



# **Karate and Down's Syndrome**

**Advice for Instructors**

**ENGLISH KARATE**



**FEDERATION**

# Acknowledgement

This guide has been developed in co-ordination with DSActive. DSActive specialise in activities for people with Down's syndrome and this guide could not have been done without their expertise.

We would like to thank DSActive for their work with us on this project and look forward to working with them closely over years to come.



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## What is Down's syndrome?

Down's syndrome is a genetic condition which is present from the moment of conception. There are 3 types of Down's syndrome, the most prevalent type is called Trisomy 21, where there is an additional copy of the chromosome 21 in each cell.

## How common is it?

For every 1,000 babies born, 1 will have Down's syndrome. There are approximately 40,000 people living with Down's syndrome in the UK (as of 2020).

## Terminology

It is vital to speak about issues relating to Down's syndrome in a way that is both factually accurate and inoffensive to people with Down's syndrome, their families, carers and the people who support them. People with Down's syndrome are all unique individuals and should be acknowledged as a person first and foremost. Down's syndrome is only a part of the person; they should never be referred to as "a Down's" or "a Down's person"



## **Activity levels of people with Down's syndrome**

One study (Phillips, 2008) found that 44% of people with Down's syndrome surveyed were obese and a further 29% were overweight. The study also found that only 16% of adults with Down's syndrome were meeting the government's physical activity recommendations. Although it is believed that this has improved since 2008, many students with Down's syndrome may need to be introduced to martial arts gradually and sensitively.

Individuals with Down's syndrome derive measurable physiological and psychological benefits from participation in physical activity and sport. Providing they are physically capable, a person with Down's syndrome can play any sport they want. People with Down's syndrome are often encouraged to participate in sports at a young age, to help build muscle tone, which can be naturally lower in people with Down's syndrome. Karate in particular is particularly good at developing muscle tone.

Sport can (and does) have a very powerful and positive influence on people and fits with governmental policy of promoting a healthier and more active lifestyle. Not only can sport provide opportunities for enjoyment and achievement, but it can help to develop and enhance valuable qualities such as self-esteem, leadership and teamwork. Moreover, it is widely acknowledged amongst professionals that having access to leisure facilities and community groups can be key drivers in preventing and reducing social and physical isolation. We want everybody who wants to train karate to do so, regardless of any perceived barriers.

However, whilst sport and karate can have a number of key benefits which advance the physical and mental health of those with the disability, there are key physical and mental health manifestations of Down's syndrome which must be given due consideration before adequate, individualised adaptive karate sessions can be offered which safeguard the EKF, the club instructor and the would-be karateka.

## **Associated physical health conditions**

- Hypotonia (state of low muscle tone (the amount of tension or resistance to stretch in a muscle), often involving reduced muscle strength.)
- Delayed motor skills
- Hearing impairments
- Vision impairments/poor visual acuity i.e. including issues with depth perception

## **Associated mental health conditions**

- All people with Down's syndrome will have a learning disability of one form or another
- May struggle to verbally express pain or illness
- Short-term memory

## Learning profile

Relative Challenges	Sample responses from parents
Hearing and vision impairments	Learning through modelling and copying
Delayed motor skills	Receptive vocabulary
Short-term memory	Social skills and engaging with others
Expressive language	Structure and routine
Widely varying developmental delays	Visual-spatial learners

The next sections of this guide will focus upon each of the core challenges and strengths, providing detail for instructors on how to overcome and amplify each, respectively.

### Hearing impairments

Research suggests that people with Down's syndrome may have hearing impairments, which may affect their inclusion in sport. 60-70% of people with Down's syndrome will be affected by glue ear, which can mean that hearing quality fluctuates from day to day. Some people with Down's syndrome will wear hearing aids, and they struggle to pick up conversation if the speaker is far away from them. However, this does not mean everyone with Down's syndrome will struggle with their hearing, so it is important to treat each student as an individual and get to know their needs.

Consequently, instructors should ensure that the participant has heard what you are asking students to do and fully understands what is expected of them. When providing instructions, you should try to ensure that where demonstrations follow initial instructions - before the commencement of activity - the original instructions are repeated before commencement of activity.

With regards to demonstrations, techniques and/or corrections should be utilised as much as possible as to negate the need to rely on interpretation and hearing. Where visual information is being presented, only present one format of visual information at any one time.

Furthermore, karate utilises the Japanese language a lot during sessions. However, ensure that the Japanese is followed up with the English translation as those who are struggling with hearing impairments, or those hearing a new word that is unfamiliar to them can cause needless confusion.

It is also good practice to ensure that before delivering instructions the karateka is aware, they are being communicated with and this can be done in the form of a physical gesture e.g. a nod or a wave.

Finally, involve the rest of the club including students and parents in order to support each other and any student with Down's syndrome.

## Visual impairments

Everyone with Down's syndrome will have poor visual acuity, one easy way to think of this is like looking through an unfocused camera lens. Visual acuity can not be improved through the wearing of glasses. Additionally, 60% of children with Down's syndrome will wear glasses by the age of 7, with 76% struggling to focus on near targets. People with Down's syndrome may also struggle with depth perception, which can affect participation in sport, although sport has been shown to be great at improving depth perception.

Instructors should ensure that students are positioned close to who ever is demonstrating to ensure they have seen the demonstration. New students may struggle with striking a bag or focus mitt so extra support may be needed at the start until depth perception has improved. Students may need to wear their glasses during the session, so precautions may need to be taken to avoid them falling off and breaking. Instructors should have open dialogue with the student and their parent/carer to ensure the session is being adapted to suit their needs.



## Other physical impairments

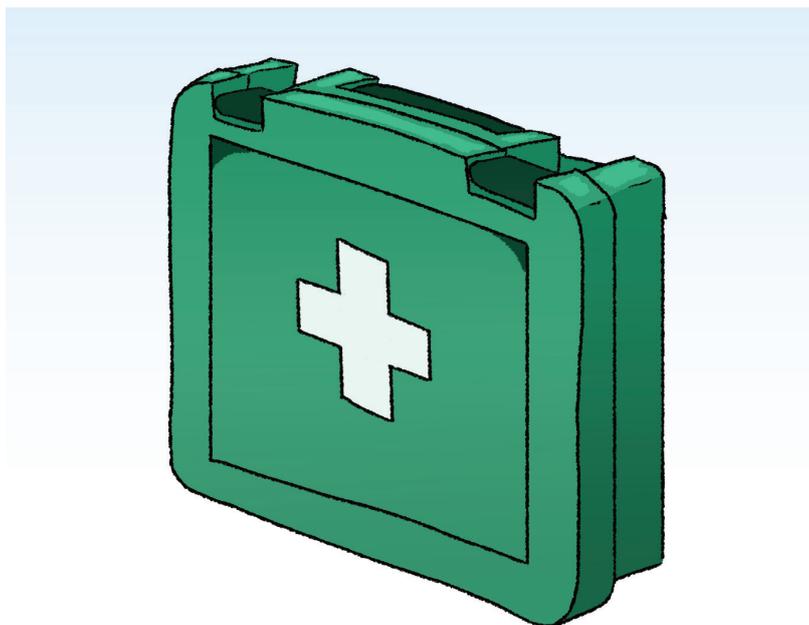
**Hypotonia** – Hypotonia refers to decreased muscle tone, which means that students may struggle to hold poses or strike bags. Students should be taught correct technique to avoid injury, especially during striking.

**Hypermobility** – Many people with Down's syndrome will have hypermobility, or very flexible joints. This is especially prevalent in knees, hips and ankles, which can negatively affect participation in sport. Instructors should check with parents or carers if the student is hypermobile and adapt their sessions accordingly. Safety should come above performance, especially for new students.

**Congenital heart defects** – Instructors should check if any of their students have congenital heart defects from their parent or carer before they participate in martial arts. Exercises should be paced, and instructors should keep a keen eye on the colour of the student's lips. If they turn blue or are out of breath allow a break. Have the student sit down and drink some water if necessary but do not dwell on it. It would be beneficial for the health and safety of the student (and other students) if the instructor has undertaken basic first aid for heart problems.

**Risk assessments and Craniovertebral Instability** – Atlanto-Axial Instability (often known as Craniovertebral Instability) refers to excessive movement of the C1 and C2 vertebrae at the top of the neck. This can lead to bruising of the spinal column, which can lead to neurological problems, and in very severe cases paralysis. Thankfully, research suggest that this injury is rare now in people with Down's syndrome, but instructors should be aware of this. Karate practice would be considered low risk, however, kumite would be considered high risk. Instructors should speak to parents or carers before the student takes part in any kumite, and if there is any doubt ask them to speak with the GP before participation in kumite.

It should also be noted that throws, breakfalls, chokes, and strikes can be particularly dangerous for people with Down's syndrome. They are even more risky if students are not taught in an adapted, appropriate way. Participants should be made aware of the risks of being involved in these activities, so an informed choice can be made about whether they wish to participate or not. If they are under the age of 18, or are medically deemed to not have capacity, approval should be sort from the parent. Medical GP clearance before these kind of activities would be advised.



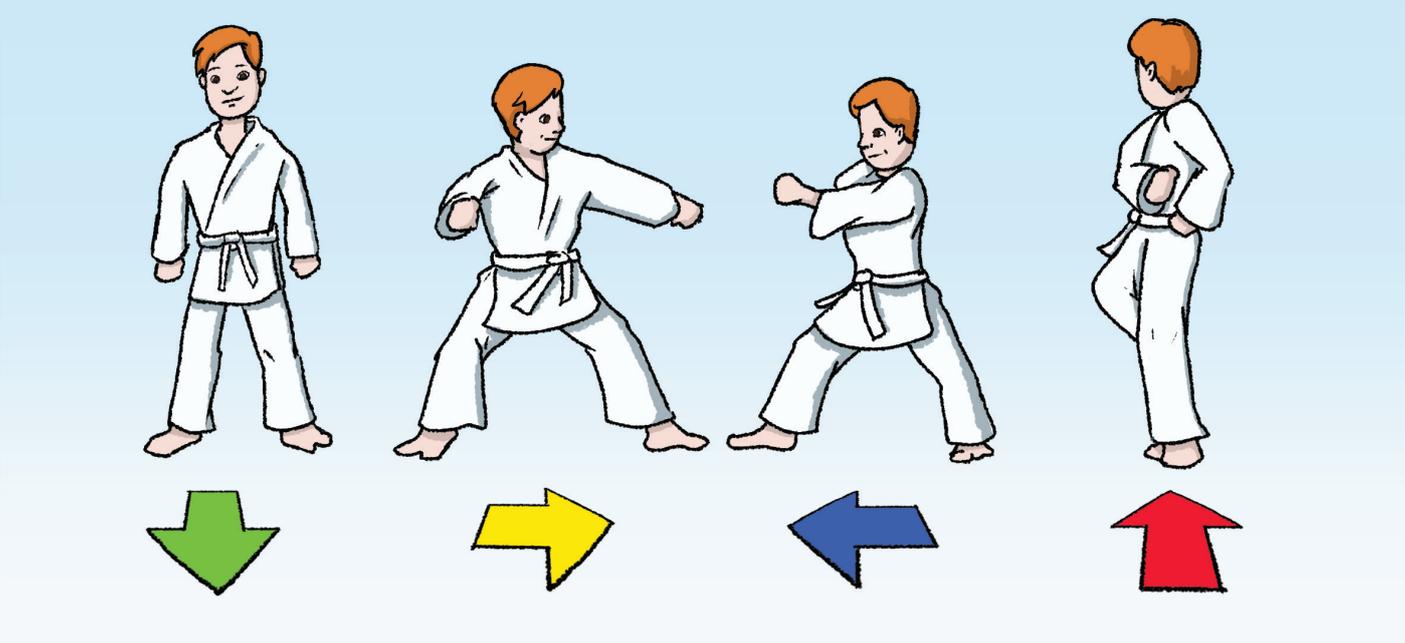
Hip and joint problems, such as dislocations. As for all students with skeletal impairments, it is important to strike a balance between active and relaxed movements. Ehlers Danlos Syndromes (EDS) are a group of inherited conditions that affect connective tissue such as skin, ligaments, tendons, blood vessels, internal organs and bones. The different types of EDS may share characteristics such as stretchy or fragile skin that breaks or bruises easily. People with EDS may also experience hypermobility or dislocation of their joints. Provide a small stool (preferably a revolving one) on which the student can do the various exercises, and avoid high kicks or impact kicks on strike pads. Use air-filled strike pads.

### Short term memory

People with Down's syndrome may struggle with their short term memory, they may need to see a demonstration multiple times before they are able to copy the drill. However, people with Down's syndrome are generally excellent copies of physical actions, so they will likely excel at copying movements.

When using verbal instruction, it is better to keep the commands as short as possible, to avoid using difficult to understand words and to use concrete terms rather than abstract terms. For example, in a standard sports hall the command 'stand on the white line' would be an abstract command as the white line may likely run all the way around the sports hall. 'Stand on this green line' is a concrete command as it is clear what you want the student to do, with little room for misinterpretation.

It will take time to develop certain drills in karate. In principle a student with Down's syndrome can learn everything if it is adapted to meet her/his physical challenges. For example, use colours to mark the sides of the room (east, west, south, north) to help learning the directions of kata; write down the names of techniques on big cards, preferably with a picture of it; give a student with Down's syndrome a personal notebook in which both you and the student keep notes about what you did in the lesson and what to learn for next time.



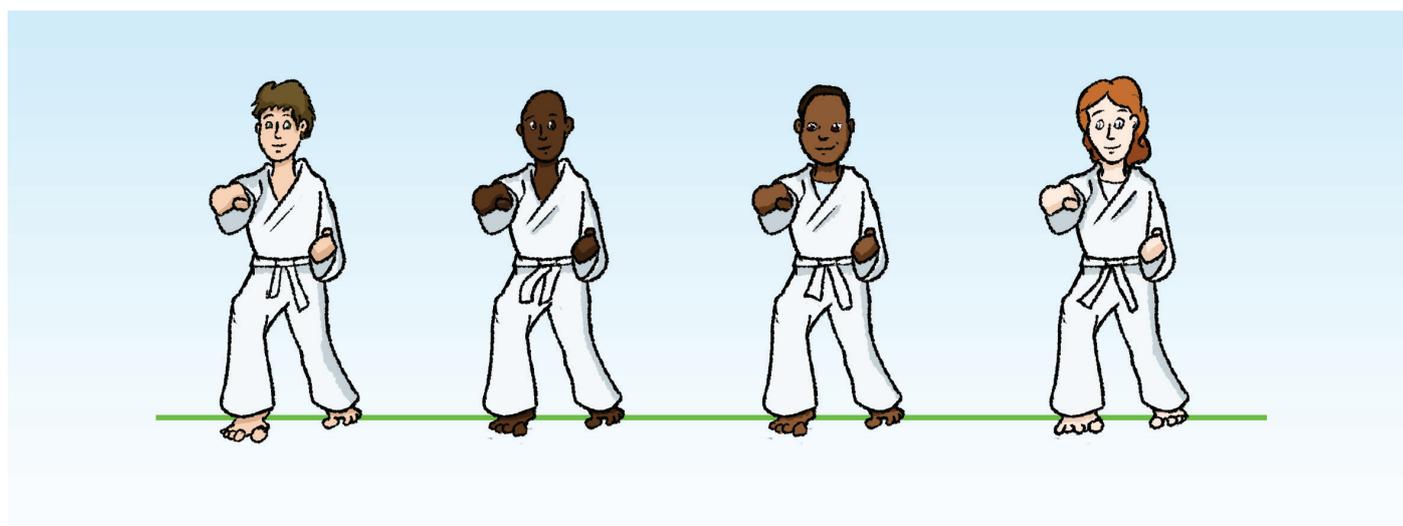
## Visual-Spatial learning

People with Down's syndrome are generally very good visual-spatial learners, meaning that it is important to demonstrate activities beforehand to ensure learning. Demonstrations will aid learning, but remember every student is individual, so what might work for one student may not work for them all.

## Learning through modelling

Learning through modelling is another strength of people with Down's syndrome. Therefore, one of the key elements which lends itself naturally to karate is demonstrations.

Learning via visual means is often better by watching peers during practice. Given that most techniques are done in groups and repeated multiple times, somebody with Down's syndrome who fails to understand verbal instructions from an instructor/coach can watch their peers as to understand the movements. The design of the karate class (situated in lines) and group activity facilitate this process and can be utilised to enhance the learning and experience of those with Down's syndrome whilst training.

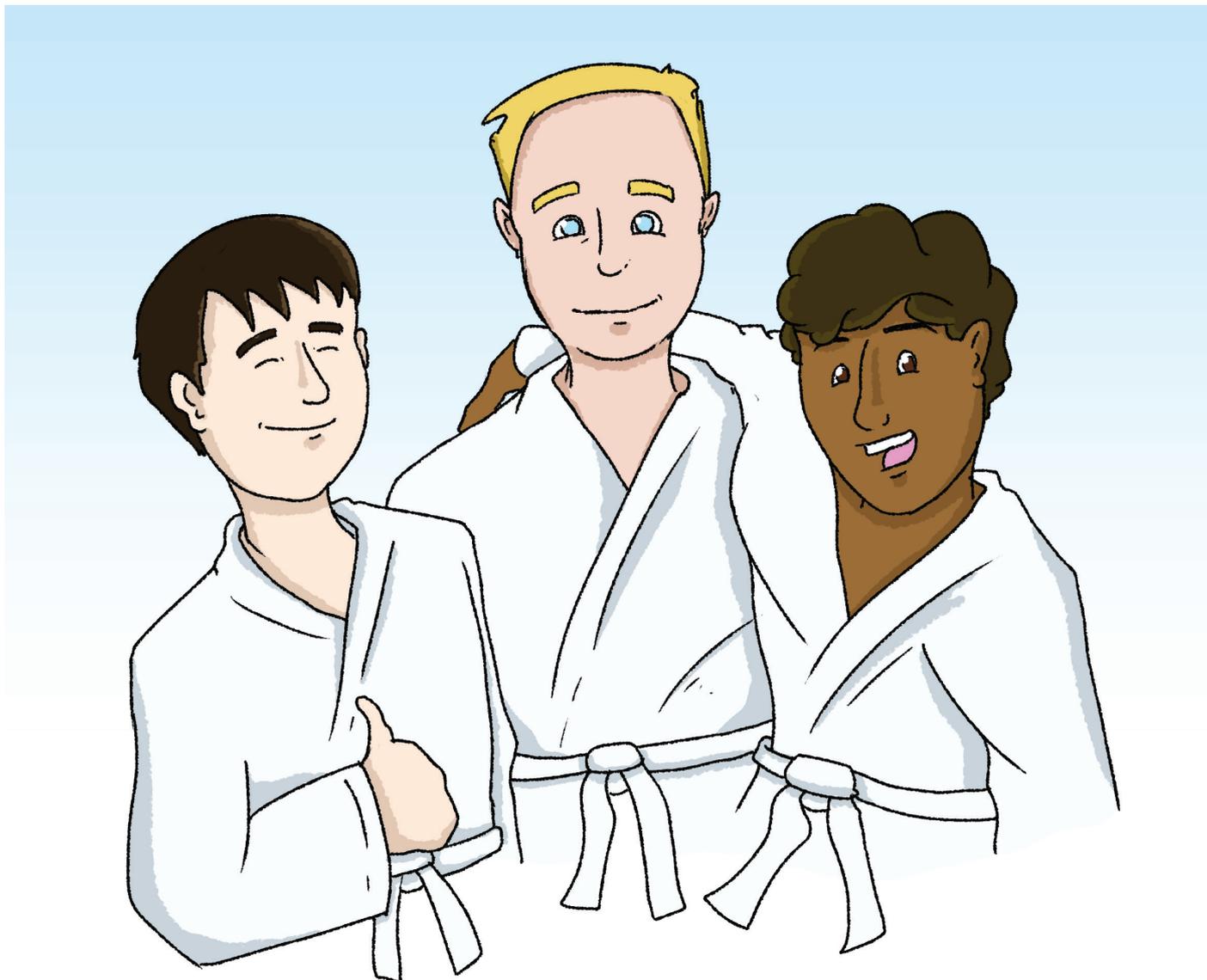


## Language and communication

People with Down's syndrome will often respond very well to positive vocabulary and respond less well to negative vocabulary. This means it is vital that instructors are positive and affirming with their praise, as this will aid learning. Verbal instructions, when used, should be short, sharp and precise, as this will aid understanding.

## Social skills and engaging with others

People with Down's syndrome may have negative previous experiences with physical activity so it is important to improve their confidence by making the session fun, engaging and achievable. Many people with Down's syndrome, although definitely not everyone, will enjoy the social aspect of the sessions, so be sure to promote a community feel to the sessions as this will create a positive experience for the students.



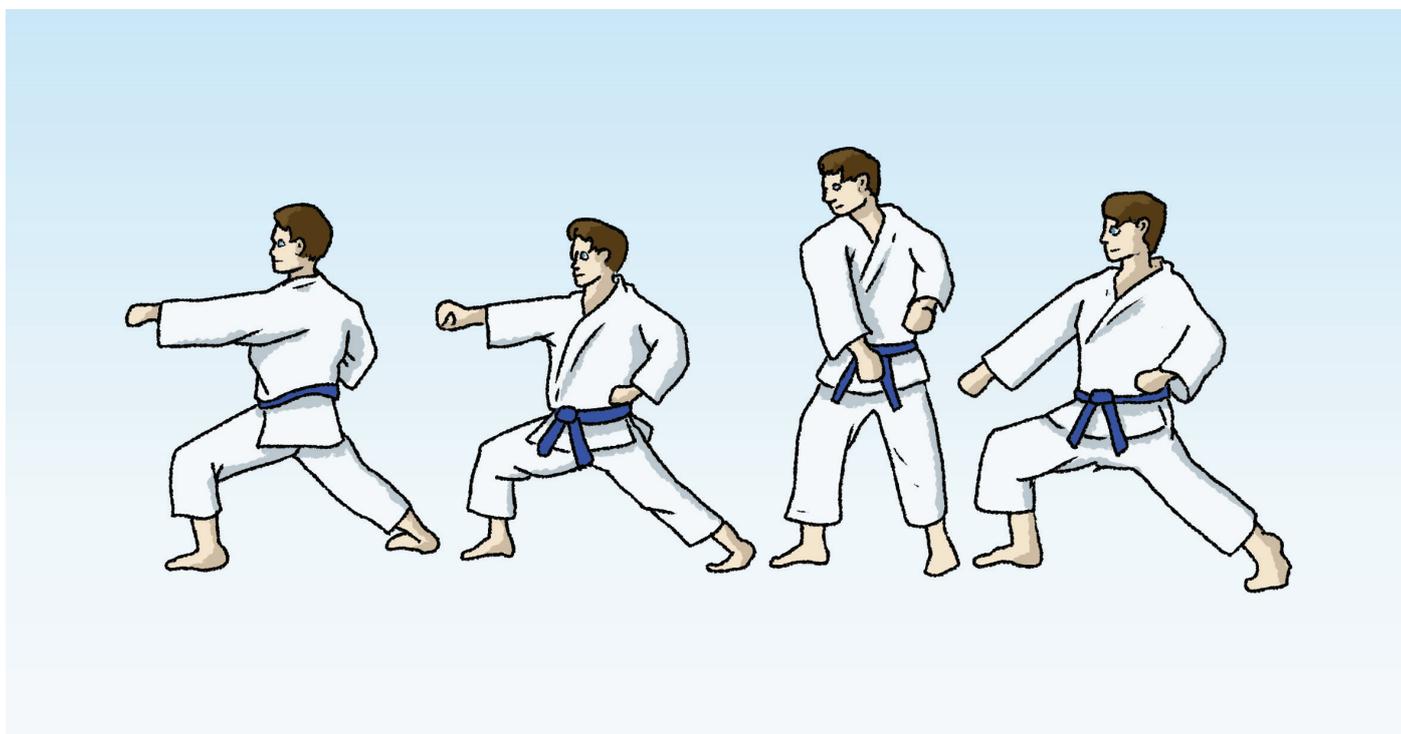
## Developmental delay

Many people with Down's syndrome may experience developmental delay, meaning that they are at a different stage of development both physically and mentally to their peers who do not have Down's syndrome. Therefore, where safe, students should be grouped based on ability rather than on age group alone.

## Adaptability

It is commonplace for effective teaching of those with a disability or impairment to adapt the lessons accordingly as to maximise the inclusive nature of the class and ensure that a student is able to fully immerse themselves in all of the class rather than having to sit certain sections out. Ensure that the session is always adaptable and achievable for each athlete as there might be a wide range of physical, technical and cognitive ability.

Karate is a self-defence discipline/sport and as such adapting movements required to defend yourself may not necessarily be appropriate. Therefore, instructors should break down the movements into easily digestible components, ensuring that these are mastered and understood before 'chaining' the pieces together gradually to form the whole move, sequence/combination or kata.



## Moral code

A strong moral code should be practiced and appropriate use of techniques should be explained and reinforced, i.e. hitting your peers/teachers/parents is not allowed, but using it as defence would be.

## Motor skills

Many people with Down's syndrome may struggle with delayed motor skills, meaning it takes them longer to respond to a stimulus. Repetition will lead to improvement, but instructors should be aware of this as it may lead to difficulties with kata and basics for example.

As mentioned, people with Down's syndrome are often excellent copies of physical actions, so ensuring good technique is adopted for every demonstration is very important.

## Repetition

People with Down's syndrome often respond well to repetition, and utilising this will build confidence and reduce anxiety. Adopting a similar format to each session will aid with engagement and reduce anxiety.

Karate naturally lends itself well to repetition. Students often practice the same moves up and down the dojo hall throughout large sections of a class. Basics and katas are often repeated numerous times within one class or throughout a period of weeks and months.

Given that structure and routine are important to those with Down's syndrome, instructors should give this due consideration in pre-lesson planning.

However, whilst repetition has profound benefits for the karateka, instructors should give due regard to ensuring that routines and sessions are creative, varied, engaging and fun!

It is vitally important for people who have a negative experience with physical activity to make the session engaging. Therefore, change exercises frequently; do not make the drills too long or too exciting, especially not for beginners; build each exercise up bit by bit and repeat frequently, with some games for fun in between.

## Competition

Whilst this guide has been developed primarily to increase activity at grassroots level and improve coach's confidence in teaching students with Down's syndrome, there is an option within the EKF and the WKF for people with Down's syndrome to compete.

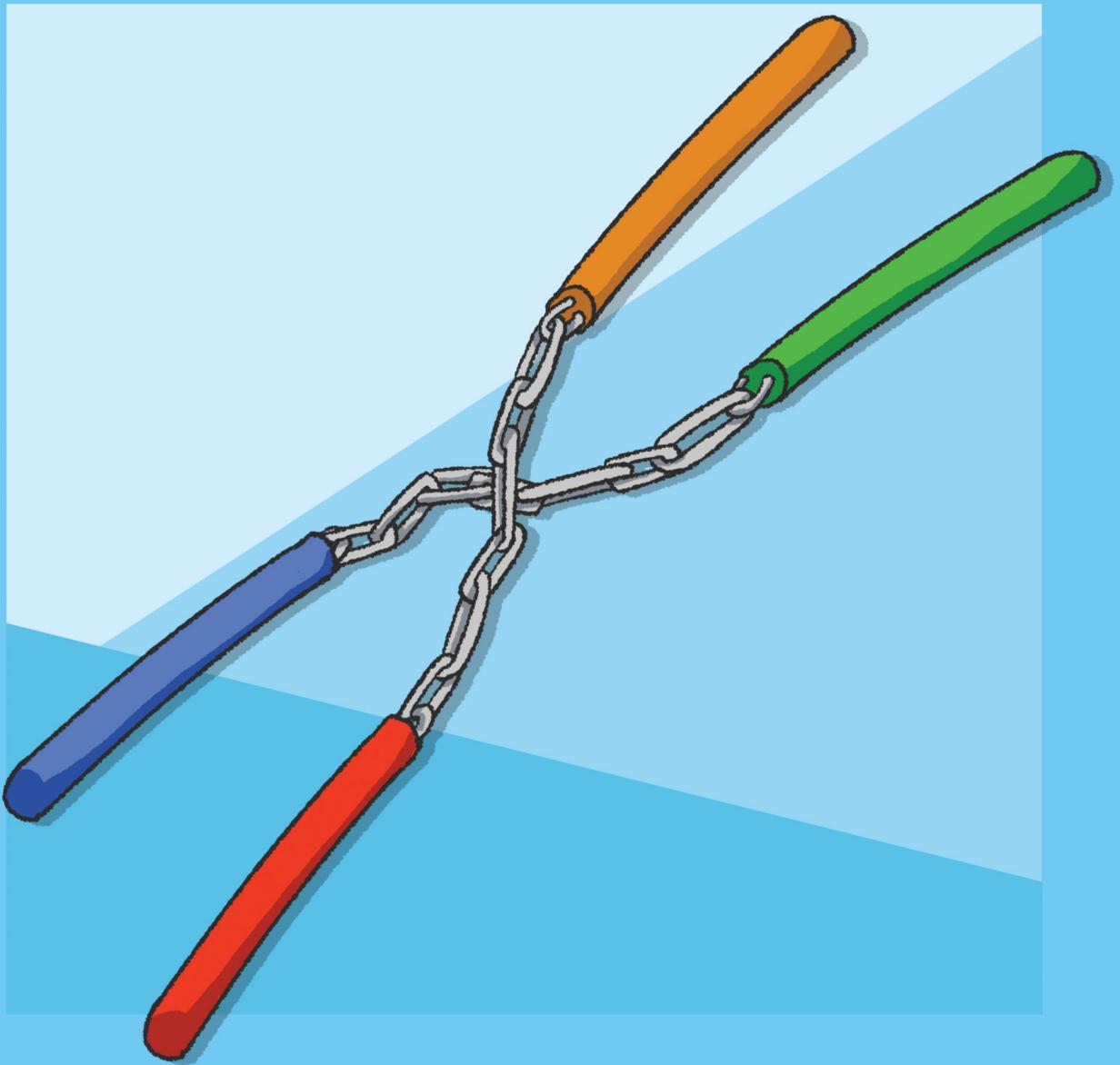
Taken from the WKF Para Rules, the relevant section is documented below:

***2.1.3. Intellectually Impaired Athletes with an intellectual impairment have a restriction in intellectual functioning ( $IQ \leq 75$ ) and adaptive behavior in which affects conceptual, social and practical adaptive skills required for everyday life. This impairment must be present before the age of 18. If athlete's impairment does not comply with the three criteria mentioned above, the athlete is not be considered eligible to compete and will therefore be excluded from the Para-Karate competition.***

Prior to competitions, medical diagnostic forms are required for completion. The link to the intellectually impaired category form is located below:

[https://www.wkf.net/pdf/mdf\\_intellectually\\_impaired\\_athletes.pdf](https://www.wkf.net/pdf/mdf_intellectually_impaired_athletes.pdf)





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