

Active Health Scotland

Promoting Wellbeing through Exercise



Specialist Exercise

Incidence

- Multiple Sclerosis
 - 85,000 (West of Scotland highest rate in world)
- Parkinsons
 - 120,000 (10,000 new diagnoses per year)
- Stroke –
 - 250,000 (130,000 new per year)
- Learning Disability
 - 1.5 million
- Cerebral Palsy
 - 1:400 children

Multiple Sclerosis

- Unpredictable neurological condition
- Damage to myelin sheath of nerves
- Stops nerves signals travelling fast
- Affects any part of the CNS
- Different forms –
 - Progressive, relapsing and remitting, terminal

Signs and Symptoms

- Visual disturbance
- Muscle weakness
- Profound lack of energy
- Unsteadiness
- Skin sensitivity
- Pain
- Muscle spasms

Exercise and MS

- No two clients will follow a similar pattern. However the most common symptoms are muscle weakness and spasm.
- Maintain range of movement as much as possible.
- Encouraging clients to use their limbs promotes movement, muscular strength and endurance and prevents the onset of spasms.
- Find correct balance between exercise and rest so that movements promote mobility without aggravating fatigue and other symptoms.
- Regular feedback during and after the session

Exercise and MS

- Mobility
- Postural alignment
- Core strength
- Functional MSE
 - N.b. Often few reps of a mobility exercise is enough to cause fatigue.

Parkinson's Disease

- Onsets in people over the age of 60 years
- Occasionally affects younger adults and middle aged.
- Parkinson's is caused by a defect in the brains metabolism of dopamine
- Affects movement

Signs and Symptoms

- Resting tremor
- Loss of balance (backwards)
- Unstable shuffling walk & difficulty turning
- Slow movements (bradykinesia)
- Inability to manoeuvre around or through objects (e.g. doorways)
- Joint stiffness & muscle cramps (rigidity)
 - especially in the arms, legs and neck

- Individuals usually find that their mobility changes daily
- ‘on-off phenomena’
 - side-effect of the medication.
 - Client completely switches off from reality making it impossible to engage the client in any form of activity.

Aim of Exercise

- Maintain and improve mobility
- Promote relaxation of muscles
- Improve joint range of movement
- Improve balance, posture and coordination
- Enhance ability to move around obstacles



Stroke

- Single most common cause of severe disability.
- Disrupted blood supply to the brain
- Brain cells being damaged or destroyed.
- Caused by blockage (or haemorrhage) of blood vessels to brain.

- Strokes usually affect people of middle age and older but are also known to affect young adults and children. Any part of the brain can be affected. Sometimes the brain makes a full recovery but in many cases the brain cells are destroyed leaving a permanent disability.

Signs and Symptoms

- Loss of sensation
- Muscle weakness
- Paralysis
- Understanding (cognition)
- Coordination
- Slurred speech or difficulty communicating

- Unilateral symptoms
 - Loss of sensation, muscle weakness and paralysis often affect just one side of the body e.g. one limp arm, drooping eyelid etc...
- Variety of symptoms
 - Depends on which area of the brain has been damaged e.g. memory, speech, muscles etc...

Aim of exercise

- Sensation
- Muscular strength & endurance
- Coordination
- In particular hand grip strength, upper limb range of movement and lower limb range of movement



- Remember flexibility
 - Loss of power in the limbs prevents movement which can lead to the joint remaining in the same position for long durations leading to muscular contractures and joint deformity.

Learning Disability

- A negative effect on the way an individual deals with everyday issues including learning, communicating, concentrating and coordinating.
- Very mild to severe
- Problem before or during birth and sometimes by illness and accidents in early childhood.

Signs and Symptoms

May have both mental and physical signs –

- Balance (Ataxia)
- Coordination
- Attention span
- Social interaction
- Understanding (Cognition)

- Some conditions associated with learning disability also carry an increased risk of cardiovascular disease (e.g. Downs Syndrome) and an association with mental health problems (e.g. schizophrenia, depression)

Aim of exercise

Many other potential symptoms (e.g. speech, swallowing etc) however the main aim of the physical activity session is to concentrate on these three main areas –

- balance
- coordination
- understanding

- Team work
 - encourages social interaction and vary the exercises frequently.
- Short sessions
 - (20-40 mins) are more effective than longer sessions.
- Reinforcement
 - Return to certain activities throughout session to promote understanding



Cerebral Palsy

- Affects movement and posture.
- Damage to a particular part of the brain during pregnancy, birth or early childhood.
- Additional damage can sometimes lead to problems with sight, speech, cognition etc...
- Mild to severe

Three types of CP

- **Spasticity**
 - tight muscles, stiff and jerky movements. Difficulties with regular movements such as changing body position or holding objects (70-80%).
- **Athetosis**
 - frequent involuntary movements. Mixture of muscle tone which is too tight and too loose (*hypotonia*) leading to difficulties with upright posture and walking (10-20%)
- **Ataxia**
 - poor balance and coordination. Usually muscle tone is very lowunsteady and shaky (5-10%).

Signs and Symptoms

- **Upper body spasticity**
 - uncontrollable tight grip on objects, distorted posture, stiff and jerky arm movements
- **Lower body spasticity**
 - walking difficulties, wheelchair use, stiff and jerky movements
- **Facial muscles**
 - distorted facial expressions and speech difficulties
- **Coordination**
 - slower ability to coordinate motor skills

Aim of exercise

- Promote ROM around affected joints
 - improving flexibility and relaxation of tight muscles
- Improve joint deformities
 - Work with antagonistic muscles e.g. clients with bicep spasms should perform exercises which enhance the tricep muscle to encourage natural alignment of the elbow joint
- Enhance motor skills by performing coordination exercises



Falls Prevention

- 33-50% of people over the age of 65 suffer a fall each year.
 - 20% need medical help
 - 10% sustain a fracture
 - 90% of hip fractures are caused by a fall
 - 40% of hip fractures die within 6 months
 - 25% of hospital admissions die within 1 year
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- Fortunately, 50% of falls are preventable.

What causes falls?

- **A previous fall**
 - reduced activity and fear leads to further weakness
- **Medications**
 - Many common drugs cause dizziness and loss of balance
 - E.g. antidepressants, diuretics
- **Poor balance and impaired gait**
 - Unsteadiness walking, sit to stand and balancing

- **Effects of illness**
 - Parkinson's disease, stroke, Alzheimers, low blood pressure, diabetes etc.. Osteoporosis!!!
- **Poor vision**
 - Inability to see obstacles
- **Environmental hazards**
 - Most falls occur in the home
 - E.g. flexes, rugs/mats, poor lighting, paving, kerbs etc...

Consequences

- **Physical**

- discomfort and pain, serious injury
- inability to look after oneself, long term disability

Social

- loss of independence, loss of social contacts
- loss of home, move to residential care
- financial costs of help/care/hospital
- decreased quality of life
- changes to daily routine

Psychological

- loss of confidence
- loss of independence
- fear
- distress
- guilt
- blame
- anxiety
- embarrassment

Aim of Exercise

- Balance****
- Functional strength and endurance
- Stand to sit ability
- Gait – enhance walking technique
- Bone density



Other tips

- maintain healthy feet
- regularly review your medication
- have regular eyesight tests
- pay attention to home safety
- enjoy a healthy diet and reduce the risk of osteoporosis

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Q & A