

## LECTURE 3

# Special Populations

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LECTURE **3**

# Special Populations

There are typically four populations that you may work with in your role as a fitness instructor that require more specialist attention in terms of their programming. We will now look a little deeper into the guidelines you should follow when training:

- Young Adults and Adolescents
- Pre/Post-Natal females
- Older Adults
- Disabled Clients

## Older Adults

Let's begin with older adults and the specific issues you need to be aware of with this demographic of clients.



**Anyone over the age of 50, even those that are fit and healthy may have to deal with the issues that affect the older population. If you train regularly, these issues will be delayed but it is hard to eradicate all issues that the older population deal with...**

50 years of age is recognised as the age that the body starts to progressively decline in function. This includes the skeletal, neural and muscular systems. Not everyone over 50 will require special attention but you should be aware of the effects of the ageing process. Your approach to the client won't change much from that which you apply to the younger generation but you may want to apply some variation to your exercise prescription depending upon the results of screening...

**The good news...? Exercise can significantly slow down these effects!**

**The following effects can occur due to aging...**

- **Aerobic Endurance**  
Our ability to achieve and maintain a high heart rate declines as we age, the upper limit heart rate also lowers making it harder to endure long term exercise.
- **Balance & Coordination**  
Our ability to read situations properly begins to decline as we age, leading to issues with balance. We can try to combat this by utilising exercises that safely train and test balance.
- **Bone Mineral Density**  
A degeneration in the body's ability to regenerate bone tissue at the same rate it used to may lead to a loss in bone density. Additionally, a lower exercise tolerance can lead to reduced stress response.
- **Muscle Power**  
Coupled with the loss in physical mass, the nervous system may decline in its ability to generate efficient recruitment of motor units to generate force.
- **Flexibility, Mobility & Range of Motion**  
The ligaments and tendons have a tendency to become stiffer as we age, and therefore offer less range of movement.
- **Loss of Strength**  
The process of muscle wastage as we age can lead to a loss in strength

**So...having discussed the issues how do we keep our older clients safe?**

- **Proper Screening**  
It is always good practice to screen clients well before they start exercise. With older adults, considering the issues they may face, it should be considered a 'must'. You must also consider the things that will safeguard against potential injury etc in your subsequent programming.  
  
There are specific issues you may encounter with this population more than others, including osteoarthritis, osteoporosis and balance-related problems.
- **More Gradual Warm-Ups & Cool-Downs**  
The systems of the body (the cardiovascular and muscular systems) and the joints take longer to become fully prepared for exercise. You should take a little longer for this process and progress the intensity more gradually.  
  
The same applies to the cool-down. Don't rush this process. The peak intensity of the session may decrease in duration but the client's safe completion of the session is more important.
- **Carefully Monitored Exercise Intensity**  
Remember the focus of the exercise for aging adults is generally more related to health-based targets and quality of life. You should challenge their bodies and its various systems but always keep in mind the limits. Don't overload the client so much that they are impaired for days afterwards. Consistent and frequent exercise is a better approach than higher intensity.

- **Focus on Technique**

Exercise technique is vital with any population. With the ageing population however, there is an increased chance of injury if you allow form to be of less importance. Consider a deadlift as an example. As we age, we may become slightly more rounded in our spinal alignment. With this in mind, if we allow people to lift in this posture it may lead to back injury.

- **Simple Exercises**

Now is not the time to layer on complex exercise technique, unless your client is well trained already. Simplify the exercises as best you can to ensure success, and then challenge more over time.

- **Sensible Exercise Order**

Getting your older clients up and down from the floor over and over again isn't helpful with those who have difficulty with this kind of movement. Organise your exercises in such a way that they can move from one to the next without added stress.

- **Relatable Exercises**

Exercises should relate to a person's day-to-day needs. Climbing stairs is an example here. Lots of people need to climb stairs in their daily life, so introduce the exercise to assist day-to-day function rather than as a way to build up the quads, glutes and hamstrings. This is a more relatable context.

- **Keep Issues in Mind**

You should remain aware of the issues people face. For example, maybe we shouldn't expect our aging clients to achieve a full range of motion on a squat when the joints offer less movement potential. Work within the client's limits and celebrate their success.

- **Promote Benefits of Resistance Training**

Resistance training is a very useful addition to the exercise habits of the ageing population. It promotes a decreased rate of sarcopenia (loss of muscle) and challenges the nervous system as well as the muscular and skeletal structures. The inclusion of some form of resistance training, whether it be weights, suspension training or even bodyweight, can have a great impact. Resistance training a couple of times per week can help to keep the musculoskeletal system healthy.

We have an ageing population now who are living to fantastic old ages. We need to ensure we pay attention to the issues people face and assist them accordingly to enhance their lives as best we can through exercise.

# Pregnant Clients

**Firstly, it should go without saying that you should properly screen your clients and ensure there are no underlying issues or history of problems prior to training. As a rule, it is a good idea to gain medical clearance for pregnant clients to exercise ahead of training, and complete a thorough screening alongside the medical practitioner. You should also be aware of the potential issues facing pregnant clients...**



In most instances it is perfectly safe, and very beneficial to exercise throughout pregnancy. It is important to be fully aware of the issues facing pregnant clients during this time.

Many women train regularly so it makes sense to continue this during pregnancy, and while this is safe to do it is important to follow the guidelines. This also goes for anyone **starting** exercise during pregnancy. It is generally agreed that now is not the time to take up a new, very challenging form of exercise and that any form of exercise use should be taken with care.

As a personal trainer, you want to include the client's medical practitioners and midwife in the process to ensure safety for mother and baby throughout the process. If you are either uncomfortable, or unqualified in any of the guidelines you should refer to a trainer with more experience and knowledge.

## Key Guidelines When Working with Pregnant Clients

### Stop Exercise If...

- Dizzy or nauseous.
- Bleeding or leakage of amniotic fluid.
- Abdominal pain or contractions.
- Unexplained pain in back, pelvis or other lower body area.
- Excessive shortness of breath, chest pain, heart palpitations or rapid pulse.

## **New To Exercise**

If they are newly taking up exercise while pregnant they should start slowly and avoid anything too strenuous. Start by building up to 15 minutes of exercise 3 times per week, gradually increasing from there.

## **Exercise Selection**

Pregnant women should be encouraged to work on a self-paced exercise programme. This can work to ensure that you don't assign too much intensity. You should also consider...

- No exercises with a risk of falling.
- No exercise with a risk of trauma to the midsection such as rowing.
- No exercise in the supine position after 16 weeks of pregnancy.
- No exercise in the prone position.

## **Monitor Intensity**

Use RPE (rate of perceived exertion) and the talk test, because monitoring the heart rate itself can be problematic and potentially inaccurate during pregnancy. Utilise a moderate RPE rate and ensure you can hold a conversation.

If a pregnant client attends a session or class they should always let the instructor know they are pregnant so they can offer the best options to ensure safety.

## **Exercise Type**

Water based exercises may be a good recommendation based on the fact that in water there is less concern for joints and balance issues that may be related to hormones and changes in body dimension or centre of gravity.

## **Expectations**

Pregnancy is not the time to be attempting to make major progressions. Maintenance and health are the main concerns, and this should be made clear at the outset.

## **Hydration**

Pregnant women should ensure they stay hydrated and take regular drinks. Exercise in a cool area if possible to avoid overheating.

## **Calorific Intake**

Whilst pregnant women should not be in a restrictive calorie deficit. It is important to remember that they are consuming clients for both themselves and the baby.

## **Duration**

Sessions should really be limited to around 45 minutes and should be self-paced to avoid exhaustion.

# Pre-Post Natal Clients

The following considerations should be in your mind as you prepare programmes for your pre/post-natal client...

- **Stop exercising if your client experiences any of the following...**

Dizziness, chest pain, muscle weakness, calf pain, excessive fatigue or dehydration or back pain

- **Seek medical attention if your client experiences any of the following...**

Vaginal fluid loss, abdominal pain or contractions, vaginal blood loss, shortness of breath, nausea or baby isn't moving much.



The following considerations should also be in your mind...

- **Hormonal Changes**

There is an increased secretion of the hormone relaxin during pregnancy and post-pregnancy. This hormone assists in the elasticity of the connective tissues to aid birth. However, as it is a hormone, it travels in the bloodstream and reaches all areas of the body leaving females possibly susceptible to overstretching.

- **Dizziness, Nausea, Fainting & Fatigue**

PTs should always monitor pregnant clients for any signs of tiredness, fatigue, nausea, dizziness and dehydration. Always stop the session if these signs and symptoms appear for the safety of the client and her baby.

- **Postural Changes**

As the foetus grows, the female's centre of gravity shifts forward, potentially causing a lordotic effect at the lumbar spine and consequent back pain.

- **Returning To Exercise**

Women should listen to their bodies but can return to gentle walking etc when they feel ready. Structured exercise should wait until around 6-8 weeks following their post-partum medical check. In the case of Caesarean section, the advice is to extend this return to training until around 12 weeks.

- **Post Natal Exercise Selection**

An effort should be made to include exercises to re-establish joint stability, core reconditioning and muscular imbalances. Strengthening the core and pelvic floor should take priority as these deep-lying muscles can offer a firm foundation for future exercise. Avoid doing direct stomach exercises such as crunches etc.

- **Other Considerations**

Women should still be referred to a medical professional if they suffer anything out of the ordinary such as bleeding, stress, incontinence, signs of diastasis recti (non-return of separated abdominal muscles), unusual pain in the hips or groin.

# Disabled Clients

**When working with clients who have disabilities it is important to remember that the physical and psychological benefits to exercise are similar to those for a client who is not disabled. The self-mastery and independence associated with exercise for a disabled client may be a major benefit, and it is hard to overstate the importance of this. The ability to make tasks of everyday life easier is an enormous benefit to exercise for disabled clients.**

- It should go without saying that you should properly screen your clients and ensure there are no underlying issues, or history of problems prior to training. As a rule it is a good idea to gain medical clearance for pregnant clients to exercise ahead of training, and complete a thorough screening alongside the medical practitioner. You should also be aware of the potential issues facing pregnant clients...
- It is important to note here that disability is a term that covers a massive range of issues. A disability would be any condition of the mind or body that makes it more difficult for the person to carry out certain activities or interactions. Here we will not be able to cover every issue you may come across. We will however also mention that if at any time you feel ill-prepared to assist a client then you should always seek to introduce the client to a more appropriate trainer or professional.



**Firstly we need to discuss the lawful aspects that you should be aware of...  
The Disability Discriminations Act of 1995 and Equality Act 2010.**

According to the DDA and the Equality Act it is unlawful to discriminate against disabled persons in connection with employment, the provision of goods, facilities and services or the disposal or management of premises. In the fitness industry as it relates to members there must be reasonable adjustments to ensure inclusivity for fitness facilities, services and premises.

## **The Inclusive Fitness Initiative (IFI)**

The IFI has been established to ensure health clubs can assist more disabled users. It works to ensure they can provide appropriate service to them, and welcome more disabled people into their facilities. Achieving the IFI mark is a sign that the facility is working to address inequality in the provision of service to disabled members.



## Types of Disability

Now let's have a look into the types of disability you may come across in your role as a personal trainer -

- **Physical disabilities** – many of these disabilities are 'progressive' in nature, meaning they get worse as time goes by. Examples of such would be multiple sclerosis and muscular dystrophy. There are also 'non-progressive' disorders such as cerebral palsy and spina bifida.
- **Spasticity** – generally a consequence of a neuromuscular disorder, spasticity presents as an intermittent or sustained activation of muscle. It may occur as a result of other issues. You must gain guidance from a medical professional before attempting to assist in stretching muscles for someone with this condition.
- **Neurological** – we touched on muscular dystrophy on a prior section but this would be an example of a neurological disability that you may come across.
- **Sensory disability** – Loss of sight, hearing, spatial awareness and sensory nerve damage would all be recognised as sensory disabilities.
- **Mental health disabilities** – depression, anxiety, schizophrenia, mood disorders, eating disorders and personality disorders are all examples of mental health issues, many of which you may see in your role as a personal trainer.
- **Learning difficulties** – with this type of disability, exercise can offer tremendous benefits in terms of both physical health markers and psychological wellbeing. Making exercise fun, enjoyable and manageable is really important.

## More About Physical Disabilities

Physical disabilities are a category of disabilities we need to explore further as there are further subcategories to be aware of...



### Progressive Issues

Multiple sclerosis and muscular dystrophy are two examples of progressive disorders. The client can exercise but you must consider the variety of exercise and seek medical advice or that of a suitably trained instructor, in order to challenge the client but not make the condition worse.

### Asymmetrical Issues

Asymmetrical weakness and imbalance can be the result of many issues including strokes and cerebral palsy. If there is a difference in functional ability from one side of the body to the other, we should aim to strengthen the weaker side and maintain strength in the stronger side. There are more guidelines available in the medical world.

### Wheelchair Exercise

In the instance of a disability rendering part of the body unable to be used, you should work with the client around the issues they face to ensure they remain active.

Exercise can offer considerable advantages to everyone, and disabled participants can enjoy a huge range of specific benefits which may include...

- Reduction in stress, pain and depression.
- Social benefits, bonding and interaction.
- Physical functioning improvements.

**The overwhelming thing when discussing exercise with disabled clients is that there are so many options available to you in terms of research, guidance and advice. You should always seek out the best advice and consult with the client's doctor to ensure the exercise you are doing will not cause greater problems.**

**If you feel unqualified to assist, you should always refer the client to someone who is better placed to help the client in terms of qualifications and experience.**

## Working with Young People

**Physical activity is ever-more necessary for the younger population who may not get as much activity in their day-to-day lives as used to be the case. The result is an increase in childhood obesity in the younger population and this is a worrying trend with many adolescents not meeting the recommended guidelines for physical activity.**

As a result of the above you will likely see more and more kids and young adults in your role as a personal trainer. The recommendations are that adolescents achieve two different types of exercise stimulus each week – cardiovascular exercise and strengthening exercise. 5-18 year olds should aim for 60-minutes of moderate-intensity activity per day. This can be spread across the day and can be varied.



The issues you must be aware of when training youngsters are as follows...

- **Growth plate fractures** – growth plates are the final part of the bone to solidify in growth. It is important that while we add stress to the musculoskeletal system, we don't add lots of repetitive and unnecessary impact.
- **Fun and games** – children should be encouraged to play games and sports-related activities. These will be more random in nature and offer variable stresses to the body.
- **Stretching and flexibility** – be aware of the extent of stretching when adolescents are going through growth spurts. Outside of this it appears that stretching assists flexibility in the same way it does for adults, but you should be aware of body awareness etc.
- **Intensity** – children should work in a range of intensities. They may not be able to regulate temperature as well as adults which necessitates more water breaks etc but varied intensities can make up much of the activity guidelines for youth exercisers.
- **Anaerobic exercise** – due to their smaller muscles, children may not hold or utilise glycogen and creatine phosphate stores like adults. They also cannot generate the same kind of power or endurance as an adult but may recover faster from intense exercise.

## Training Adolescents

**There are some things you should take into consideration when training adolescents...**

- **Fun** - exercise should be fun and if you can create positive associations through enjoyment, they will be much more likely to continue as they get older.
- **Impact** - high impact exercise is best avoided with younger participants whilst they are still growing and their bones are softer.
- **Complexity** - begin with simple, low resistance exercises that match every day movements.
- **Warm-up and cool-down** - delivering education whilst doing warm-ups and cool-downs can help to improve the likelihood that they will continue the good habits into adulthood.
- **Excessive training** - prevent excessive training as this can be damaging to growth.
- **Equipment** - be aware that children won't fit on all the equipment in the gym, which have been designed largely for adults. You should plan well to accommodate properly.
- **Exercise selection** - free weight and bodyweight exercises are a good choice here as there is no issue with body size and the increments of increase on free weights can be very small.
- **Breaks** - allow regular water breaks to avoid overheating. In addition, adolescents do not have a fully developed anaerobic capacity so they cannot consistently work at high intensities.
- **Gender** - when delivering a session to a group, remember to have a range of options available as young people as well as each gender develop at different rates.

# In Summary

We have touched on a range of the considerations you should be taking into account when training a range of special populations in your new role.

By no means is this content an exhaustive account of the issues you may see and find through your career. Equally there is much more content available on all the special populations we have discussed. You should research prior to working with any of these populations and stay within the boundaries of your qualifications and expertise.

You should always research comprehensively, never stop learning, remain open-minded, and above all refer your client to a more appropriately qualified and experienced professional if you feel ill-prepared to help.

