

**General PE Advice and Information for Students who have Muscular Dystrophy and other degenerative Neuromuscular conditions.**

**Information at Student’s level**

* **Everybody’s Different, Nobody’s Perfect (aimed at 4-10 yrs)**

<http://www.muscular-dystrophy.org/assets/0000/7830/Everybody_different.pdf>

* **DMD – On the Ball (**aimed at 11-14 year old boys with Duchenne muscular dystrophy)

<http://www.muscular-dystrophy.org/assets/0000/7826/On_the_ball.pdf>

**General advice and information**

All students with MD will have a physiotherapist and it will be important that each individual student is discussed with their own physio/OT. The following advice and information is designed to be a guide for use in schools. The best inclusive PE practice comes when there is an open dialogue between the student / teacher and his peers- quite often classes can come up with very clever ways of overcoming difficulties and ensuring the student with MD is included. Don’t forget to empower the whole class and help develop their problem solving skills.

Special attention should be given to stretching tight muscles to prevent contractures. The primary objective is preventing hip flexion contractures.

Specific advice and information with relation to stretches can be found here or from the student’s physiotherapist.

<http://www.muscular-dystrophy.org/assets/0001/1477/Physio_booklet_web.pdf>

Some studies have even indicated a harmful effect of too much exercise designed to strengthen

muscles. As a consequence, you should ensure that their exercise program

does not demand too much muscular exertion and should always avoid overwork weakness.

**Encourage activities involving:**

• bilateral movements (e.g. both sides of the body do the same action)

• elbow extension

• wrist extension

• forearm supination (palms turned toward the front of the body)

Be aware of fatigue and watch for patterns over the week- are they more tired the day after PE?

You can however make some simple adaptations to allow the student to have fun and be included.

Warm-up/Cool-down- critical component to prepare weakened muscle for activity.

Facilitate strength, flexibility, and maintaining function.

Prednisone is the steroid most widely used to treat Duchenne muscular dystrophy. It slows muscle loss and dramatically improves strength for most boys. On the other hand, it can cause irritability

and some psychological side effects, which may affect a student’s behaviour and academic performance. Their appearance can be altered as well, including weight gain and facial changes. Psychological side effects include difficulty concentrating, sleeping, and controlling emotions. There’s also a chance that impairment in thinking, reading, and coping skills can lead to depression or aggression.

**Sports Activities**

**ROUNDERS/ TENNIS**



* Use soft, lightweight balls for safety
* Use light weight bat- look for rackets that have larger heads
* Hit off a tee or hit ball off lap/tray

<http://www.daviessports.co.uk/product/Up-Rite-Safe-Tee-PCSE16848>

<http://www.bishopsport.co.uk/product.asp?strParents=0,1010&CAT_ID=1013&P_ID=5497>

* Use a catapult or tennis ball launcher to put the ball in play



* Using foam ball practice hitting ball at target marked on the floor
* Hit suspended ball (on string)
* To overcome weakness in shoulder movements, advise MD students

to hold the bat with one hand and swing their [wheelchair](http://www.mda.org.au/Information/Recreation.asp) around.

The force of the swing to hit the ball will come from the wheelchair

momentum, not the strength of their arm. To make it possible for him to reach first base rule that the ball must be thrown to 2 people before it reaches first

base.

* Use a lighter bat or possibly a tennis racquet with a greater surface

area.

* Muscle weakness may prevent the pupil from swinging the bat –

 get the bowler to throw at the face of the racquet.

**Badminton**

• Use balloons, foam balls

• Use shorter, lighter rackets with larger heads

• Reduce size of court and lower net

• Use various targets on floor with or without net

• Velcro the top end of the racket frame and the Shuttlecock for easy retrieval

**Basketball**

* Use basket on floor or at a height for success- this can be simply a large bucket or more specialist frame

<http://www.daviessports.co.uk/product/Floor-Basketball-SCSP00013>

* Use either a larger, lighter ball or a very small, lightweight ball (ping pong ball, tennis ball, or wadded paper ball, etc.)

**Bowling**

* Use bowling ramp, large tumbling wedge with light weight ball, or mini ball

<http://www.daviessports.co.uk/product/Davies-Sports-Fun-Boccia-Ramp-SCSD73151>

* A ramp, can simply be made by cutting plastic guttering pipe in half.
* There are specialist bowling equipment which allows the student to swing a ball on a frame to knock down the skittle – these cost @£45.

<http://www.daviessports.co.uk/product/Pendulum-Bowler-Frame--Ball-SCSP01783>

**Football**

* Use nerf® or any light weight football

<http://www.daviessports.co.uk/product/Wheelchair-Football-330mm-SCSP00089>

* Throw for accuracy or distance
* Play “Table Top Football”
* Allow students to shoot ball toward goal (throw ball, use ramp, push off of lap , hit off tee)
* In wheelchair, can dribble the ball forward using footrests or with feet (with footrests removed)
* Construct “box bumpers” for wheelchairs to keep balls out from under the chair
* If physically possible, allow student to do throw-ins and be an integral part of the game

**Table Top Cricket**

<http://www.lordstaverners.org/table-cricket>

The Lords Taverner’s have invented a table top version of cricket to ensure students with complex physical needs can still enjoy cricket.

<http://www.daviessports.co.uk/product/Davies-Sports-Mini-Table-Top-Cricket-Set-SCSD73187>

**Boccia**

<http://www.daviessports.co.uk/product/Fun-Boccia-Set-PCSD81573>

1. Pupils must determine whether they are going to throw or become a ramp player.

2. Pupils need to practice various throwing and rolling techniques to determine which is best for them.

3. Players may need a longer time to deliver the ball if they have difficulty in grasping or releasing the ball.

4. Some players may need a rest on which to place their elbow in order to steady their throw.

**Volleyball**

* Use lighter and softer balls (volleytrainer, beachball, balloon etc.)
* Reduce size of court and lower the net
* Allow student to hit ball held by peer or hit ball off tray; then have peer pick up ball and pass to other teammates
* Allow student to be close to net for play (for serve and hitting over the net)
* Play “Sit-Down” volleyball

**Kite Flying**

* Secure kite string to wheelchair, if student is unable to hold onto kite
* A good cooperative sport for small groups of students.

**Catapult**

• Use for launching tennis balls to buckets/ bins or have a peer catch the tennis balls in a dip net

• Launch beanbags to floor noughts and crosses/ target

• Launch beanbags to knock down bowling pins or stacked plastic cups

**Marbles**

* Have students play various marble games at a table
* Build marble run’s

**Wii / X box Kinect**

The Kinect in particular requires very little movements and these can be picked up when sitting down. If you require more help and advice with games systems contact Peter Rollinson at SERC 0208 503 8773.

**Dancing**

* Substitute leg movements for arm movements whenever possible
* Slow down music
* Allow peers to push wheelchair and/or assist students with movements when appropriate
* Student to DJ when tired

**Hockey**

1. If the pupil has poor grasping skills attach the stick to the wheelchair, either at the side or in the middle between the feet.
2. The hand with which the pupil drives the chair is their best and strongest one.
3. Pupils may lack physical strength but they can help you to adapt the equipment to suit their needs – ask them!
4. Hockey sticks needs to be light in weight and flatter and longer than the average stick i.e. like an ice hockey goal keeper’s stick.
5. Balls may need to be bigger and brighter – easier for control.
6. Rules may need to be simpler and shorter.
7. Playing area may need to be smaller at the start until the pupil is able to get control of the ball and stick

**Frisbee**

* Use adaptive equipment, use foam/ material versions if required
* Throw and catch with partner
* Throw for accuracy and distance
* Play frisbee golf

**Horseshoes**

• Use rubber indoor set or other light weight type

• Use jar rings or embroidery hoops and toss at bottles or plastic bowling pins

• Toss playing cards into bucket or small circle on table or floor

**Target/Toss Games**

* Check current physical education equipment catalogs for these games (foam dice game, toss-um, jarts, Velcro darts, etc.)

<http://www.specialdirect.com/shops/sd/Products/PD1724376/Foam-Quoits/?rguid=f30eea88-5252-44f4-aed0-2b6e00a7322b>

* Cloth covered balloon ball

 <http://www.bishopsport.co.uk/product.asp?strParents=0,1010&CAT_ID=1013&P_ID=3772>

* Place targets on floor, if student unable to toss at wall targets
* Choose age appropriate games
* Use safety “suction” darts and throw or drop to floor targets
* Foam Croquet set

 <http://www.daviessports.co.uk/product/Spordas-Super-Foam-Croquet-Set-PGGG72488>

* Use paper airplane, frisbee, aerobie, nerf® football, kooshball, or any age appropriate lightweight projectile

**Remote Control Car**

* Races for time or against peer with another car
* Obstacle courses for time (around courses constructed by peers, around objects, knock down pins, etc.)

**Stop Watch Activities**

**Golf**

For a higher functioning MD student position him forward in a wheelchair to make access to hitting the ball possible. Support his arms to make shoulder movement easier or him, and if necessary allow him to use lightweight hockey stick. For a lower functioning student limit golf to putting only. Use the practice green at the beginning of the golf course or put the ball at the edge of each putting green and score the amount of hits it takes him to get the ball into the hole (so he does not have to drive it down the range).

**Orienteering**

This is a great sport for MD students to be involved in because it does not require much modification. Because of this MD students are made to feel a part of the group and can compete against the other students on the same level

Prepare well. Organise the course so that a wheelchair can get around it. Have simple codes at each checkpoint that can be copied by the MD student.

Have students go out in pairs. This is safer for all the students but particularly for the MD student. Encourage the MD student's partner to allow him to do as much as possible. A compass can be fixed to the arm of his wheelchair with a suction cap or some blue tac. The map can be laid flat and stuck to his table that fits into his wheelchair.

**Teaching Umpire Skills**

It is understood that modifying games may take away a sense of competition for the other students. Therefore games will need to be played without the MD student being physically involved. However when this occurs engage him in other ways. Encourage him to know the rules well and become a good umpire. Take time to teach the MD student the rules of each sport. This can be done whilst explaining the rules to the other students. Give them a set of rules and go through these with the student to make sure he understands.

Video replays of the television coverage of sports is another way of teaching sporting skills to students and umpiring skills to the MD student. Student's learn by example so while the MD student is learning what is required to be a good umpire, his classmates are learning specific skills such as footwork and racket swing. Umpire with the MD student until he is confident. Give encouragement and praise. An alarm (for example, a self defence alarm) may need to be used if the MD student cannot use a whistle comfortably as he may find it difficult to continually bring it up to his mouth.

The student with Duchenne can also act as ‘helper’ in a variety of activities, such as freeze tag, where he can be the ‘unfreezer.’Keeping score, refereeing, serving as announcer, and other

non-physical roles are other ways for the student to participate. Make sure that ground rules for his authority are in place if he is a referee. Be sure that he feels included, not isolated, in his

role, whatever it may be.

**Warm U Activities**

If it is not possible for the MD student to participate in the whole PE session, it is important for him to be involved for a short time in pre-game activities. Therefore a few activities that specifically involve the MD student and help teach skills to the other students has been suggested. However, these are only examples of how activities can be modified.

**1. Beanbag Hockey**

This game should be played indoors on a wooden court. Divide the group into 2 teams and give each student a number. Use rolled up newspaper for 3 hockeysticks, a beanbag, and 2 chairs for goals. Place the beanbag and 2 hockeysticks in the middle of the chairs and then call a number. The people from each team with that number run to the middle and aim to score a goal for their team by hitting the beanbag under their chair.

Allow the MD student to hold a hockeystick so that he doesn't have to reach down and pick one up when his number is called.

**2. Balloon Volleyball**

This game should be played indoors on a wooden volleyball court. Divide the group into 2 teams and have each team stand down their side line except 1 player who stands in the centre of the court with a badminton racket. Play starts when 1 player hits a balloon over the net. After playing he runs to the end of the line and the person at the beginning of the line runs on to the court to play next. Meanwhile the player of the side must try to hit the balloon back over the net. If that player does not get if over the next person in line tries. The side has 3 chances to hit the balloon over. Play continues until one side scores 11 points

**3. Obstacle Course**

An obstacle course can be set up by using witches hats, chairs, gym mats, landmarks and anything else in the sports store room. Two similar courses can be set up and the class can be divided into two teams. The MD student can be one team and an able-bodied student in a manual wheelchair on the other team. using this method, the competition between the teams will be equal. All the players on each team must complete the obstacle course. The team that finishes first is the winner. Contact Newbridge Outreach team if you would like to borrow a wheelchair for this purpose.

The obstacle course van be modified to teach a number of different skills. An example is to hit a ball with a hockey stick or kick a soccer ball around the course.

**Safety Issues.**

Some games could possibly be modified for the MD student, but because he is in a wheelchair it would be dangerous to have him on the field competing against other students for the ball.

Therefore safety of the other children must be considered.
Safety of the MD student is also important.

Remember that :

* *Balance is easily lost.*
* *Fatigue is a serious hazard. Only moderate exercise should be done.*
* *No strain should be exerted.*
* *Strength exercises are contraindicated.*
* *Consultation with the student's physio or parents is recommended to ensure that activities and planned modifications will have no adverse effects.*

*Although safety of the MD student is essential, it does not mean that he should be over protected. All MD students are likely to fall at some stage but unlike other individuals they may not recover quickly.*

**Further Guidelines for Teachers**

As integration into normal sport for the MD students is relatively new, you will need to discover their interest and work with them to make participation appealing and accepting. Praise and encouragement are essential in motivating them to be involved.

It is important to have an understanding of which muscle groups are more severely affected and which movements are possible. This allows you to concentrate on what they can do rather than on what they cannot. Through this, their abilities will be strengthened and realistic goals will be obtained.

Do not underestimate what they can do.

Motivate the MD student to participate as much as possible. When the other students go for a jog around the oval or run a cross country event, encourage the MD student to drive around in his wheelchair with them.

Put some thought into how you can modify further sporting activities to allow even some types of participation of the MD student with the group. This is important because as his peers are expanding their experiences and skills in sport, he is progressively becoming limited in his movement and therefore experiences and skills.

The whole class can also be involved in setting the rules so the MD student can participate. In this way competition can still be maintained and the MD student will be accepted by his peers.

Muscular dystrophy progresses at different rates in each MD student therefore each child will have a different degree of muscle weakness. If you have brothers in your school with the same condition- do not plan for the younger sibling to follow the same progression/ timeline as this is not always the case.

**Other useful links**

[**http://www.cmt.org.uk/documents/MDC%20Education%20guidelines.pdf**](http://www.cmt.org.uk/documents/MDC%20Education%20guidelines.pdf)

Inclusive Education for Children with Muscular Dystrophy and other Neuromuscular Conditions, Guidance for Primary and Secondary Schools.

[**http://www.efds.co.uk/resources/sainsbury\_s\_active\_kids\_for\_all**](http://www.efds.co.uk/resources/sainsbury_s_active_kids_for_all)

To continue the momentum and create a lasting legacy for disabled people after London 2012, the four Home Country disability sport organisations and Sainsbury’s, with support of Paralympics GB and the Youth Sport Trust, have joined forces to develop **Active Kids for All Inclusive PE** training, based on the UK Disability Inclusion Training (UK DIT).

Primarily designed to support PE teachers in mainstream schools to include young disabled people within PE curriculum. However, the principles used can be applied to a number of settings and can be of benefit to **all** young people.

The training can also be used to support other teaching staff, trainee teachers, classroom assistants, learning support assistants and special educational needs co-ordinators.

<http://www.youthsporttrust.org/support-us/do-you-work-in-sen-we-need-your-help.aspx>

Well worth considering for your school.

**This information is based upon professional experience of working with students who have Muscular Dystrophy and a range of information that has been sourced from the Internet.**

**You are welcome to share this hand out but please can you ensure you acknowledge the origin of this hand out by providing the direct website link.**

[**www.redbridgeserc.org**](http://www.redbridgeserc.org)