



TRAINING SPECIAL POPULATIONS

Case studies and insights gathered from specific health considerations.

BIANCA GROVER | EP-C, CMES

Executive Summary

INFORMED TRAINING

As a health and fitness professional with credentials that position me as an allied health professional, I have the privilege and responsibility of working with special populations. In health and fitness settings, these are individuals with medically complex considerations. These can include- but are not limited to - diseases, injuries, conditions, orthopedic issues and more. These considerations heavily impact exercise prescription, nutrition guidelines and fitness goals - which means I must be informed and prepared for every aspect.

The Informed Health & Fitness Professional

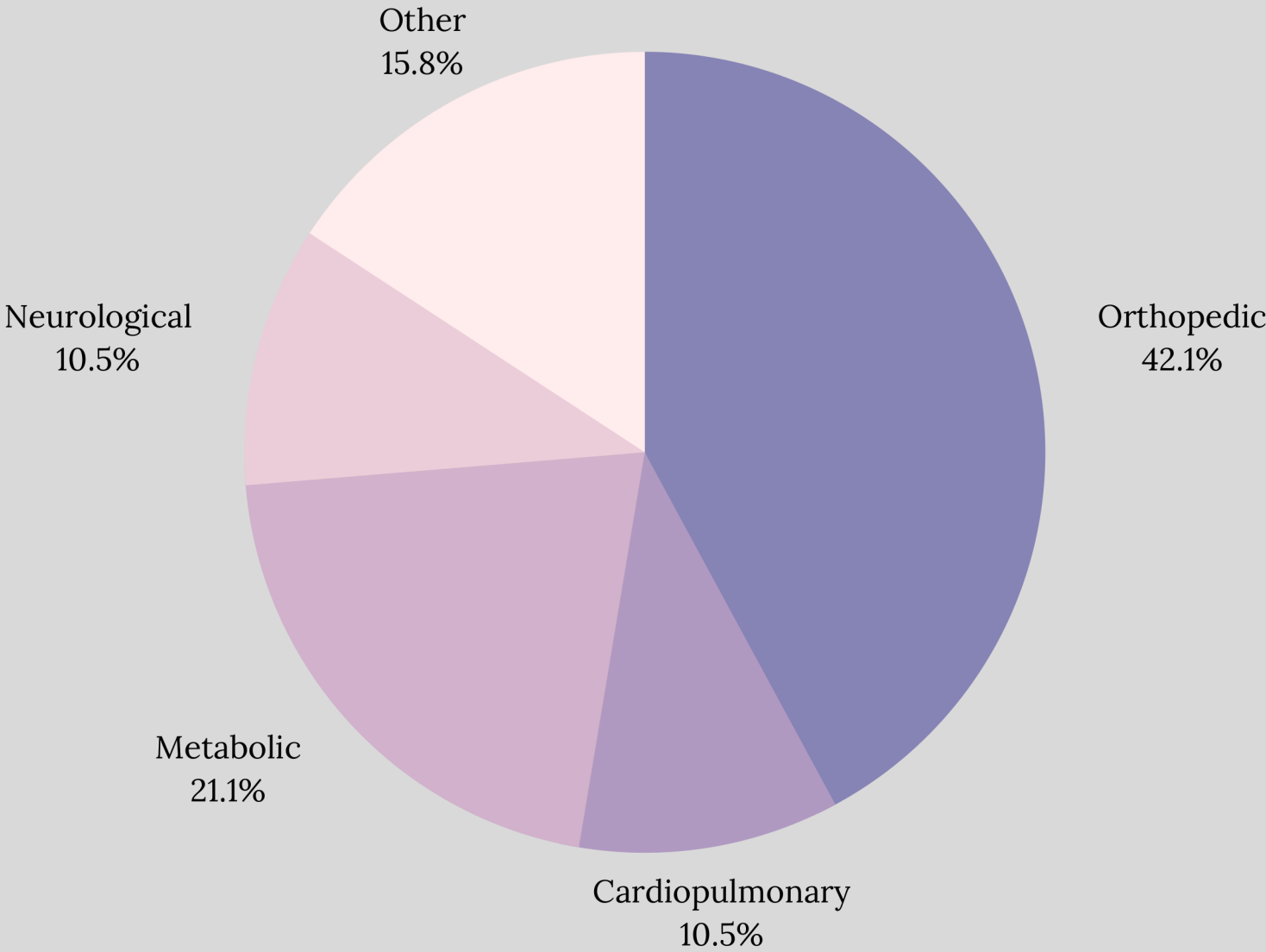
Being educated and prepared for the various requirements an individual with special considerations could have, is essential for safe and effective programming. Working without due diligence, is unsafe and unprofessional. The good news is, there is no expectation that a fitness professional is familiar with every possible scenario. Rather, the expectation should be that the fitness professional can combine their in-depth knowledge of exercise science and physiology with industry-best resources, in order to properly work with the individual and their needs.

What to Expect

Within this whitepaper, we will explore a handful of special considerations I have worked with over the past few years, and the suggested methods and approaches uncovered for each.



Experience With Considerations



Orthopedic Consideration

PATELLOFEMORAL SYNDROME

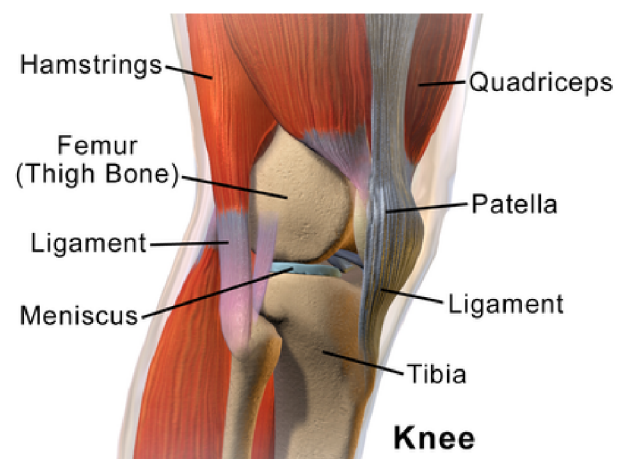
Patellofemoral (puh-tel-o-FEM-uh-rul) pain syndrome is pain at the front of your knee, around your kneecap (patella). Sometimes called "runner's knee," it's more common in people who participate in sports that involve running and jumping.

The knee pain often increases when you run, walk up or down stairs, sit for long periods, or squat.

I have worked with individuals who have patellofemoral syndrome a few times in my career, thus far. This is considered one of the most common forms of knee pain.

Causes include overuse, imbalances or weakness within the muscles surrounding your hips and knees, injuries to the knee, or surgeries (especially to the ACL).

For this specific orthopedic consideration, focusing on the muscles that help stabilize the knee is very important.



KEY CONSIDERATIONS

- Strengthening the muscles that surround and stabilize the knees: Quadriceps, Biceps Femoris, Semitendinosus, Semimembranosus
- Strengthening the muscles that surround and stabilize the hips: Gluteus Medius, Gluteus Maximus, Piriformis, Deep Core Muscles
- Gradually increasing stress and load to prevent injury and encourage strength and stability

Metabolic Consideration

TYPE 2 DIABETES

Type 2 diabetes is an impairment in the way the body regulates and uses sugar as a fuel. This chronic condition results in too much sugar circulating in the bloodstream. This is the most common form of diabetes.

Eventually, high blood sugar levels can lead to disorders of the circulatory, nervous and immune systems

Diabetes is another common condition (more than 37 million Americans have diabetes) that I have worked with.

There are two interrelated problems at work. The pancreas does not produce enough insulin and cells respond poorly to the insulin that is produced, and take in less sugar.

Luckily, diabetes is a metabolic disease. It responds very well to exercise therapy, since regular physical activity promotes a healthy metabolism.



KEY CONSIDERATIONS

- Monitor blood sugar levels before and after exercise. A healthy range is considered to be between 150 and 180.
- Note that **exercising lowers blood sugar concentrations.**
- If blood sugar levels are 300 or above, postpone exercise
- If blood sugar is below 140, try eating 15 grams of carbohydrates prior to exercise so the level doesn't drop too low

Cardiopulmonary Considerations

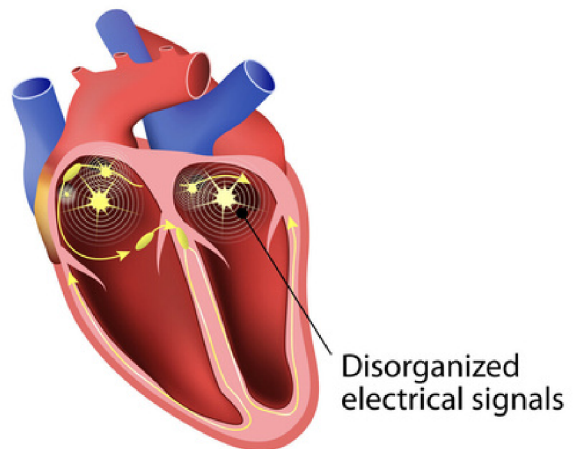
CARDIAC ARRHYTHMIA

A heart arrhythmia (uh-RITH-me-uh) is an irregular heartbeat. Heart rhythm problems (heart arrhythmias) occur when the electrical signals that coordinate the heart's beats don't work properly.

The faulty signaling causes the heart to beat too fast (tachycardia), too slow (bradycardia) or irregularly.

Heart arrhythmia may feel like a fluttering or racing heart and may be harmless. However, some heart arrhythmia may cause bothersome – sometimes even life-threatening – signs and symptoms.

Treatment may include medications, catheter procedures, implanted devices or surgery to control or eliminate fast, slow or irregular heartbeats. A heart-healthy lifestyle can help prevent heart damage that can trigger certain heart arrhythmias.



KEY CONSIDERATIONS

- Understanding individual cases of heart arrhythmia is a must.
- In some cases, there may be a limit set for exercise heart rate.
- Be cautious of blood pressure fluctuation during certain movements
- A heart rate monitor or similar technology is strongly encouraged

Non-Categorized Consideration (Other)

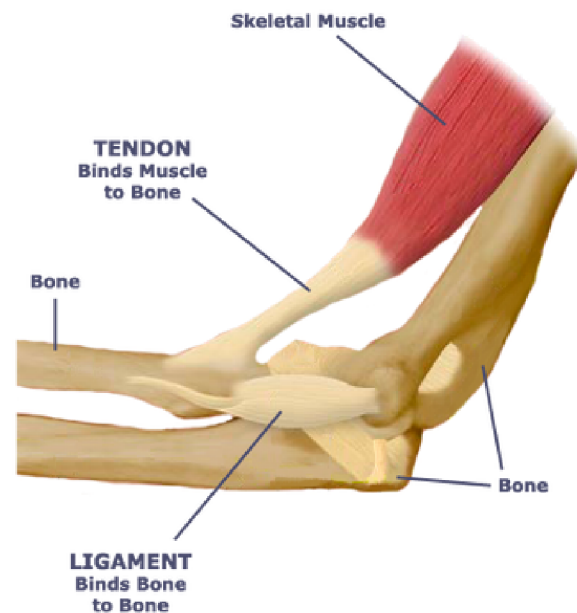
SJOGREN'S SYNDROME

Sjogren's (SHOW-grins) syndrome is a disorder of the immune system identified by its two most common symptoms – dry eyes and a dry mouth. The condition often accompanies other immune system disorders, such as rheumatoid arthritis and lupus.

In Sjogren's syndrome, your immune system first targets the glands that make tears and saliva. But it can also damage other parts of your body.

Sjogren's syndrome is a far more rare condition, and although its primary symptoms do not directly impact exercise, I have worked with an individual who's specific case targets connective tissues and joints.

It is proven that joints and various connective tissues can become stronger when placed under an appropriate amount of load, similar to muscles during resistance training, but this must be done with great caution in this particular situation. There may be joints and tendons that need to be avoided altogether.



KEY CONSIDERATIONS

- Each individual with Sjogren's syndrome will have different issues to consider, so you must ask
- When trying different exercises, especially with load, you must take into consideration the musculoskeletal points under pressure
- Always start with lower resistance and gradually increase load. Typically, at a slower pace than normal