NASM Personal Trainer Exam Study Guide By Sorta Healthy

(We are not affiliated with NASM)

OPT Model
Created By NASM

Stabilization Endurance

1

- Developing proper movement patterns: squat, push, pull, press, hip hinge, and multiplanar movements
- Correcting muscle imbalances and helping with stabilization
- Promoting client confidence and adherence to exercise

Stabilization Endurance

(Other things to know)

- Sets: 1-3 sets are required for resistance training, core, balance and optional things.
- Reps: 12-20 for resistance, core, and balance exercises
-Tempo: 4,2,1 for required exercises

Stabilization Endurance

(Other things to know)

Rest: 0-90'sin this phase

- 1-3 sets of SMR and static stretching are required in the warm-up and cool down.
- Static stretching is prominent here to help with muscular imbalances.

Review Table 21-9

Strength Endurance

2

- Strength move immediately followed by stabilization move with similar motions
- Things can be progressed by increasing proprioceptive demand, volume, intensity or shorter breaks
- First of three strength phases

Strength Endurance

(Other things to know)

Sets: 2-4 for core, balance, resistance training, and some optional things.

Reps: 8-12 for resistance, core, and balance exercises

- 2,0,2 tempo for strength exs.
- 4,2,1 tempo for stability exs.

Strength Endurance

(Other things to know)

- Rest: 0-60's in this phase
- Like in all phases, there is still static stretching and SMR in the cool down.
- There is active stretching in the warm-up (1 to 2 sec. hold, 5-10 reps)

Review Table 21-11

Muscular Development

3

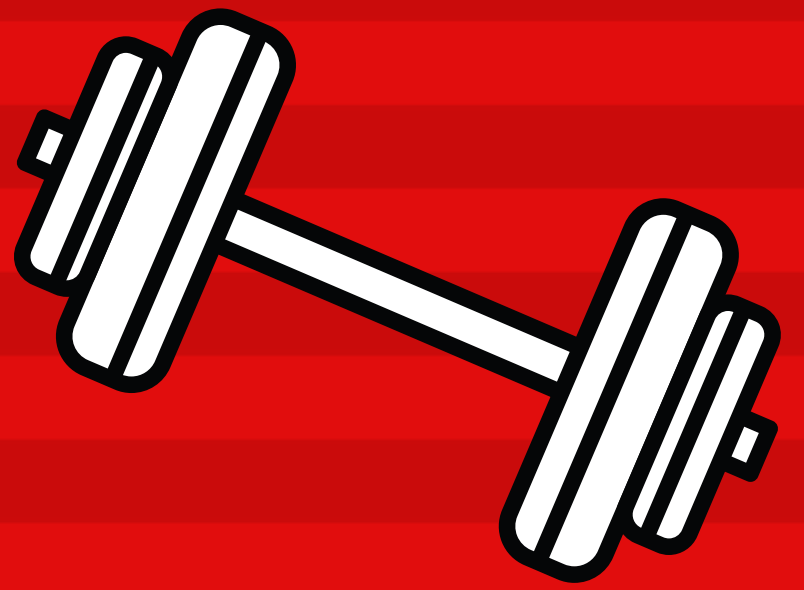
Sets: 3-6 sets of resistance training
2-4 for core and balance

Reps: 6-12 for resistance training exercises
and 8-12 for core and balance exercises

Tempo: 2,0,2 is used for required moves

- There is active stretching in the warm-up
(1 to 2 sec. hold, 5-10 reps)

Muscular Development



(Other things to know)

- 0-3 mins rest for resistance training

- 0-60's rest for core, balance, plyo's, (Optional) SAQ's (optional)

Muscular Development

(Other things to know)

- 12-20 reps is allowed for muscular development if more muscular endurance is desired
- Rest is up to 3 mins for resistance training because that's how long it takes to recover close to 100% ATP

Review Table 21-12

Maximal Strength

4

- This is an optional phase of the OPT model
- This is an advanced form of training and only recommended for experienced lifters and exercisers who have worked their way up to this phase of the model.

Maximal Strength

(Other things to know)

Sets: 4-6 for resistance training moves and 2-4 for core and balance

Reps: 1-5 for resistance training and 8-12 for core and balance

Tempo: Explosive or as fast as possible with good form

Maximal Strength

(Other things to know)

Rest: 2-4 mins for resistance training 0-60's for core, balance

- Greater than six sets resistance training sets for advanced clients is ok

Review Table 21-13

Power Training

5

- Superset strength focused move (heavy 1-5 reps) with a power focused move (lighter 8-10 reps)
- The goal in this phase is to improve a clients strength and their explosive speed/force.

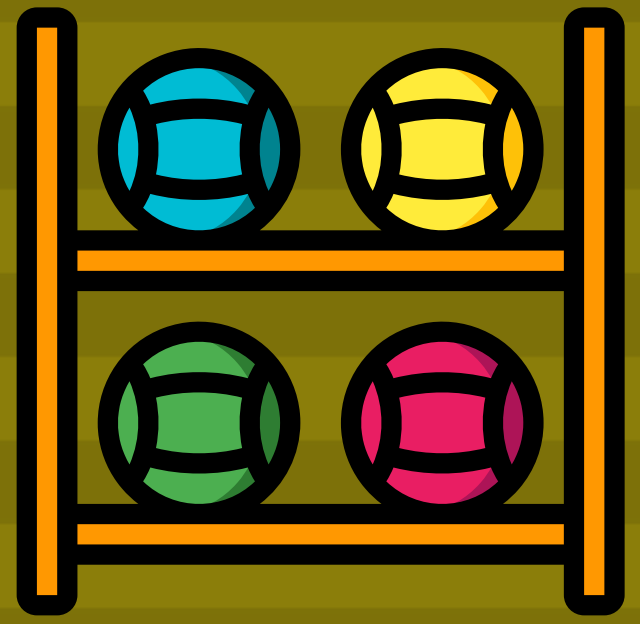
Power Training

(Other things to know)

Sets: 3-5 for resistance training

Reps: 1-5 for resistance training (85-100%1RM) and 8-10 for power (30-45%1RM)

Tempo: Explosive or as fast as possible with good form



Power Training

(Other things to know)

Rest: 1-2 mins between pairs 3-5 mins between circuits

- There is dynamic stretching in the warm-up (only standard in power)

- Core and balance moves are optional in this phase (only in power)

Review Table 21-14

OPT Model Patterns

- All warm-up's for phases include SMR for 1-3 body parts (hold 30's on tender areas)
- All warm-ups include stretching (Static>Active>Dynamic)
- The cool-downs are the same
- The optional moves (SAQ's, Plyos, etc follow a predictable path

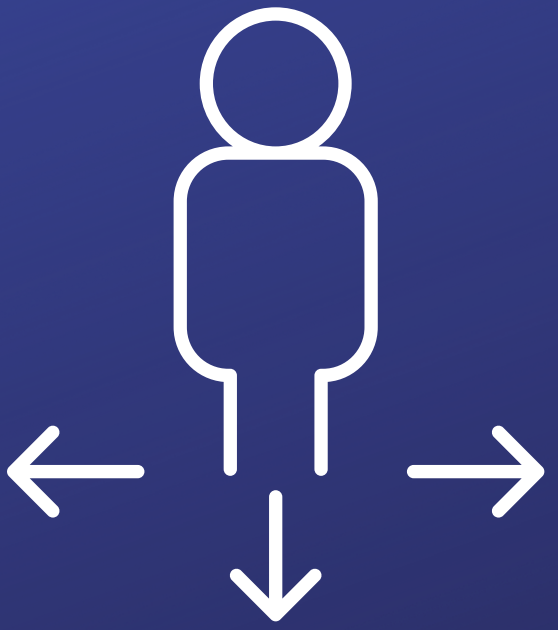
(see next page for example)

SAQ Progression

5	Power	MAX HORIZONTAL INERTIA AND UNPREDICTABILITY
4	Maximal Strength	
3	Muscular Development	INC. HORIZONTAL INERTIA LIMITED UNPREDICTABILITY
2	Strength Endurance	
1	Stabilization Endurance	LIMITED HORIZONTAL INERTIA AND UNPREDICTABILITY

The moral of the story here is that memorizing all of the parts of the OPT model isn't necessary. Memorize some of the key bits we went over. Review the tables listed (Ex. 21-14). Learn the patterns, and be ready to answer multiple choice questions.

OPT Options



OPT model for body fat reduction: phases 1,2,3

OPT model for increasing lean mass: phases 1 (initially) then cycle>2,3,4

OPT model for sports performance: phases 1,2,5

Periodization- A systematic planning of physical training. The aim is to reach the best possible performance for a specific time frame or event. You achieve this by changing up exercise variables when appropriate.

Microcycle: A week long block of training

Mesocycle: A month long block of training

Macrocycle: A year long block of training

Linear Periodization

A traditional method of program design that aims to gradually increase the intensity of the training load while simultaneously decreasing volume over a set period of time.

Undulating Periodization

A programming scheme, also known as nonlinear periodization, that uses changes in volume, intensity, and exercise selection to provide loading differences on a daily or weekly basis.

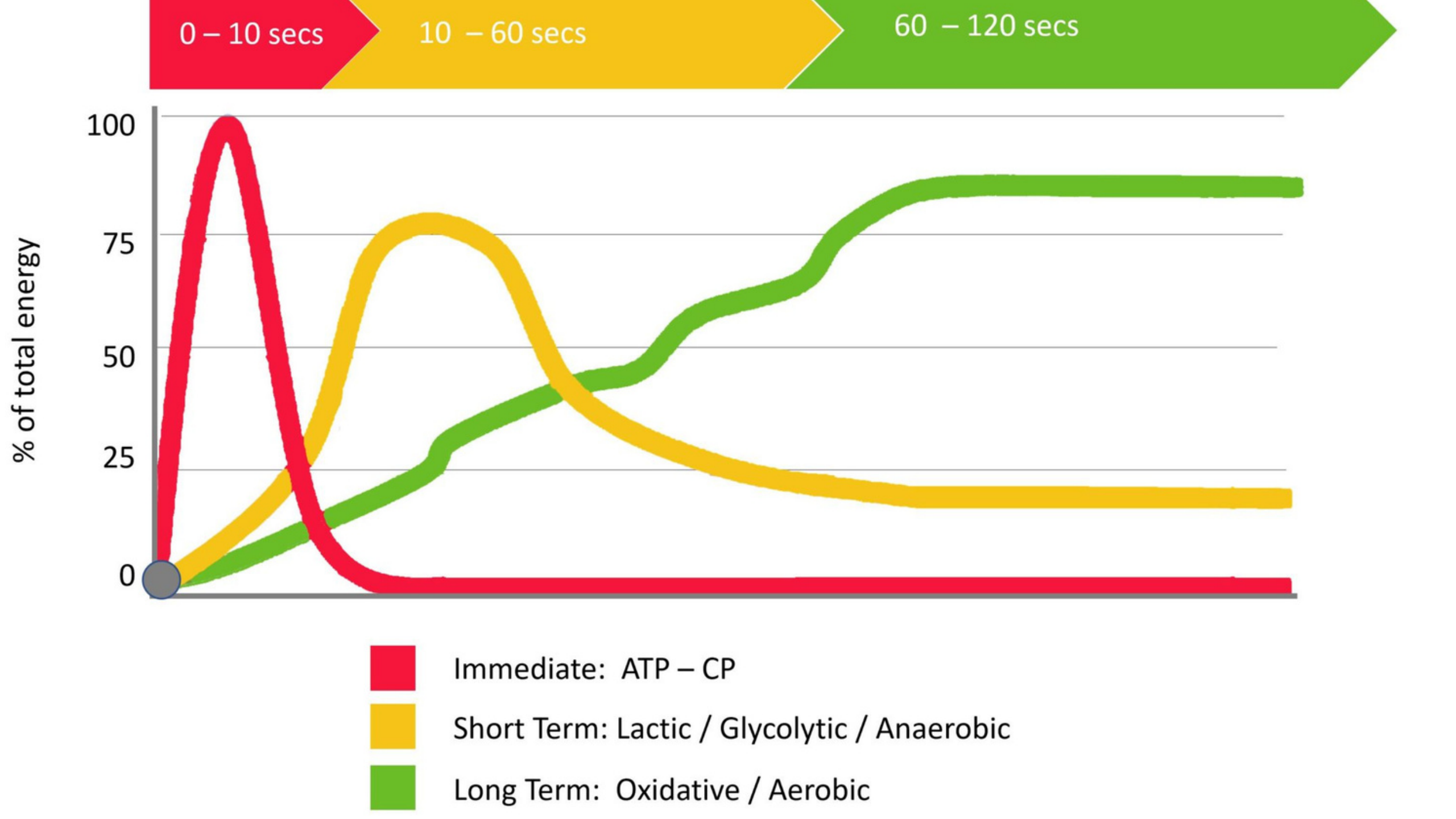
Over Training

Excessive frequency, volume, or intensity of training, resulting in reduction of performance, which is also caused by a lack of proper rest and recovery.

Energy Systems

ATP or Adenosine Triphosphate molecules provide the body with energy. Breaking these ATP molecules down is how your body powers itself.

Try to understand the chart on the next page.


0 – 10 secs
10 – 60 secs
60 – 120 secs
100
75
50
25
0
% of total energy
Immediate: ATP – CP
Short Term: Lactic / Glycolytic / Anaerobic
Long Term: Oxidative / Aerobic

-The aerobic system that we just described has other components like the Krebs Cycle and Electronic Transport Chain. They can power the body for a long period of time. (endurance events)

- Know time frames for each system

S PECIFIC

M EASURABLE

A TTAINABLE

R EALISTIC

T IMELY

Process and Outcome goals are also really important.

A process goal is shorter term. Completing a single session or making it to the gym are examples of process goals.

A outcome goal represents a longer term change such as an increase in strength, or significant amount of weight loss. This is typically the client's long term goal or end result.

Active Listening

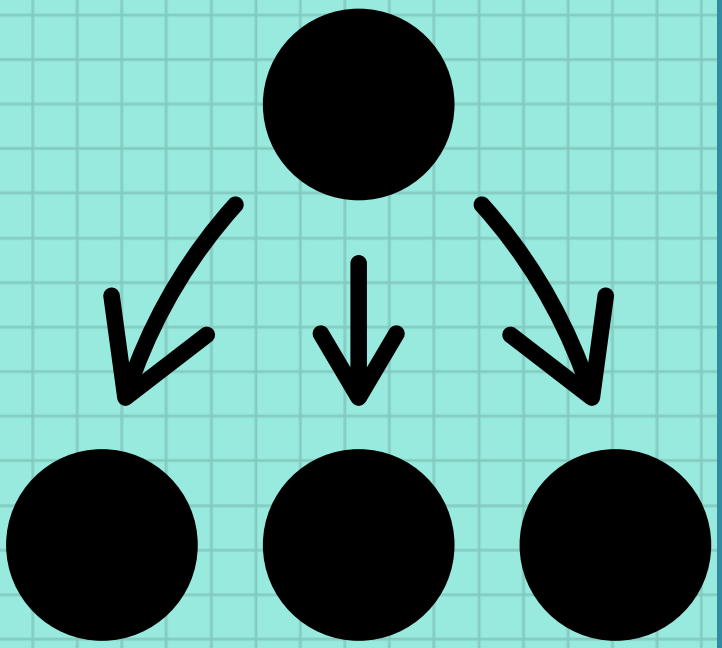
- Asking Questions
- Reflecting
- Summarizing
- Affirming
- Asking Permission

Asking Questions

NASM is big on open ended questions with a positive vibe.

Reflecting is basically when you repeat something back to a client to show that you understood them.

Summarizing



This is the same as reflecting, but now you're reflecting multiple pieces of information to show understanding.

Affirmations show appreciation for clients and their strengths. Compliments use "I" but affirmations don't and put more focus on the client.

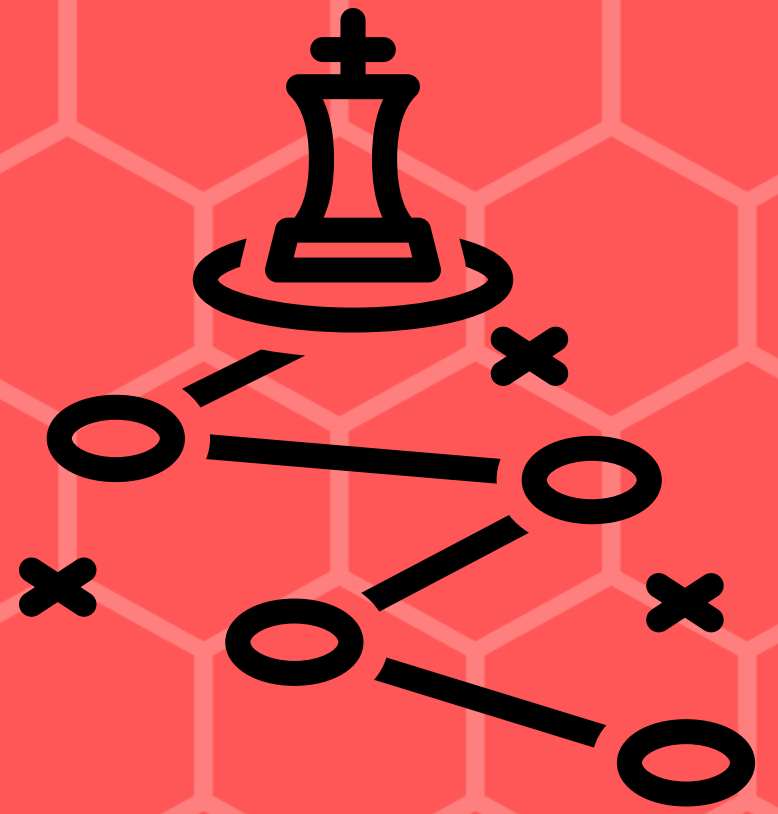
Examples of asking for permission:

-"Do you want to try assisted stretching?"

- "Does that lunge variation look like something you'd be willing to try?"

Cognitive Strategies

Intended to change the way someone thinks about exercise/activity



- Positive Self Talk
- Psyching Up
- Mental Imagery

Positive self-talk is a form of encouraging and motivating internal dialogue that increases self-efficacy.

Psyching Up: When internal dialogue is developed and used to increase excitement and motivation before exercise. Even listening to music before exercise can be an example.

Mental Imagery

Imagining a situation that improves client self efficacy, confidence and motivation to exercise.

Session #1

1. Discuss health concern goals
2. Clarify fitness goals
3. Review past exercise experiences
4. Fitness assessment

Something you're pretty likely to be asked about on the test is the transtheoretical model. There are five stages to that.

1 Pre-contemplation

2 contemplation

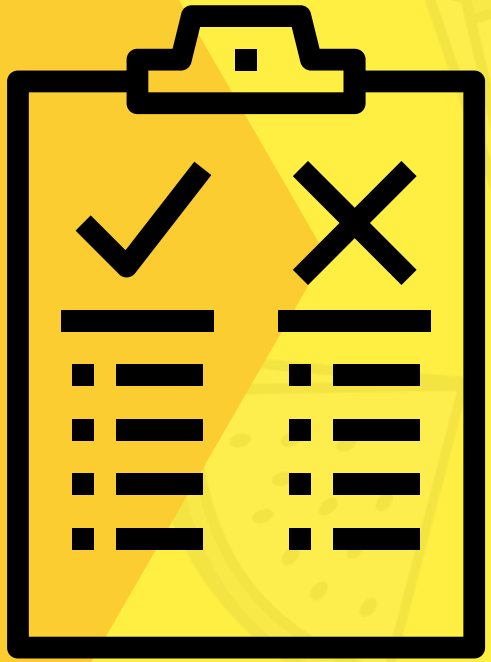
3 Preparation

4 Action

5 Maintenance

First, we have pre-contemplation where people are physically inactive. They're not intending on beginning an exercise program, and they don't see exercise as worth their time.

Then you have contemplation. People who are inactive, but thinking about becoming more active in the next six months go here. They're still weighing the pros and cons of exercise, but they're starting to consider the benefits.

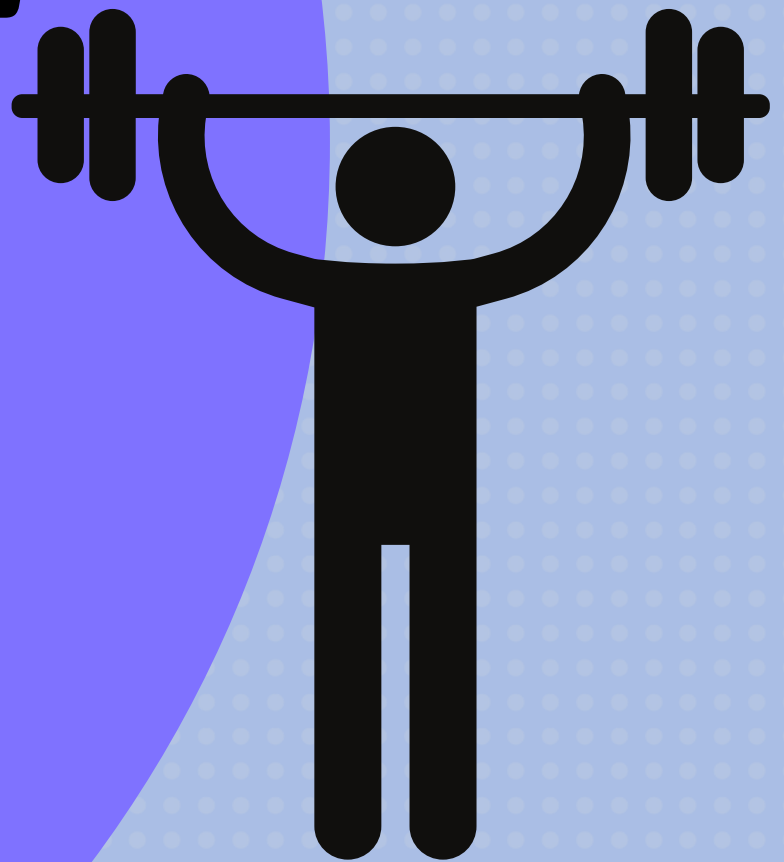


Next is preparation. People in this stage are doing some physical activity and preparing to adopt a more consistent activity program.

These people are only doing things like sporadic walking, but they're ready to adopt an active lifestyle.

Then you have the action stage. People are here when they're engaging in regular physical activity but have been doing so for less than six months.

Lastly, you have maintenance. People on this stage have been working out consistently for longer than six months.



Be able to identify where a person is within this model!

Pre-Participation

The PAR-Q+ is a subjective yes or no questionnaire that is used to determine whether it's safe or not for a client to begin an exercise program. It has follow up portions to reduce false postive readings.

The Health History Questionnaire is next. It's similar to the PARQ, but it's not yes or no questions. It gets you more detailed info on your client. Things like what medications they're taking, family history, etc. are covered.

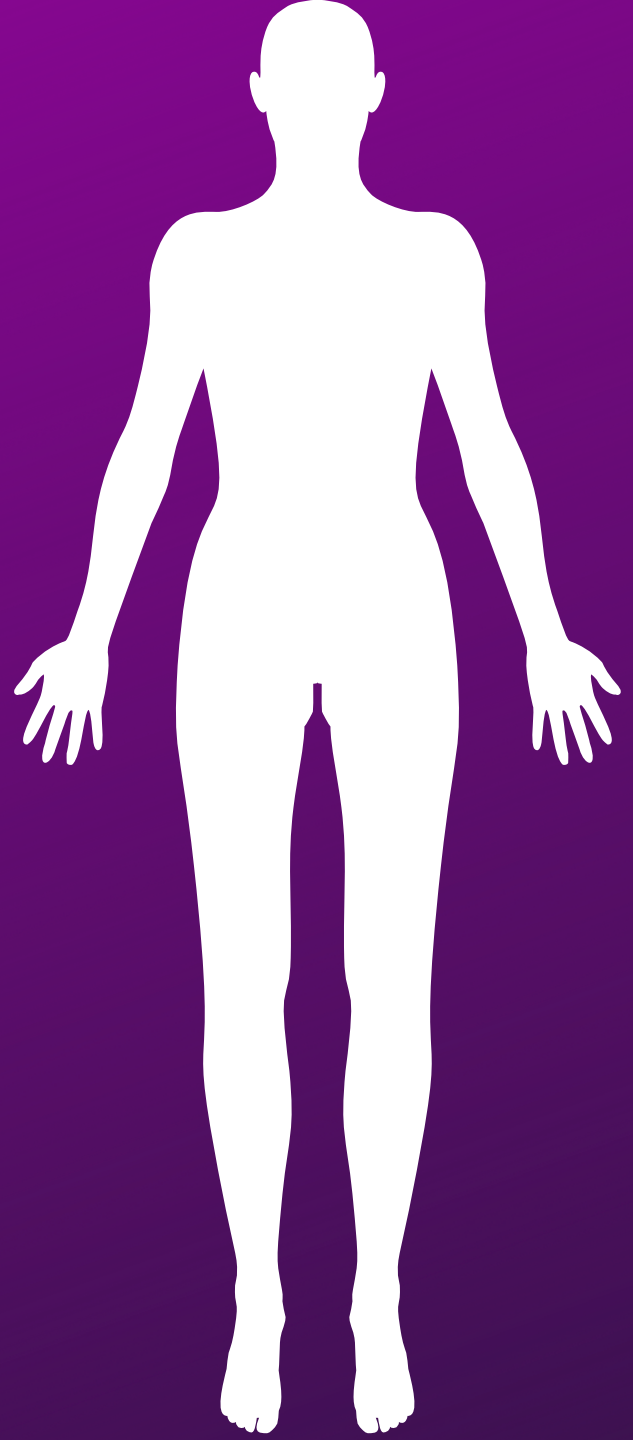
There are also medical release forms.

These are from a physician and they go over limitations a client may have.

Subjective vs Objective

Subjective assessments would be things that reflect what an individual feels (PAR-Q,HHQ,RPE). Objective things are quantified through data collection (blood pressure,HR).

Planes Of Motion And Movement



Superior - toward the head end of the body

Inferior- away from the head or lower

Anterior- front of the body

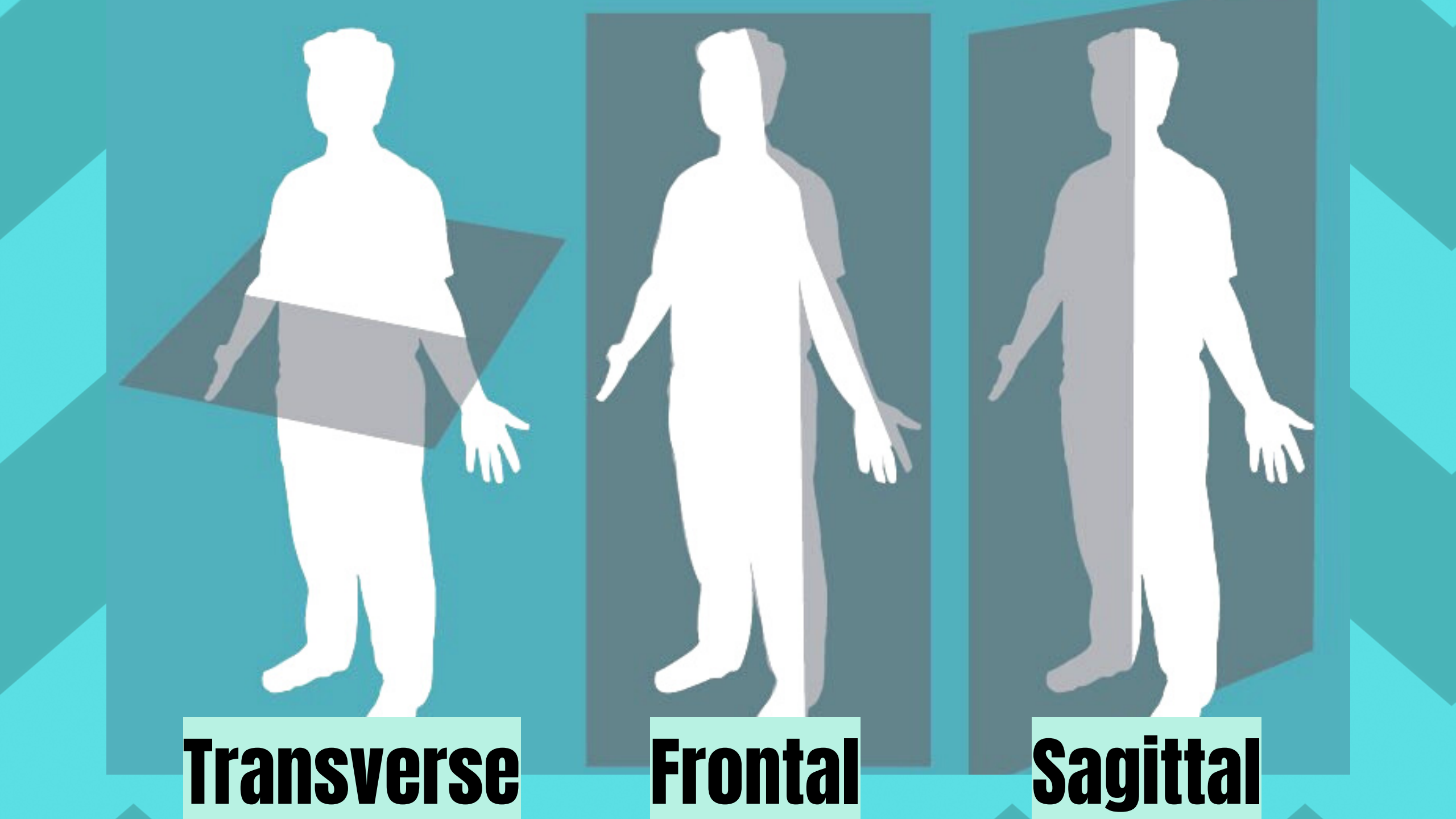
Posterior- back of the body

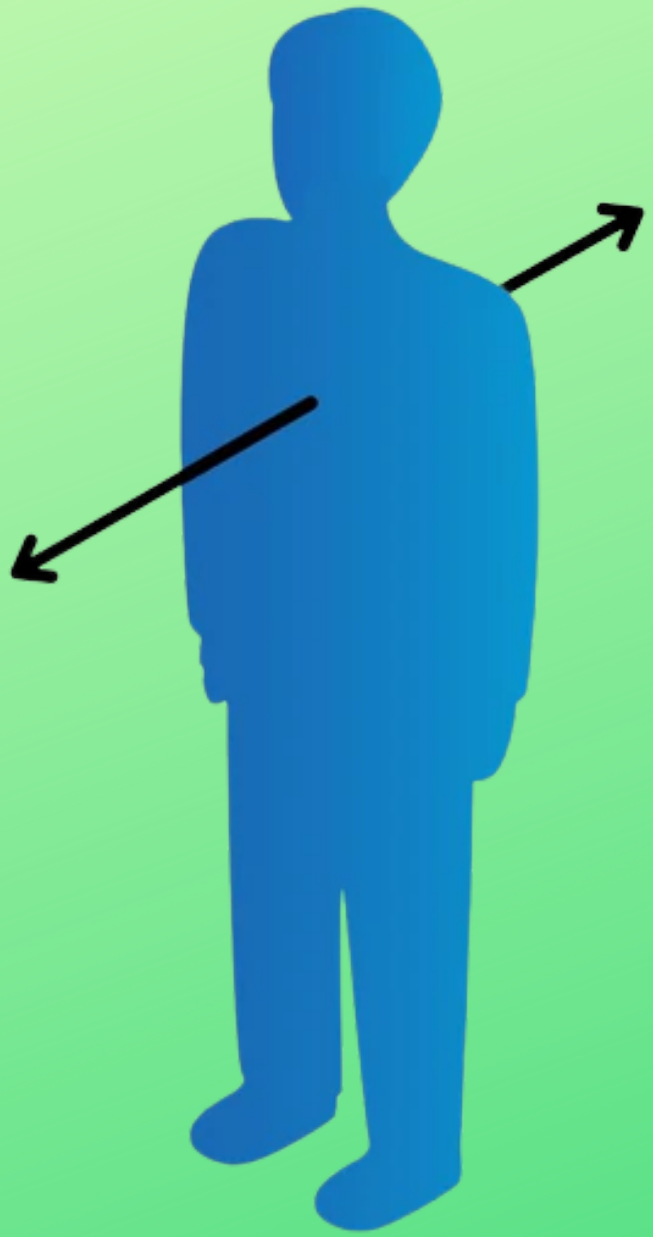
Medial - toward the midline of the body

Lateral - away from the midline of the body

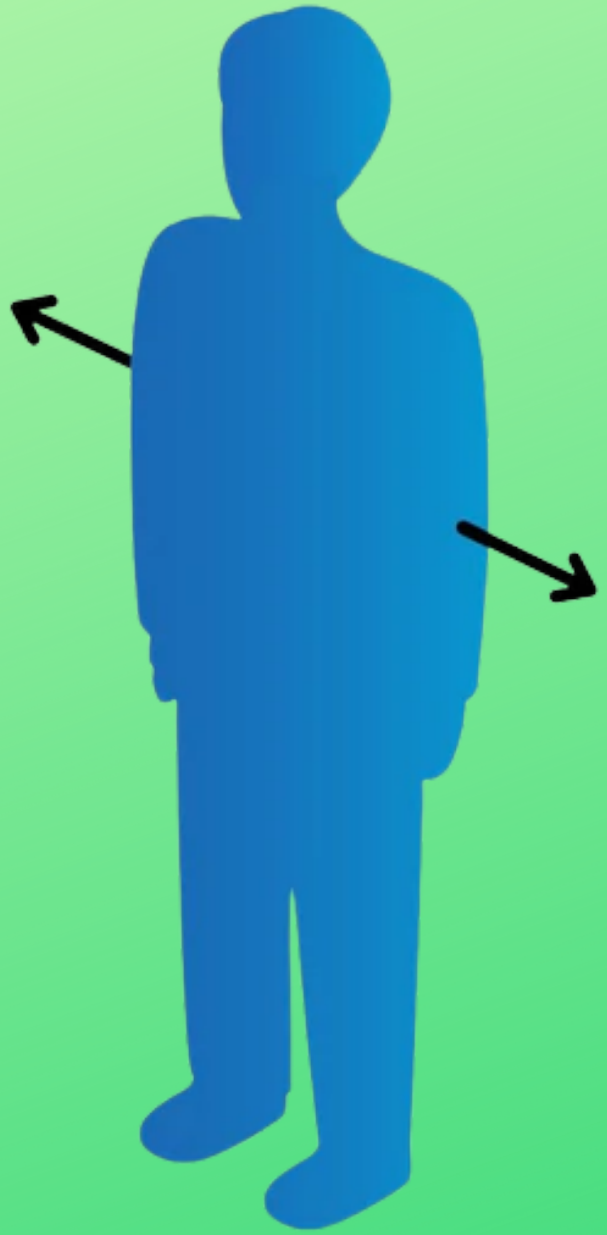
Proximal - nearest the trunk or the point of origin

Distal - farthest from the trunk or the point or origin

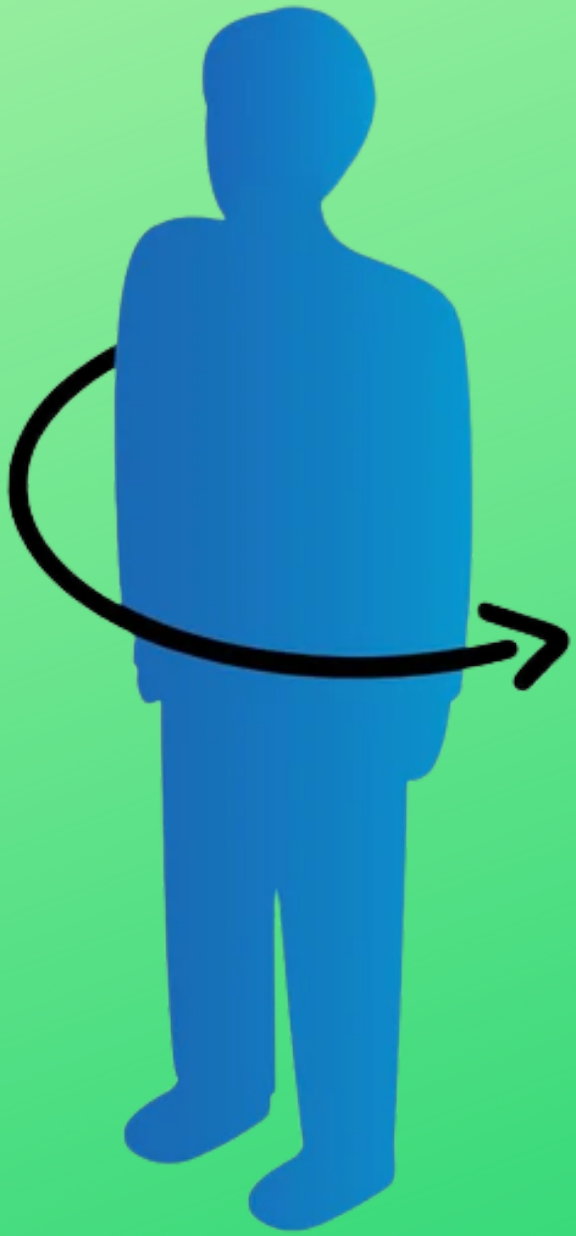

Transverse
Frontal
Sagittal



Sagittal



Frontal



Transverse

Movements In the Sagittal Plane

Flexion: Decreasing the joint angle

Extension: Increasing the joint angle

Dorsiflexion: Moving the top of the foot toward the shin (ankle only)

Plantarflexion: Moving the sole of the foot down towords the ground (pointing toes)

Movements In the Frontal Plane

Adduction: Movement toward the midline

Abduction: Movement away from the midline of the body

Elevation: Moving to a superior position (scapula)

Depression: Moving to an inferior position (scapula)

Inversion: Tilting the foot towards midline

Eversion: Tilting the foot away from the midline

Movements In the Transverse Plane

Rotation: When the torso or a limb moves around its vertical axis

Pronation: Rotating the forearm or foot to a palm-side or foot-side down position

Supination: Rotating the forearm or foot to a palm-side or foot-side up position

Horizontal abduction: Moving the upper arm away from the midline of the body when it is elevated to 90 degrees

Horizontal adduction: Moving the upper arm towards the midline of the body when it is elevated to 90 degrees

It's possible that you'll get a question or two where you'll be shown an exercise, and you'll have to identify what movement is taking place. You will also have to identify what plane of motion the movement is occurring in.

Exercise Regressions, Progressions & Form

Let's look at the lunge. Let's say I have a client lunging, but they're wobbly. How should I regress the exercise?

A. Allow the client to support themselves against the wall

B. Decrease the number of reps that the client is doing

C. Have the client do a backflip

D. Make sure you like the video 😎

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Let's say I have a beginner client lunging, they're doing great, and I need to make the exercise harder. How should I progress the exercise?

A. Have the client do jumping lunges

B. Tell the client to perform the movement faster

C. Subscribe to the channel 😎

D. Give the client light dumbbells to hold onto while doing the exercise

A. Have the client do jumping lunges

B. Tell the client to perform the movement faster

C. Subscribe to the channel 😎

D. Give the client light dumbbells to hold onto while doing the exercise

Let's say I have a client who's squatting and leaning too far forward. Choose the best cueing advice to give this client.

A. Tell the client their squat is a mess

B. Tell the client to shift the weight back onto the ball of their foot, heels, and hips

C. Hand the client light weights for increased stability

D. Stop the squat immediately and don't have that client do them anymore

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Let's take that same client who's squatting and leaning too far forward. Now tell me what muscles are likely overactive and which are underactive.

A. Overactive: Hip Flexors
Underactive: Tensor Fasciae Latae

B. Overactive: Glutes
Underactive: Hamstrings

C. Overactive: Hip Flexors Underactive: Glutes

D. Overactive: Glutes Underactive: Adductors

A. Overactive: Hip Flexors
Underactive: Tensor Fasciae Latae

B. Overactive: Glutes
Underactive: Hamstrings

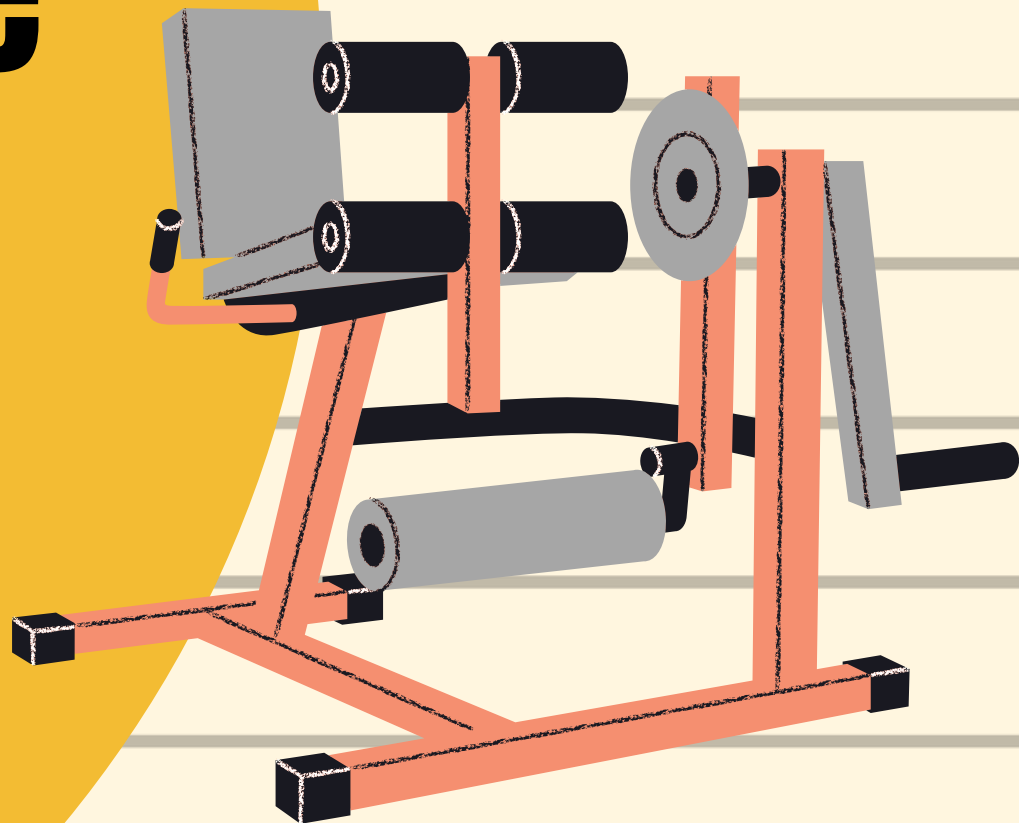
C. Overactive: Hip Flexors Underactive: Glutes

D. Overactive: Glutes Underactive: Adductors

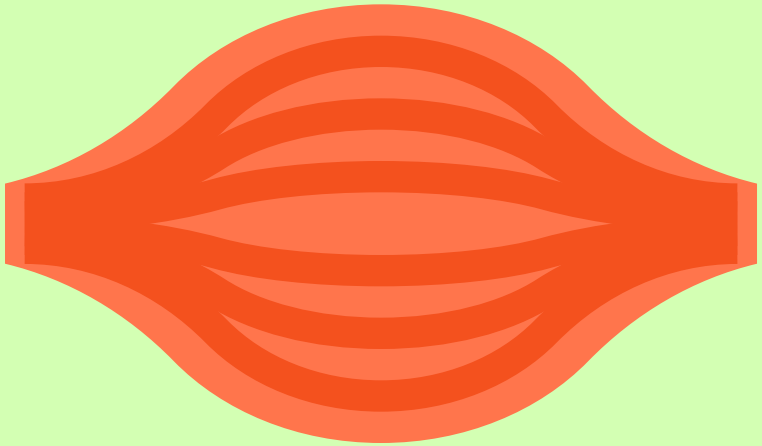
Next up lets talk about agonists and antagonists. An agonist is the prime mover or muscle that does most of the work during a specific exercise. An antagonist is the muscle that opposes the agonist.

The easiest example of this is the biceps and triceps. When I'm doing a biceps curl the biceps are the agonist, meaning they do most of the work. The opposing muscle group, the triceps, would be the antagonist.

So, if I am doing a leg extension, what muscle group is the agonist and what muscle group is the antagonist?



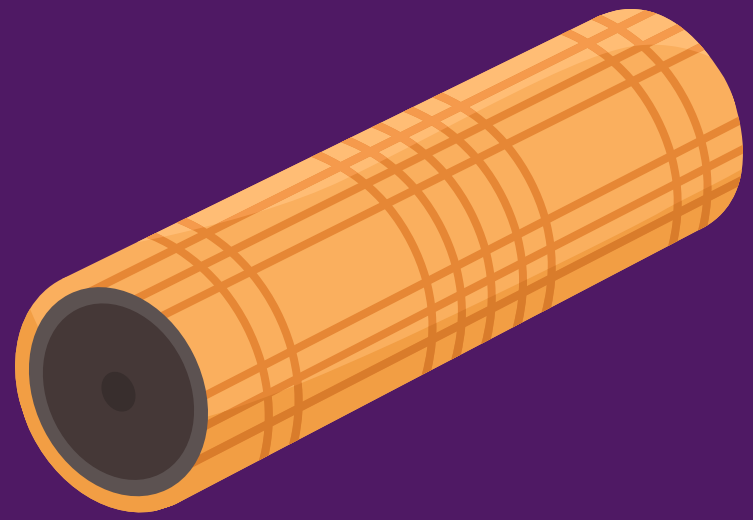
The agonist would be the quadricep muscles.



The antagonist would be the hamstring muscles.

You also have synergists which assist prime movers or agonists with movements.

Reciprocal Inhibition: The relaxation of muscles on one side of a joint to accommodate contraction on the other side.

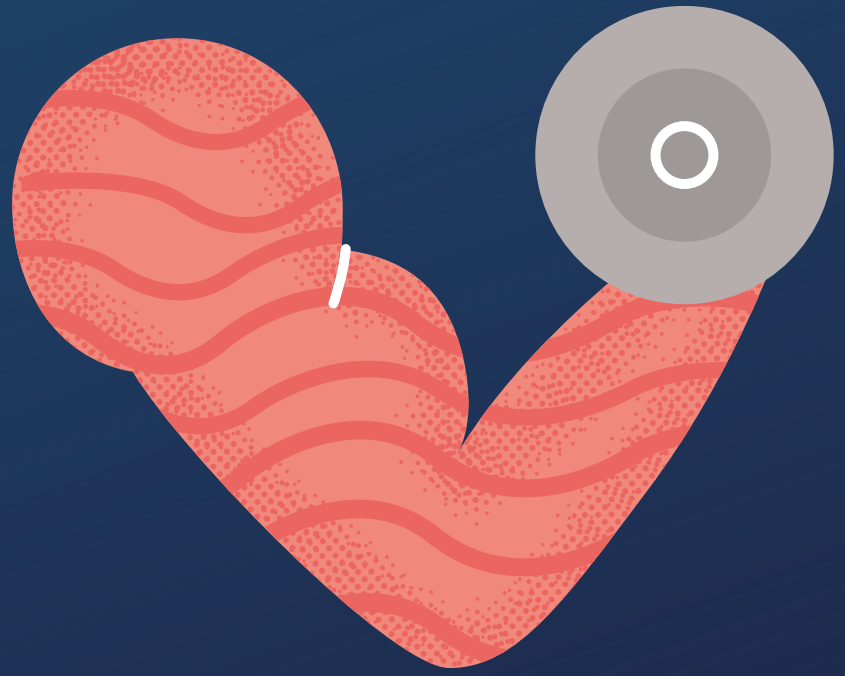


Autogenic Inhibition: The ability of a muscle to relax when it experiences a stretch or increased tension.

Golgi Tendon Organ (GTO): Located at the point where the muscle and tendon meet (musculotendinous junction). The GTO is sensitive to change in muscle tension and the speed of tension change.

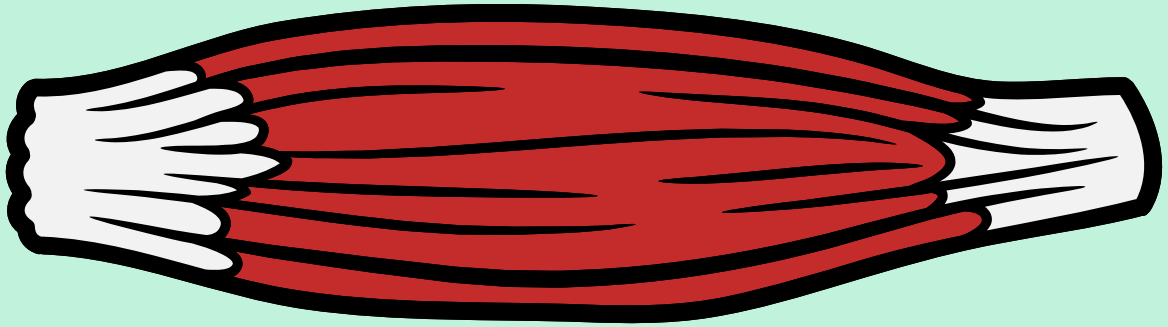
Muscle Spindle: Sensory organs that lie parallel to the muscle fibers. They detect muscle length and the speed/rate at which a muscle is stretching.

Muscle Contraction Types



First up we have static or isometric contractions. These contractions occur when there is no change in muscle length.

An concentric contraction is when a muscle shortens.



An eccentric contraction is when a muscle lengthens.