back as opposed to the glutes and hamstrings. Glutes are engaged with a slight posterior pelvic tilt at the top of the movement pattern.

TRAINING TIP:

Trainers should coach clients to drive the knees out during the descent of this exercise to keep the glutes engaged and protect the low back. The shoulders should remain relaxed and the cervical spine neutral (chin down as if holding an orange between the chin and the chest) to avoid spinal extension throughout the range of motion.

Kettlebell Swing

Prime movers: Hamstrings, Glutes

Begin standing with the feet just outside the hips with the kettlebell in hand. Hinging from the hips and keeping the back flat, bring the kettlebell between the knees. The arms and shoulders remain relaxed through the swing. Resist the urge to force the weight through the range of motion and instead focus on the hip thrust. Next, quickly extend the knees and hips to full extension (standing position), driving the head straight up. Hyperextension of the spine should be avoided. The glutes are squeezed, and the core is braced for stability. The kettlebell will follow an arc in front of the body and should swing naturally, no higher than the shoulders. Remain in the upright and engaged position as the kettlebell follows its natural arc back toward the hips. Just as the weight reaches the front of the pelvis, hinge quickly, allowing the weight to finish just behind (and between) the knees, and immediately begin the next repetition, starting with a powerful knee and hip extension.

> **TRAINING TIP:**
>
> Trainers should coach the client to look for a standing plank position at the top of each rep. They should also ensure the client doesn't force the kettlebell to move with the arms. Instead, the weight should "swing" as the hips control the movement.

Dumbbell Single-Leg RDL

Prime movers: Hamstrings, Glutes

Begin in a standing position with the desired weight in the hands and with the arms fully extended at the sides (or slightly in front of the thighs). With the feet set about hip width apart and a soft bend in the knees, hinge from the hips while elevating one leg, keeping the back flat, the shoulder blades in place, and the abdominals braced. The leg being elevated should have a flexed foot and remain level (even) with the back. Hinge until a stretch is felt in the hamstring of the stationary leg—typically the hands or load will be between the knee and mid shin. Next, squeeze the glutes and hamstring on the stationary leg to return to a standing position while keeping the elevated leg in alignment with the flat back. The glutes are engaged with a slight posterior pelvic tilt before beginning the next repetition.

TRAINING TIP:

The hip on the elevated side should not be allowed to rotate open, and the hips and chest should remain square to the floor during the range of motion. If the client has issues with balance, instead of elevating one leg, coaches should encourage them to adopt a staggered stance with the front foot flat on the ground and the back foot elevated to the toes for stability.

PUSH

Pushing movements are categorized as upper body exercises in which the arms themselves, or the arms and a tool directed by the arms, move away from the body. This can happen vertically (overhead) or horizontally (anteriorly) and everything in between. The primary joints involved in these movements will be the glenohumeral joint (shoulder) and the elbow joint.

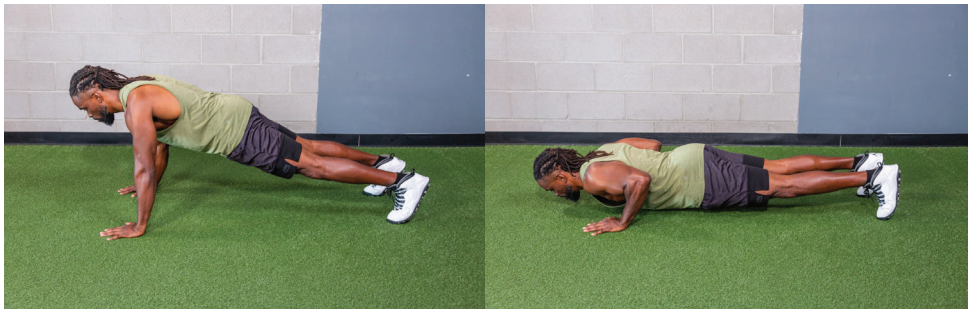
The direction of the push will directly affect the prime mover of the shoulder joint. In a vertical push, the deltoids will be the primary mover at the shoulders, with the triceps being the primary mover at the elbows. In a horizontal push, the pectoralis major will be the primary mover at the shoulders, with the triceps again being the primary mover at the elbows.

Push-Up

Prime mover: Pectoralis Major

Begin in a high plank position with the body in a straight line from the head to the feet. The hands are placed just outside of shoulder width and even with the middle of the chest. Maintain the plank position, and bend the elbows to lower the body toward the floor. The bottom of the push-up is reached when the elbows are bent to a 90-degree angle. Press through the hands to engage the chest and extend the elbows back to the starting position.

> **TRAINING TIP:**
>
> A modified push-up can be executed from the knees with the body in a straight line from the knees to the head. Also, the range of motion at the elbows will vary based on a client's strength, flexibility, and body size. For example, someone with a larger chest may not achieve a 90-degree elbow bend before their chest contacts the floor.



Standing Cable Chest Press

Prime mover: Pectoralis Major

For this exercise, the handles on the cable cross should be set at approximately chest height. Begin standing in front of a cable cross, facing away from the machine. The feet can be parallel or in a staggered stance for balance, but in either position, the feet should be about hip width apart. Grab the handles of the cable cross with one in each hand, and bend the elbows to approximately 90 degrees. The arms will be parallel to the floor in the start position with the shoulders relaxed and away from the ears. Press the hands forward to fully extend (but not lock) the elbows. Slowly flex the elbows and return to the starting position.

TRAINING TIP:

This variation of a chest press challenges the core and the stability of the shoulder joint when cables are used. The body should not shift forward, nor should the shoulders elevate or the head move forward, during this exercise. Trainers should coach clients to brace the core and maintain the height of the arms throughout the range of motion. If additional stability is necessary, trainers should have the client execute this exercise from a seated position (with or without a backrest).

Barbell Bench Press

Prime mover: Pectoralis Major

Lie supine on a flat bench with the feet on the floor and the head, shoulders, and glutes in contact with the bench. Grasp the barbell just outside of shoulder width, and with a pronated grip (palms facing the feet), lift the barbell off the rack. Keep the shoulders down and away from the ears, and begin to flex the elbows to lower the barbell. Lower the bar until it touches the chest (or just above the chest) before extending the elbows back to the starting position.

> **TRAINING TIP:**
>
> The shoulders, head, and glutes should stay in contact with the bench throughout the range of motion, and the wrists should remain rigid. Trainers should coach clients to brace their abdominals during the concentric press to stabilize and support the spine.

Dumbbell Chest Press

Prime mover: Pectoralis Major

With dumbbells in hand, lie supine on a flat bench with the feet on the floor and the head, shoulders, and glutes in contact with the bench. Extend the arms over the chest for the starting position. Slowly flex the elbows to lower the dumbbells toward the lateral aspect of the chest, keeping the wrists over the elbows until the upper arm is parallel to the floor. In a controlled manner, press the dumbbells back to the starting position by extending the elbows and engaging the pectorals.

TRAINING TIP:

There are several possible grips for this exercise, including palms toward the midline (neutral) or palms pronated (facing the feet). Regardless of grip, the wrists should remain stacked over the elbows to control the weight and engage the pectoral muscles.

Dumbbell Seated Overhead Press

Prime mover: Deltoid

Begin seated on a flat bench (no back) or an upright bench (with a back) and feet flat on the floor with the knees bent at 90 degrees. Bring the dumbbells to the shoulders with the palms facing the midline (neutral grip) and the elbows flexed and near the abdomen. Brace the abdominals, press the weight overhead, and extend the elbows while keeping the shoulders down and away from the ears. Avoid arching the back (spinal extension) when pressing the weight overhead. Slowly flex the elbows and return to the starting position.

> **TRAINING TIP:**
>
> The grip for the overhead press can also be pronated (palms facing away) or supinated (palms facing the body).

Machine Chest Press

Prime mover: Pectoralis Major

Sit in the machine with the glutes, upper back, and head in contact with the seat. Grip the handles of choice (neutral or wide grip). Brace the abdominals, press the arms of the machine overhead, and extend the elbows while keeping the shoulders down and away from the ears. Avoid arching the back (spinal extension) when pressing the weight overhead. Slowly flex the elbows and return to the starting position.

> **TRAINING TIP:**
>
> When using exercise machines that have adjustable seat heights or other settings, trainers should be sure to record the seat and handle settings for future reference.

Machine Assisted Dips

Prime mover: Triceps Brachii

Adjust the weight pin for the desired amount of assistance (may require trial and error to find the right assistance). Step into the assisted-dip machine, and place the feet on the foot bar (or kneel on the knee pad if appropriate). Place the hands on the dip bars with the elbows fully extended and the shoulders relaxed and away from the ears. Shift the weight into the arms, and slowly flex the elbows to approximately 90 degrees to lower the body down. Avoid elevating the shoulders. Press through the hands to extend the elbows back to the starting position.

TRAINING TIP:

Trainers should coach clients to keep their elbows in toward the midline during the eccentric lowering. It is also important that trainers tell clients to always keep their shoulders down during this movement pattern. If the shoulders elevate, trainers should increase the assistance until proper form can be maintained.

PULL

Pulling movements are upper body exercises in which the arms, or the arms and a tool directed by the arms, are moved closer to the body. Much like pushing, this can happen vertically (from overhead) and horizontally (posteriorly) with additional angles in between. The primary joints involved in these movements will be the shoulders and the elbows.

In a vertical pull, the prime mover at the shoulder will be the latissimus dorsi, with the biceps being the prime mover creating flexion at the elbow. In a horizontal pull, where the joint action is a shoulder extension, the prime mover at the shoulder again is the latissimus dorsi with the biceps moving the elbows. In a horizontal pull where the joint action is a horizontal abduction, the prime mover at the shoulder will be the posterior deltoids, with the biceps again moving the elbow.

Barbell Bent-Over Row

Prime mover: Latissimus Dorsi

Begin with the shins behind a barbell loaded with the appropriate weight. Hinge from the hips, and grip the bar just outside of shoulder width. Come to a standing position with the barbell. Again, hinge from the hips, keep a soft bend in the knees, and keep the back flat with the arms fully extended to find the starting position. Hold the hinged position, and pull the barbell toward the belly button by flexing the elbows. The elbows should move straight back, not out and away from the torso. Slowly extend the elbows and lower the barbell back to the starting position.

TRAINING TIP:

Clients should master the hip hinge before attempting an unsupported bent-over row (any variation) to protect the low back and avoid injury. Also, avoid bouncing during the concentric action (the pull) when possible to prevent synergistic dominance or "cheating."