

NCEF National Council for Exercise & Fitness

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# Pilates & Corrective Exercise

## Special Populations

### General Guidelines and Precautions

Materials developed by Bridget Lawlor

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## Learning Outcomes

At the end of this session you will be able to:

- Describe general exercise guidelines and precautions for the following conditions;
  - Arthritis
  - Asthma
  - Cardiovascular disease
  - Diabetes
  - Joint replacements
  - Obesity
  - Older Adult
  - Osteoporosis
  - Pregnancy

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## Special Populations

- This section should be read in conjunction with Referral Guidelines and Lifetime benefits of Pilates Method; Family Health, Aging and Disease.
- Many healthcare practitioners recommend Pilates as a suitable form of exercise for individuals recovering from illness or injury or with a specific medical condition. As a result, Pilates' instructors are likely to encounter clients with a variety of disease processes and problems.

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## General Guidelines and Precautions All Conditions

- Always focus on correct spinal alignment and stability in preparation for exercising the extremities.
- Always provide an exercise programme appropriate to the individual's level of fitness, so as to progressively increase strength and stamina and thereby build on the individual's trust and confidence.

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## Arthritis

- Two of the most common type of arthritis' are Osteoarthritis (OA) and Rheumatoid Arthritis (RA).
- Improving muscle strength and enhancing flexibility through exercise can decrease the symptoms of arthritis.

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## Arthritis

- OA is caused by degeneration of cartilage in joints.

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- RA is a systemic, degenerative joint disease in which the body's immune system mistakenly attacks its own tissues in the joints, causing an inflammation response leading to pain and stiffness.



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**Arthritis - General  
Guidelines &  
Precautions**

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- Refer specific pains back to a healthcare professional
- Avoid exercising during RA flare ups
- Be aware of client's degree of pain & disability
- Plan exercise sessions for when joint swelling and pain are least problematic

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**Arthritis - General  
Guidelines &  
Precautions**

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- Spinal mobilisation exercises can be conducted only when there are no contraindications such as osteoporosis or painful spinal pathology (Pathology is also the term used to describe a disease or condition, its root cause, development and consequences.)
- Exercise muscles that support the affected joint
- Mobilise affected joints through a comfortable ROM

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**Arthritis - General  
Guidelines &  
Precautions**

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- Include exercises that improve proprioception and balance
- Avoid exercises & activities that aggravate the condition
  - i.e. that cause pain in the performance of the exercise or that cause pain to persist for more than 1 hour after exercise

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**Asthma**

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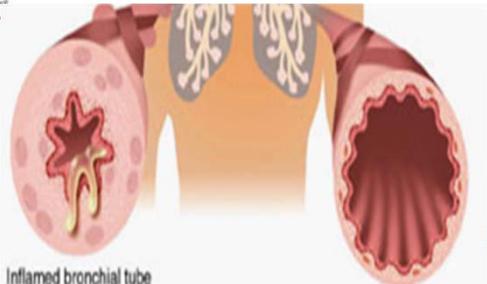
- An inflammation of the lungs that causes the airways to narrow, making it difficult to breath
- Inflammation makes the airways sensitive to allergens, chemical irritants, tobacco smoke, cold air or exercise
- Common allergens include
  - Dust mites
  - Pollen
  - Animal fur
  - Moulds

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**Asthma**

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Inflamed bronchial tube of an asthmatic

Normal bronchial tube

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**NCEF** **Asthma - General Guidelines & Precautions** UNIVERSITY OF LIMERICK

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- Have an awareness of what factors bring on the client's asthma
- Make sure venue is warm & clean
- Ensure client has inhaler with them
- Use upright positions to assist breathing efficiency if required
- Avoid prone positions with abdominal support during active episodes
- Be aware that clients with asthma may have a high level of fitness

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- Used to describe the many disease of the cardio-vascular system
- Prevalent conditions include;
  - Hypertension
  - Arteriosclerosis
  - Atherosclerosis
  - Angina Pectoris
  - Coronary Occlusion
  - Congestive Heart Failure
  - Stroke

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**NCEF** **CHD - General Guidelines & Precautions** UNIVERSITY OF LIMERICK

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- Make sure that the client hasn't eaten within 1 hour of the session
- Be aware that exercise intensity should increase but must be monitored by a healthcare professional
- Ensure client has meds with them
- Avoid overexertion or straining
- Avoid moving too quickly from supine to standing position

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- A metabolic disorder in which the body's ability to produce insulin or its ability to utilise insulin is altered
- Most common types
  - Type 1 – problem producing insulin
  - Type 2 – problem using insulin produced
    - Associated with –Obesity, Sedentary lifestyle and age
    - Can result in adult blindness, kidney failure and amputation

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- Make sure that cuts to the legs don't occur while using Pilates props
- Be aware of;
  - Possible visual impairment
  - Underlying cardio-vascular condition (type 2)
  - Possible destabilising factors
    - Hunger
    - Fatigue
    - Stress
    - Viral infection

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- Becoming more common place
- Most common are hip or knee
- Most healing take place within 1<sup>st</sup> 12 weeks
- Clients should NOT attempt any exercise other than **prescribed** post surgery rehab programme
- Strict adherence to surgical team's rehab programme can offset the need for 2<sup>nd</sup> replacement

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## Joint Replacement - General Guidelines & Precautions

- Ensure client has;
  - Fully completed their post surgery rehab
  - Clearance to return to normal activity
- Avoid extreme ROMs
- Refer specific pains back to healthcare professional
- Include exercises that improve proprioception and balance

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## Joint Replacement - General Guidelines & Precautions

- Hip replacement surgery
  - Avoid combination of hip flexion (over 90°), adduction & internal rotation especially within 1<sup>st</sup> year
  - Do NOT flex hip above 90°
  - Avoid internal rotation
  - Do NOT allow the affected leg to cross the midline
  - When in seated positions the hips should be higher than the knees

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## Joint Replacement - General Guidelines & Precautions

- Knee replacement surgery
  - Avoid extreme flexion
  - Avoid knee rotation/twisting
  - Kneeling activities may be restricted or prohibited

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## Obesity

- The accumulation and storage of excess body fat.
  - >25% in men
  - >30% in women
- A Pilates programme for an obese client should be used in conjunction with a healthy eating plan and aerobic activities

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## Obesity - General Guidelines & Precautions

- Be aware of possible underlying health conditions
- Avoid moving too quickly from supine to standing position
- Consider sidelying, sitting or standing positions to avoid compromising breathing
- Improving pelvic floor muscles reduces stress incontinence
- Include exercises that improve proprioception and balance

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## Older Adult

- Many bodily functions start to decline at a rate of two percent per year after the age of 30.
- With exercise, this aging process is slowed to a rate of one-half percent per year!
- So a person who doesn't exercise will have lost 70% of their functional ability by the age of 90.
- In contrast, a 90 year-old exerciser will have only lost 30% of their functional ability and still be 70% strong.

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- Physiological changes in aging muscles and joints affect mobility and limit locomotion.
- For older adults, flexibility exercise is essential for aging muscles to retain their flexibility and protect them from injury.

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- A well structured Pilates exercise programme
  - Improves balance and mobility and the ability to perform ADLs
  - Helps the older adult to maintain functional independence.
- Older adults’ rate of adaptation will be slower.
- Long-term goals are achieved through slow progression.

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**Older Adult - General Guidelines & Precautions** UNIVERSITY OF LIMERICK

- Be aware of possible underlying health conditions
  - Osteoporsis
  - Osteoarthritis
  - Cardiovascular disease
  - Joint replacement
  - Cancer
- Include exercises that improve proprioception and balance
- Improving pelvic floor muscles reduces stress incontinence

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**Osteoporosis** UNIVERSITY OF LIMERICK

- The gradual and silent loss of bone and *not* a normal aging process.
- It is a systemic skeletal disease with low bone mineral density and structural deterioration giving rise to a high risk of fractures.

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- Osteopenia is mildly reduced bone mass, a loss of approximately 10%-20%, indicating the onset of osteoporosis.
- Pilates for clients with osteoporosis & osteopenia is a highly specialised area.

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**Osteoporosis - General Guidelines & Precautions** UNIVERSITY OF LIMERICK

- Due to the high risk of fracture the following movements are **Contraindicated**
  - Forward flexion, side bending
  - Especially forward flexion combined with rotation
  - Loaded lumbar spine extension I
- The high risk of fracture may outweigh the benefits of Pilates exercise
- A specialised modified Pilates programme must be followed

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**Pregnancy**

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- “Physical activity and reproduction are normal parts of life, and for normal healthy women, combining regular exercise and pregnancy appears to benefit both mother and baby in many ways. Thus, a healthy woman with a normal pregnancy may either continue her regular exercise regimen, or begin a new exercise programme.” **ACSM**

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**Pregnancy - General  
Guidelines &  
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- Any pregnant client looking to take part in a Pilates exercise programme should consult her doctor.
- Avoid supine exercises after 1<sup>st</sup> trimester
- Specialised modified Pilates exercise routines have been developed for pre and post natal clients

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**•Any Questions**

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