

Fat Soluble Vitamins: A,D,E,K

Water Soluble Vitamins: C, B vitamins

Major Minerals: Calcium, phosphorus, magnesium, sodium, potassium, chloride, sulfur

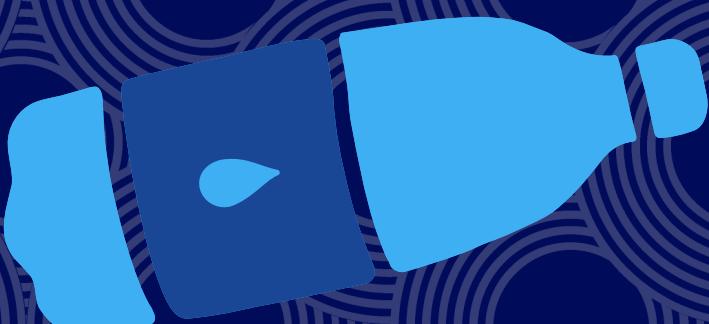
Monosaccharides: They're simple and can't be broken down more (glucose, fructose, galactose)

Disaccharides: Two monosaccharides joined together (sucrose, maltose, lactose)

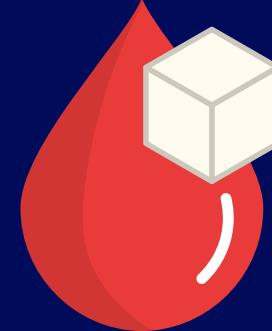
Polysaccharides: Long chains of glucose units. (glycogen, fiber, starch)

Hydration

- 91-125 Ounces of water per day (91 is typically women, 125 men)
 - This is 2.7-3.7 liters
- 4 hours before: Drink 5-7 ml of fluid per kilogram of body weight.
- General exercise: Drink 250 ml (about 8 ounces) of fluid every 15 minutes.
- Drink 24 ounces of fluid for every pound of body weight lost during exercise



Glycemic Index



Low GI (0-54): Foods that release glucose slowly into the bloodstream. (Peanuts 13)

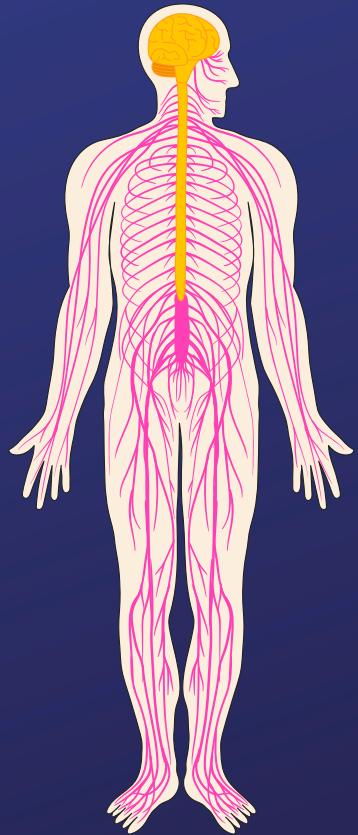
Medium GI (55-69): Foods that raise blood sugar levels moderately. (Raisin Bran 61)

High GI (70-100): Foods that cause a rapid increase in blood sugar levels. (Wonder bread 73)

Random Stuff Worth Knowing!



The nervous system has two main components: the somatic nervous system and the autonomous nervous system. The somatic nervous system is mostly under our control. It mostly involves skeletal muscles and things like that. The autonomous nervous system is automatic as the name would imply meaning it is not under our control.



The autonomous nervous system is split into two parts.

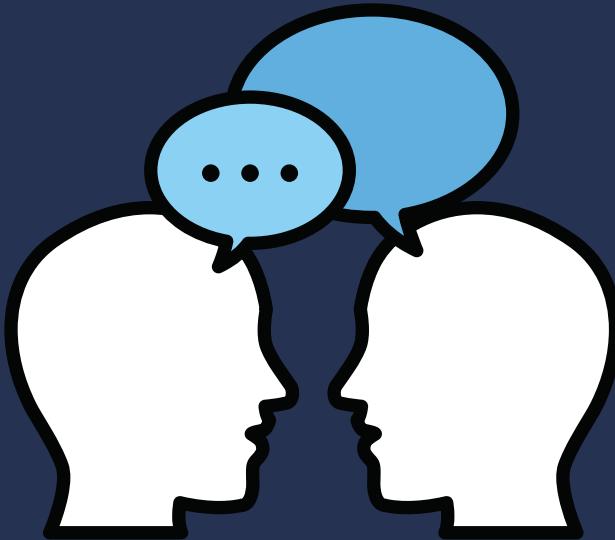
The sympathetic nervous system which controls our fight and flight response, and the parasympathetic nervous system, which has to do with resting and digesting.



Type one muscle fibers are **slow twitch** meaning they have better endurance but produce lower power. **Type two** muscle fibers are **fast twitch** they generate more power but have less than deterrence capabilities.



If something questionable comes up in a session, like your client sharing too much information about their divorce, the correct thing to do would be to redirect the focus of the conversation back to the workout.



When we're talking about scope of practice the least aggressive answer will usually be the correct one.

Ex. You have an injured tennis player client, what should you do?

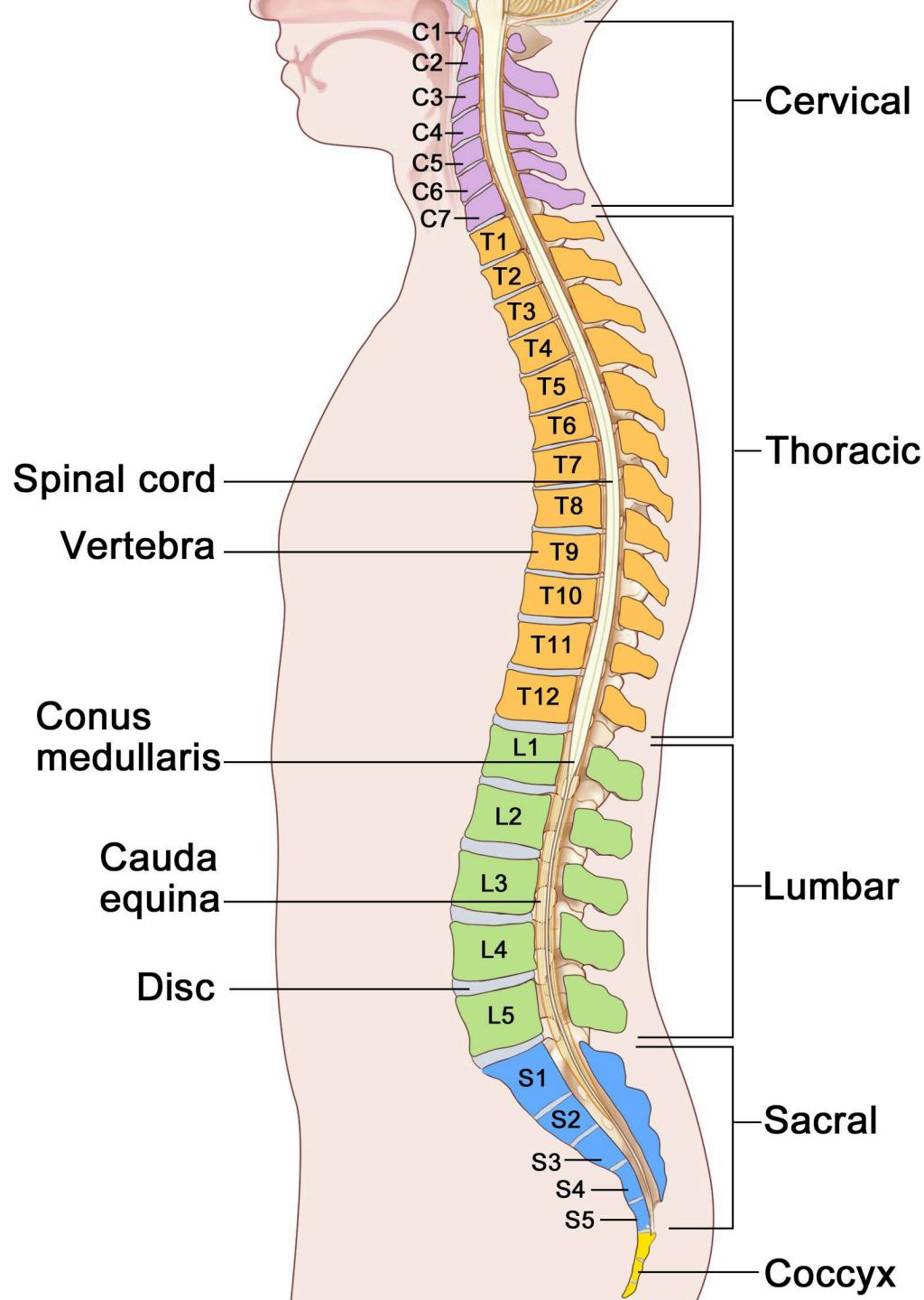
Answer: Show the client some stretches

Static Stretching: Holding a stretch for roughly 30s

Dynamic Stretching: Movement pattern designed to mimic the workout

Ballistic Stretching: Repeated bouncing or swinging to stretch muscle group.

Avoid this one.



Remember breakfast (7 cervical) lunch (12 thoracic) and dinner (5 lumbar) for vertebrae. You also have 5 fused sacral vertebrae.

Sole proprietorship: Business is owned by an individual. No protection for the owner.

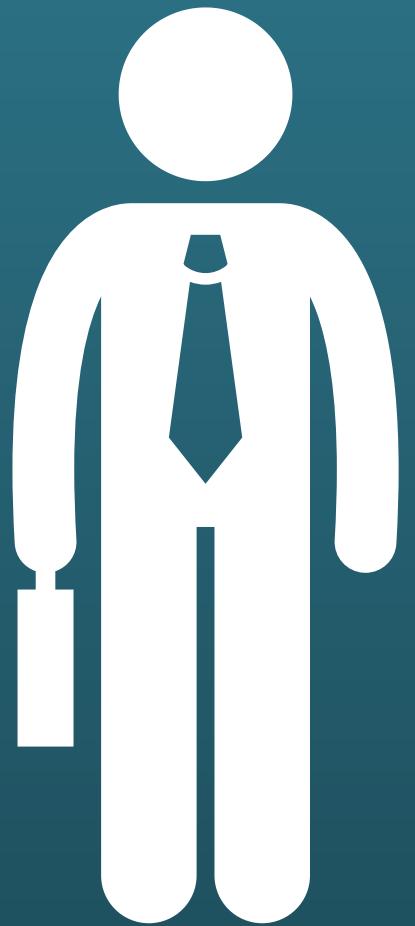


LLC: Provides protection. Forms are required but they are relatively simple (compared to S-Corp)

Independent contractor: A self-employed person or entity contracted to perform work for—or provide services to—another entity as a non-employee. As a result, independent contractors must pay their own social security and medicare taxes.



A worker is an employee when the business has the right to direct and control the work performed by the worker. This includes hours worked, uniforms, etc.

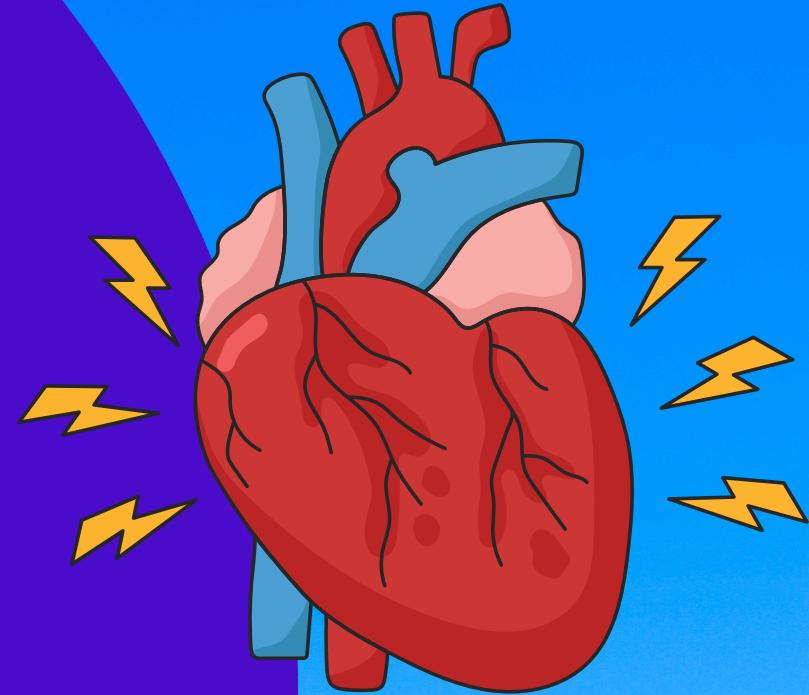


Stroke Volume

Volume pumped out of
the left ventricle

Cardiac Output

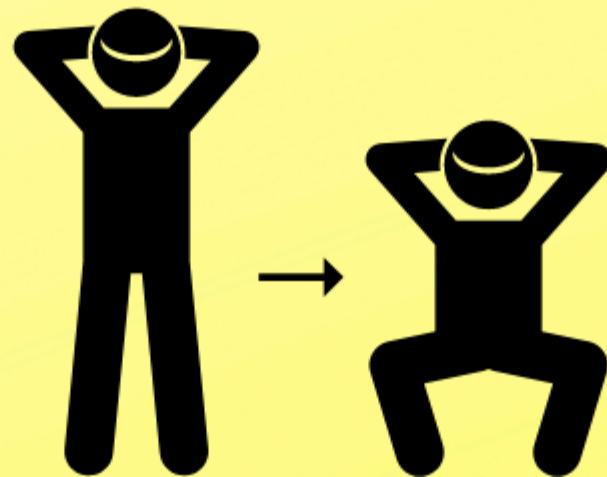
$$\text{HR} \times \text{SV} = \text{CO}$$



THREE PARTS OF A PLYOMETRIC EXERCISE

Part 1: Eccentric Phase

***THE DECELERATION OR LOADING PHASE.
MUSCLES ARE LENGTHENING.***



THREE PARTS OF A PLYOMETRIC EXERCISE

Part 2: Amortization Phase

**THE TRANSITION PHASE. THE DELAY BETWEEN
THE ECCENTRIC AND CONCENTRIC PHASE.**



THREE PARTS OF A PLYOMETRIC EXERCISE

Part 3: Concentric Phase

**SHORTENING PHASE. ENERGY IS RELEASED
(EX. LIFT OFF IN A JUMP)**



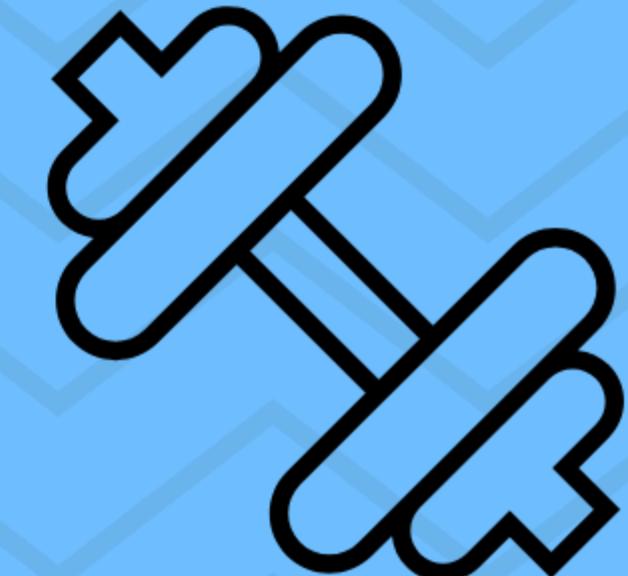
THE SAID PRINCIPLE

**THE BODY WILL ADAPT TO THE
SPECIFIC DEMANDS PLACED ON IT.**





Specific
Adaptation
Imposed
Demands



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.



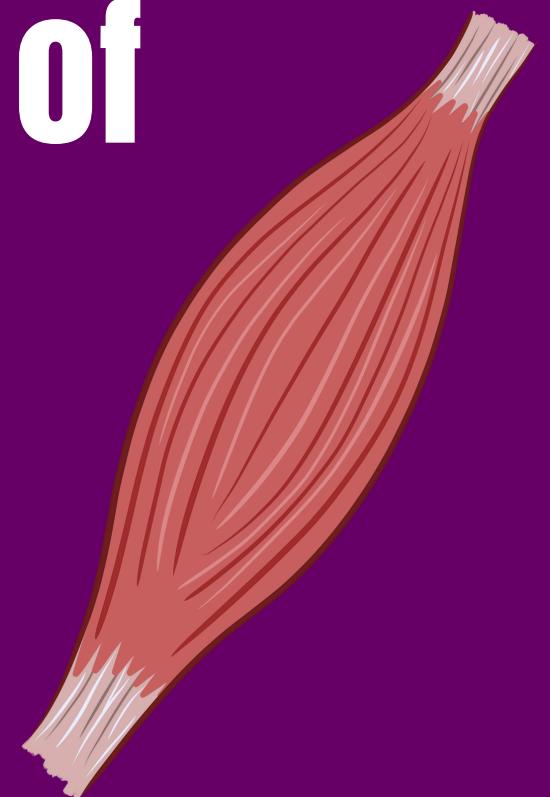
Some Signs And Symptoms of Overtraining

- Training plateau despite continued effort
- Lack of focus
- Motivation issues
- Irritability, anxiousness
- Sleep issues
- Reduced appetite
- Elevated HR
- Elevated body temp.
- Muscle cramps
- Weight loss

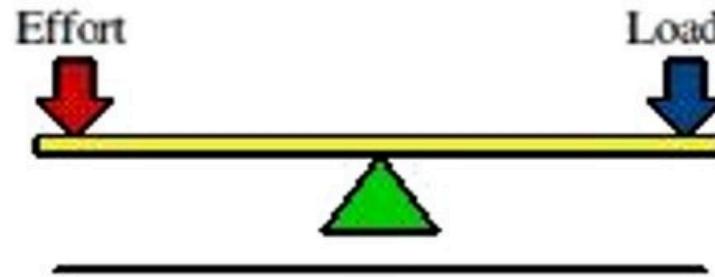


Rhabdomyolysis

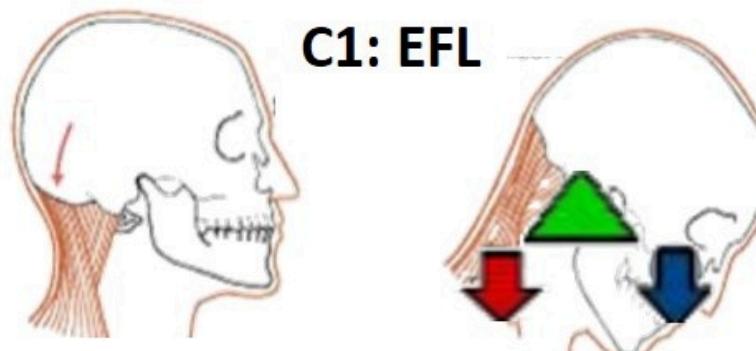
The rapid breakdown of muscle,
resulting in high amounts of
intramuscular proteins.
Dangerous to kidneys.



Class 1

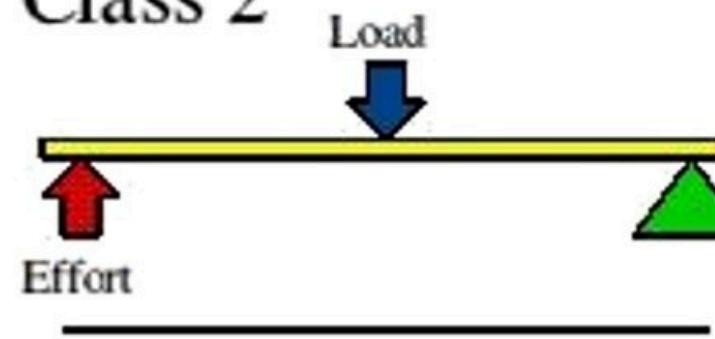


C1: EFL

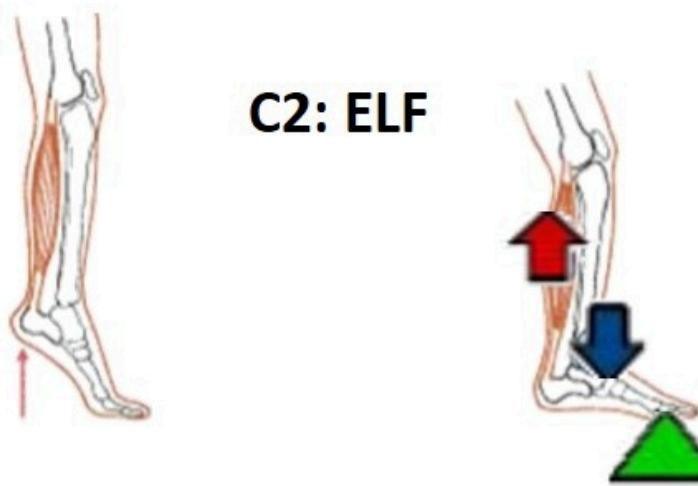


Action Completed
Flexion & Extension

Class 2

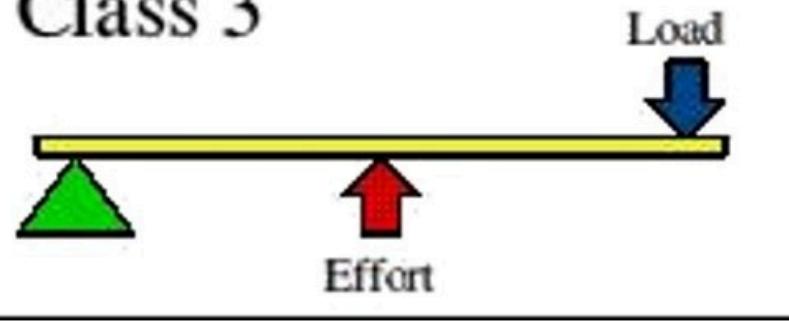


C2: ELF



Action Completed
Plantarflexion & Dorsiflexion

Class 3



C3: FEL



Action Completed
Flexion & Extension

It's common to be asked about two kinds of blood pressure meds.

Beta blockers & Diuretics



Beta blockers: these lower your heart rate at rest and during exercise. A client's heart rate won't raise the same way during exercise when they're on a beta blocker.



Type 1 Diabetes: These people have to inject insulin, they are insulin dependent.

People usually develop this early.



Type 2 Diabetes: These people are insulin resistant. This one usually comes from poor lifestyle choices. It's also more common.

Diuretics: increase the excretion of water from the body through the kidneys. This could increase the likelihood of dehydration.



Dyspnea: difficult or labored breathing.



Syncope: fainting

Orthopnea: the sensation of

breathlessness in the recumbent

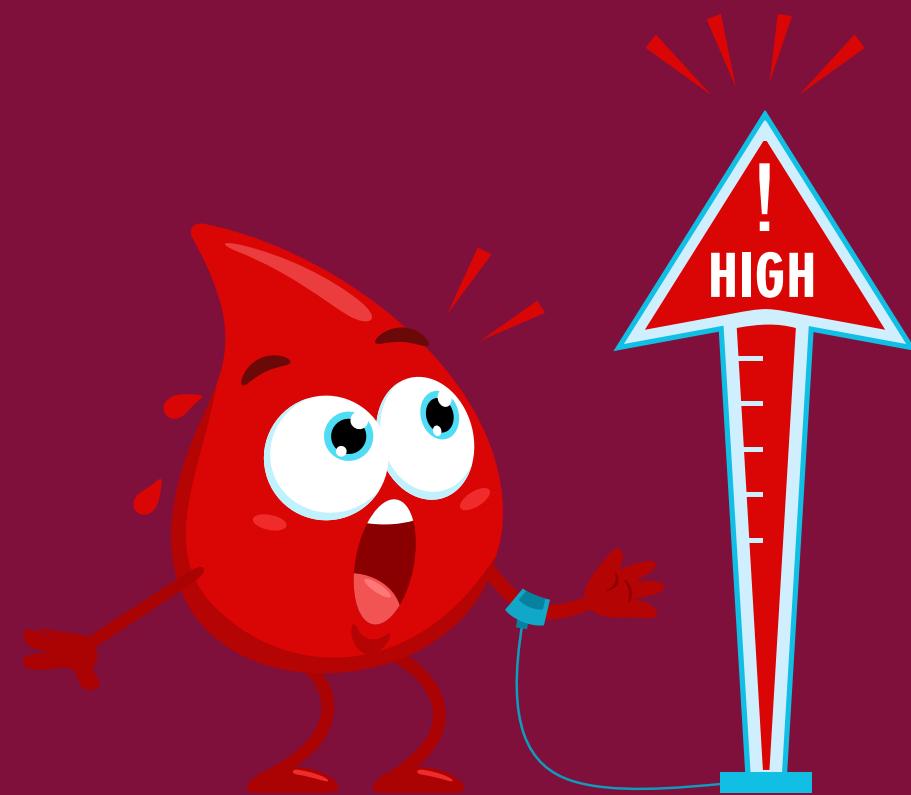
position, relieved by sitting or standing.

**Falling is the number one
claim made against fitness
facilities and professionals.**



What diet is most often recommended to lower blood pressure?

- A: Dash Diet
- B: Keto Diet
- C: Vegan Diet
- D: Lacto-ovo vegetarian



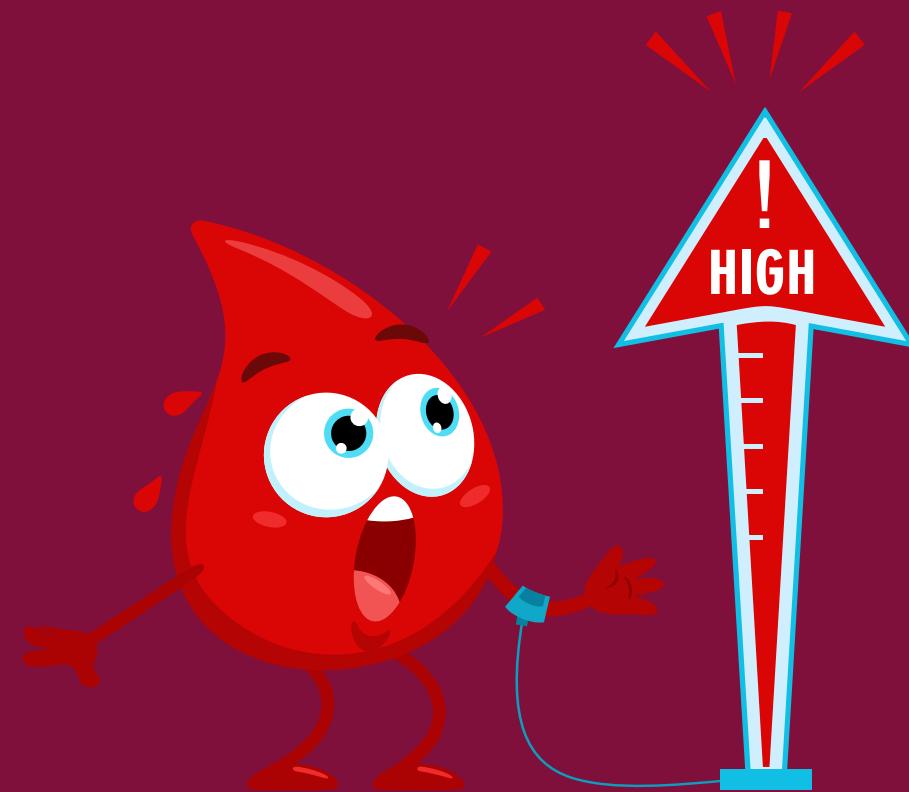
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Open Kinetic Chain: Distal part of the body moves (Curl, leg extension, bench press)

Closed Kinetic Chain: Distal part of the body is stationary (Squat, push-up, hip bridge)



Glycogen: stored form of glucose that's made up of connected glucose molecules.



Gluconeogenesis: The process of how glucose is created within the body. Protein can be used.

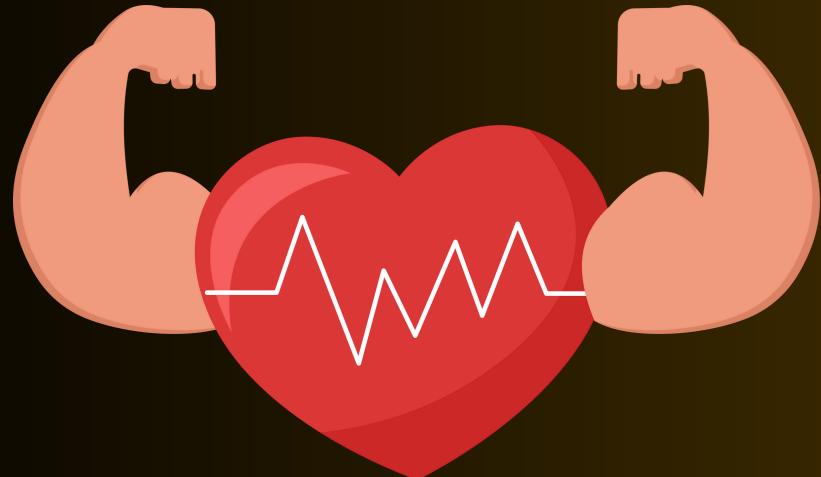
DOMS (delayed onset muscle soreness) usually begins to develop 12-24 hours after exercise and is most intense 24-72 hours later.



The eccentric portion of the lift, where the prime mover or agonist is stretching, is the part of the lift that causes the most soreness.

Max Hr. = 220 - AGE

HRR Heart Rate Reserve = Karvonen



Stroke Volume: amount of blood pumped out of the heart's left ventricle with each beat.

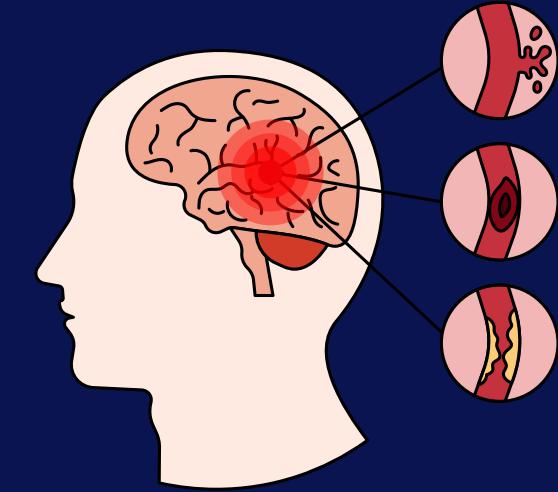
Cardiac Output: HR x SV

Osteoporosis: a bone disease that causes bones to become weak and brittle, increasing the risk of fractures



Osteopenia is a decrease in bone mineral density that's not severe enough to meet the diagnostic criteria for osteoporosis.

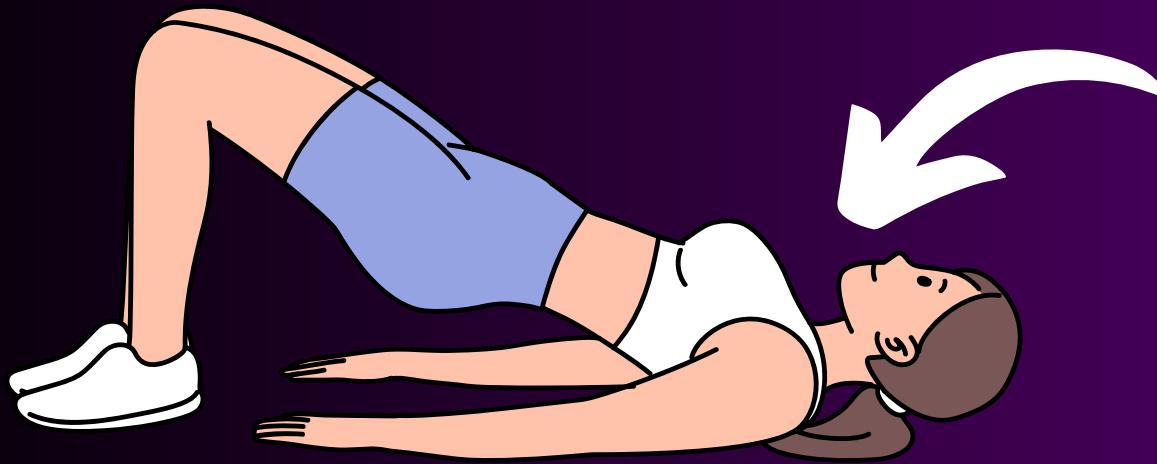
A stroke is when blood flow to the brain is blocked.



Symptoms:

Weakness, numbness of face or side of body, confusion, dizziness, headache, difficulty speaking, difficulty breathing or swallowing

**Exercises on the floor
(supine)are contraindicated
for pregnant people after
the first trimester, and for
people with hypertension.**



**Common mistake: Raising
hips too high which can
cause hyperextension**