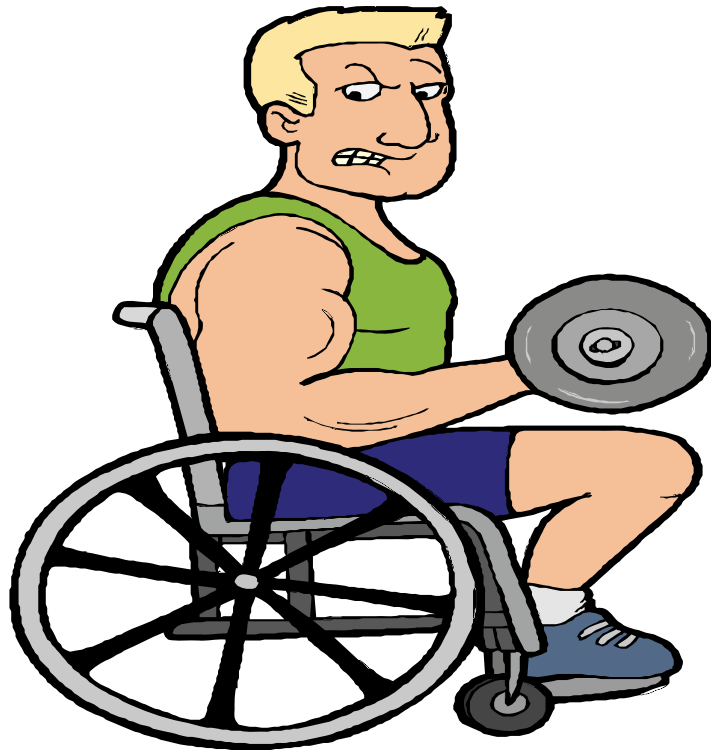


**AN EXAMPLE OF A TRAINING MANUAL FOR
ADAPTED EXERCISES/WEIGHT TRAINING**



APRIL 2006

By

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With Acknowledgement to

Kelly Duggan (Clerical Services)

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INTRODUCTION

For many years people who suffer with a Learning disability/ Mental Health have not been considered or given the opportunity to access any form of fitness training, as many people never considered that a person with a disability/mental health would benefit from any type of exercise.

It was discovered that people in this client group over many years of research, did benefit by partaking in fitness training and therefore should be given the opportunity and choice to actively take part in fitness training using different forms of exercise.

One area that was hard to access because of many restrictions was a gym/weight training facility by the way they were built, type of equipment used, lack of disabled access and the stigma of a disabled person being accepted within this type of environment. Thanks to a lot of research and media coverage of disabled sport it was realised that these facilities had to be accessible to everyone no matter how able or disabled that person may be, so over many years and pressure from different agencies things started to improve because of the change in discrimination laws regarding disabilities and sport.

The other big factor was that this being a multi million pound industry facilities were made accessible and equipment suppliers redesigned there products so that people with low or no mobility could be accommodated and benefit from using equipment which could be adapted to fit peoples needs. The benefits of exercise have proven to be a fantastic way of improving physiological and psychological well being, as well as giving the person with a disability the opportunity to integrate and socialise with people from all walks of life.

With regards of being able to access and introduce a new type of exercise that would benefit people with a disability, it became clear that some form of formal training should be taken, in order that correct safe training could be prescribed.

In 2001 I was able to access a formal training course through the English Sports Association for People with a Learning Disability at Leeds University, which was governed by the British Weight Lifting Association and on completion I gained a weight training Leaders qualification (Disabilities). The practical side of the course training was on how to do weight training exercises, using fixed and free weights in a correct and safe manner. It also included how the exercise could be adapted for people with a disability whether mobile or wheelchair bound. Over the years since doing the course I have been able to introduce more people into a gym setting and I have also included care staff on short training seminars.

The outcome of being able to teach people with a learning disability has been tremendous and one of the reasons for producing this small brochure is to try to help and give other professionals the chance to gain knowledge on how exercises can be adapted.

David Johnston
Physiotherapy Technical Instructor
April 2006

SAFETY RULES

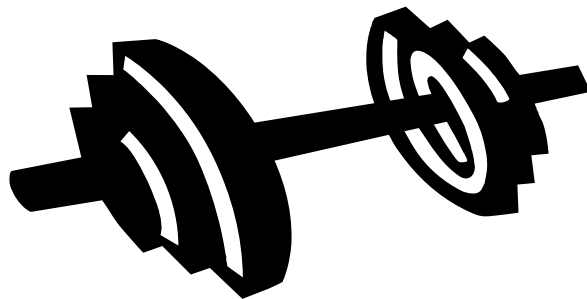
DUTY OF CARE

- HEALTH CHECK- PRESENT AND PAST.
- MEDICAL BACKGROUND (SEE MEDICAL CONDITIONS).
- ANY INJURIES

SAFETY IN THE GYM

- CORRECT FOOTWEAR AND CLOTHING TO BE WORN.
- CHECK AND USE CORRECT EXERCISE PLAN.
- USE CORRECT STARTING POSITION.
- DEMONSTRATE EXERCISE.
- GOOD LIGHTING.
- GOOD VENTILATION/ HUMIDITY.
- AVAILABLE FLUIDS.
- AVAILABLE SEATING.
- EQUIPMENT STORED AWAY AFTER USE/ CLEAR FLOOR.
- ADEQUATE SUPERVISION.
- REGULAR EQUIPMENT CHECKS.
- NO EATING IN THE GYM.
- NO FIZZY DRINKS.

ANY PARTICIPANT EXHIBITING BEHAVIOURS WHICH COULD ENDANGER THEM OR OTHERS MUST BE ESCORTED OUT OF THE GYM.

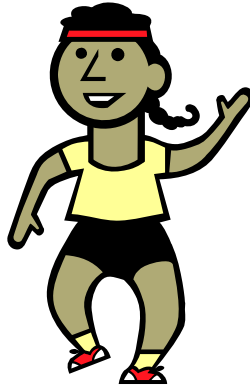


MEDICAL CONDITIONS REQUIRING SPECIAL CONSIDERATION

Medical Condition	Action
Atlanto-Axial Instability	People with Downs Syndrome need to be screened for it.
Heart Conditions	Check with GP if exercises are allowed liaise with Physio.
Chest Conditions	As Above
Fractures	Exercise not to be undertaken.
Inflammatory Conditions (EG:Rheumatoid Arthritis)	Check with G.P.
D.V.T	Liaise with Physio when condition has improved.
Unstable Joints	Check with G.P. – liaise with Physio.
Recent Injury	As above.
Past Physical Injury (EG: Back Injury)	Liaise with Physio.
Physical Conditions (E.G.: C.P/Osteoporosis?Dyspraxia)	Liaise with Physio.
Diabetes	Check with G.P. – liaise with Physio.
Severe Challenging Behaviour	Joint risk assessment with Nursing staff.
Cancer	Check with G.P. – liaise with Physio.
Detached Retina/Spinal Rods	Use of gym Contra Indicated.

RATIONALE BEHIND THE USE OF EXERCISE FOR MENTAL AND PHYSICAL HEALTH

There is a general consensus of the health benefits associated with exercise.
It has both physiological and psychological benefits.



Physiological benefits are:

- Increased Cardio respiratory / Cardiovascular function.
- Increased circulation.
- Increased muscle strength / tone.
- Improved metabolism.
- Increased resistance to illness and general feeling of well being.
- Increased independence.
- Better joint movement.
- Improved posture.
- Assists to prevent osteoporosis.

Psychological benefits are:

- Based on available evidence to support the use of exercise in the improvement of mental health both in the short and long term.
- The positive effect on certain biochemical's that affect our mood and how we feel.
- Raised levels of noradrenalin and serotonin in the brain – this has an anti-depressant effect.
- Raised plasma endorphin levels are part of the response of the body to physical stress like exercise. Endorphins have analgesic and euphoric effects. Exercise can reduce the immediate physiological response to stress.
- A sense of achievement that improves self esteem and promotes a more positive body image.
- A distraction from anxieties or thoughts as physical activity requires the response of body and mind.

WARM UP SCHEDULE

- STIMULATES HEART AND LUNGS.
- GENTLY INCREASES BLOOD FLOW.
- GRADUALLY RAISES BODY AND MUSCLE TEMPERATURE.
- HELPS TO STRETCH, MUSCLE/ LIGAMENTS AND CONNECTIVE TISSUE, TO PREVENT JOINT AND MUSCLE INJURY.
- INCREASES THE METABOLISM OF SKELETAL MUSCLES.
- HELPS TO PREPARE THE CLIENT PSYCHOLOGICALLY.

SUGGESTED WARM UPS.

- EXERCISE BIKE
- MARCHING ON THE SPOT.
- IF POSSIBLE MOBILISATION OF JOINTS AND STRETCHING OF MUSCLES.



WARM DOWN SCHEDULE

- GRADUAL SLOW DOWN IN EXERCISE TO RETURN BODY TO RESTING STATE.
- ASSISTS IN RETURNING BLOOD TO HEART FROM MUSCLE.
- REDUCE LEVEL OF LACTIC ACID.

SUGGESTED WARM DOWN

- STRETCHING EXERCISES.
- WALKING.

GUIDELINES FOR THE USE OF EXERCISE

- First decide the aim of the exercises as it can be used for:
 - Mental Health.
 - Physical Health.
 - Combination of both.
- Choose an activity which the participant enjoys and fits in with the aims.
- Check medical background.
- Always build up the length of time spent exercising slowly.
- Make it enjoyable.

Training Zone.

- $220 - \text{Age} = \text{Maximum Training Zone}$.
- Take resting pulse, then after 5 minutes warm up exercise (Exercise bike / Marching on the spot, exactly) then after 5 minutes rest take it again.
- After 5 minutes exercise the pulse should be reaching 60% of maximum heart rate and after 5 minutes rest it should return to resting pulse.
- If the heart rate is higher than this start on a very gentle exercise programme until basic fitness is reached.
- The long term aim is to work between 60% and 80% of the maximum heart rate.
- Warm up exercises to be used before main exercise programme (Where possible).
- Warm down exercises to be used at the end of programme (Where possible).



- Remember a number of muscles work in pairs: e.g. Biceps/ Triceps – Quadriceps/Hamstrings and each need to be exercised, as emphasis on one can lead to injury.

Heart Rate Training Zones

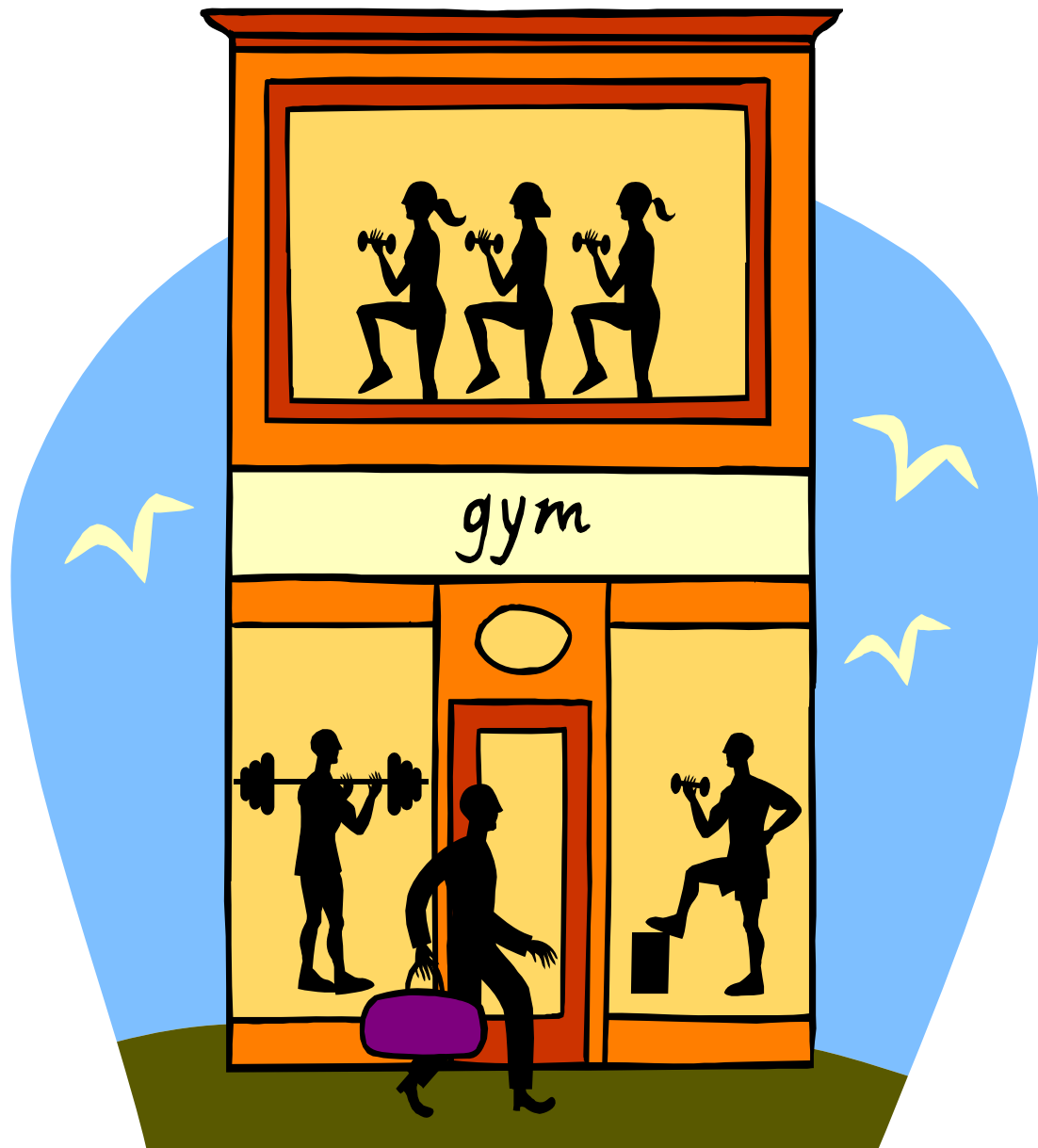


COLOUR CODE OF THE EXERCISE MANUAL

+ EXERCISE ACTION: START TO FINISH.

+ EXERCISE ADAPTIONS.

+ IMPORTANT INFORMATION.



TREADMILL

Prime Movers

Cardio-Vascular, Deltoids, Biceps, Pectorals, Abdominals, Quadriceps, Gastrocnemius, Soleus, Hamstrings and Gluteus Maximus.

This exercise should only be done if the participant has good mobility, balance and co ordination. Alternatively taking the participant for a walk achieves the same outcome.

<u>Start</u>
1. Insert Magnetic Key
2. Select = Program
3. Select = Level.
4. Select = Time.
5. Select = Speed.
6. Press Start

<u>Speed Selection Walking</u>	
Slow Pace	2
Medium Pace	3
Fast Pace	4

<u>Jogging</u>	
Slow Jog	5
Medium Jog	6
Fast Jog	7

Above level 7 is for high level workout.

Exercise Action

- Adopt a standing position on the treadmill.
- Start machine moving legs in a walking motion (heel to toe movement).
- Straight back looking forward.

To increase intensity level you can do this by increasing the incline level.

EXERCISE BIKE

Prime Movers: - Develop Cardio-Vascular, Quadriceps, Hamstrings, Gastrocnemius, Soleus, Gluteus Maximus.

This exercise should only be done if the participant is mobile and has good coordination, as it is not an adaptable exercise. An alternative is the sit to stand exercise.

To start

- Raise the seat to the height of the top of the hip.
- Sit in an upright position with feet on the pedals and holding the handle bars.
- Set intensity, time and programme.

Exercise Action

- Start pedalling keeping to a constant speed.
- Increase intensity rather than pedalling fast.



ROWING MACHINE

Prime Movers: - Develop Cardio-Vascular, Trapezius, Biceps, Triceps, Pectoralis, Hamstrings, Gastrocnemius.

This exercise should only be done if the participant is mobile and has good co ordination.

To Start

- Sit on the seat, placing feet in the footplates securing with the straps.
- Take hold of the pulley with a pronated grip.
- Place the pulley in the participant's hands.

Exercise Action

- Pull the pulley towards the body on a horizontal plane.
- Extending the legs and flexing the elbows until the pulley bar reaches the chest.
- Extend the arms and when the hands pass the knees flex the knees drawing the body forward, returning to the starting position.

To Finish

- Return the pulley to starting position.
- Take the pulley from the participant and return to starting position.
- Release feet from the straps and remove from the footplates.



ABDOMINAL RAISE (SIT UPS)

Prime movers: - Rectus Abdominis

Body Position and Grip

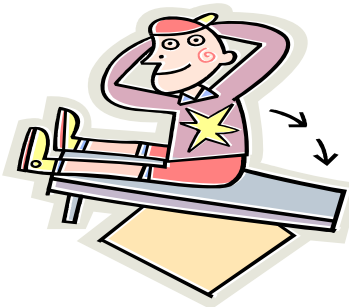
- Lie on the floor placing the head squarely on the head rest.
- Place the elbows on the elbow rest and the hands gripping the upper bar.
- Knees bent with the feet flat on the floor.

Exercise Action

- Raise the upper body/torso bending at the hips until the shoulder blades are off the floor (4 to 6 inches approximately).
- Throughout the exercise the back, neck and head should be in alignment.
- Lower the bar to starting position (do not allow the shoulders to touch the floor) and repeat.

To Finish

- Return to a lying position.



The participant can be assisted by kneeling in front with your knees holding the feet together. Lean forward so the participants knees are in your abdomen area, at the same time taking hold of the upper bar on the outside of the participants grip. Encourage the participant to do the raise and assist them to return to the starting position in a controlled manner.

PEC DECK

Prime Movers: - Pectoralis Major, Deltoids.

Body Position

- Sit on the bench with knees bent and feet flat on the floor.
- Take hold of the hand grips, keeping arms at a 90 % angle.

Exercise action

- Pull the hand grips from a lateral to a medial position in a controlled manner.
- Return to starting position and repeat.

If the participant is able to transfer from wheelchair to bench give assistance if required.

You can assist the participant to carryout the exercise in the correct manner by sitting in front or behind them.

Front sitting: - Mirror the position the participant has taken up, placing your lower leg on the outside of the participants holding them in the correct position.

Front sitting: - Assistance can be given by placing your hands over the participants, encouraging them to pull to medial position and helping them to return to starting position under control.

Behind Sitting: - Mirror the position the participant has taken up, placing your lower leg on the outside of the participants holding them in the correct position and at the same time use your upper body to hold the participants back straight.

Behind sitting: - Mirror the position of the participant placing your forearms on the outside, encouraging them to pull to medial position and helping them to return to starting position under control.

BENCH PRESS

Prime Movers: - Pectoralis Major, Anterior Deltoid, Triceps.

Body Position

- Lie on the bench face up with the bar in line with the mid- chest.
- Head, shoulders and buttocks in contact with the bench and feet flat on the floor.
- Ensure there is no excessive hyper- extension of the lumbar spine (use blocks under the feet if necessary).

Grip

- Take an underhand grip on the bar one and a half to two times shoulder width apart.
- Forearms vertical with elbows pointing towards the floor and knuckles facing upwards.

Exercise Action

- Press the bar up to arms length avoiding hyper- extension.
- Lower the bar slowly under control, keeping the wrists in line with the elbows.

If the participant is able transfer from wheelchair to bench give assistance if required.

Assistance can be given by guiding the bar in upward motion and helping to take the weight on the downward motion, avoiding the weight being dropped suddenly.

LAT PULL DOWNS

Prime Movers: - Latissimus Dorsi.

Body Position

- Sit on the bench with knees bent, feet flat on the floor and keeping a straight back.
- Take hold of the bar with both hands, with a grip slightly wider than the shoulders.

Exercise Action

- Draw the bar down to a starting position with the arms extended, but not locked out.
- Pull the bar down to the mid chest line.
- Return to the starting position in a controlled manner and repeat.

If the participant is able to transfer from wheelchair to bench give assistance if required.

You can assist the participant to carryout the exercise in the correct manner by sitting in front or behind them.

Front sitting: - Mirror the position the participant has taken up, placing your lower leg on the outside of the participants holding them in the correct position.

Front sitting: - Assistance can be given by taking hold of the bar inside the participants grip, encouraging them to pull the bar down and helping them to return to the starting position under control.

Behind sitting: - Mirror the position the participant has taken up, placing your lower leg on the outside of the participants holding them in the correct position and at the same time use your upper body to hold the participants back straight.

Behind Sitting: - Mirror the position of the participant placing your arms over the top of theirs and placing your hands on top of theirs. Encourage them to pull the bar down and help them return the bar to the starting position under control.

FREE WEIGHTS

It is the responsibility of the person using any free weights to ensure that on completion of exercise the weights are returned and stored in the appropriate racks safely.

At no time are any free weights to be left lying around on the floor creating a hazard.

By following this advice you are complying with the Gym Safety/ Good Practice Guidelines.

THANK YOU

DUMBBELL FRONT RAISE

Prime Movers: -Anterior Deltoid

To Start

- Dead lift the weights from the floor.
- Hand weights to the participant.

Body Position and Grip

- Pronated grip.
- Feet slightly more than hip width apart, knees soft.
- Abdominals tight and back flat.
- Dumbbells at front of thighs, arms extended.

Exercise Action

- Raise the dumbbell in front of the body to shoulder height.
- Maintain firm wrists, with the elbows slightly bent.
- Lower back to starting position and under control.

To Finish

- Dead lift the weights back to the floor.
- Take weights from the participant.

This exercise can be done sitting on a chair or when sitting in a wheelchair. The participant can be given assistance if needed by placing your hand underneath their hand and guiding them through the required exercise action.

DUMBBELL LATERAL RAISE

Prime Movers: - Medial Deltoid

To start

- Dead lift the weights from the floor.
- **Hand weights to the participant.**

Body Position and Grip

- Pronated grip
- Feet slightly more than hip width apart, knees soft.
- Abdominals tight and back flat/ straight.
- Place the dumbbells to the side of the thighs.

Exercise Action

- Raise the dumbbells to the side to shoulder height.
- Keep the elbows slightly bent.
- Tilt the wrists inwards slightly, maintaining a firm grip.
- Lower back to the starting position under control.

To Finish

- Dead lift the weights back to the floor.
- **Take weights from the participant.**

This exercise can be done sitting on a chair or when sitting in a wheelchair. The participant can be given assistance if needed by placing your hand underneath their hand and guiding them through the required exercise action.

ALTERNATIVE SEATED DUMBBELL SHOULDER PRESS

Prime Movers: - Trapezius, Deltoids and Triceps.

To Start

- Dead lift the weights.
- **Hand weights to the participant.**

Body Position

- Sit on the bench, dumbbells resting on thighs, back straight.
- Feet flat on floor, shoulder width apart.

Exercise Action

- Using pronated grip, raise the dumbbell to shoulder height.
- Press dumbbell directly upwards until arms are fully extended but not locked out.
- Maintain firm wrists and flat back throughout.
- Lower dumbbells to starting position slowly.
- Smooth continuous action.

To Finish

- Lower dumbbell to the thigh.
- **Take weights from the participant.**

This exercise can be done sitting on a chair or when sitting in a wheelchair. The participant can be given assistance if needed by placing your hand underneath their elbow and guiding their arm through the required exercise action.

SINGLE ARM TRICEP EXTENSION (DUMBBELL)

Prime Movers: - Triceps

To Start

- Dead lift the weights.
- Hand weights to the participant.

Body Position and Grip

- Extend the weight above the head, palms inward.
- Elbows pointing upwards and upper arms close to the ear.
- Head up and facing forward.
- Feet slightly more than hip width apart, knees soft.

Exercise Action

- Slowly lower the weight behind the head to the top of the shoulder.
- Keep the elbows pointing up and upper arm close to the ear.
- Use opposite arm to help stabilize shoulder joint.
- Maintain a firm wrist.
- Push weight back to starting position without hyper- extending the elbow.

To Finish

- Lower weight to the side of body.
- Dead lift back to the floor.
- Take weights from the participant.

This exercise can be done sitting in a chair or when sitting in a wheelchair. The participant can be given assistance by placing your hand below the elbow holding lower arm in extension. Use other hand to guide the participant through the exercise action.

SINGLE ARM BICEP CURL (DUMBBELL)

Prime Movers: - Bicep.

To Start

- Dead lift the weights.
- Hand weights to the participant.

Body position

- In a seated position making sure the back is straight.
- Feet flat on the floor, hip width apart.
- Hold the weight in a supinated grip, resting the weight on the knee.

Exercise action

- Bending from the elbow raising the weight to shoulder height.
- Return the weight to starting position in a controlled manner.
- Keep the elbow close to the body and maintain a firm wrist.

To Finish

- Lower weight back to the knee.
- Dead lift back to the floor.
- Take weights from the participant.

This exercise can be done sitting in a wheelchair.

The participant can be given assistance by placing your hand below the participants guiding them through the lifting and lowering action.

This can also be done by placing one hand at knee level and the other hand at shoulder level encouraging the participant to carryout the exercise action.

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