



Be Your Best : The Challenge of healthy lifestyles for young with a disability



Guide facilitating interventions in sport and physical activity among young people with a

# MOTOR DISABILITY

2013 Edition

Translated 2016

PRODUCED BY



Université du Québec  
à Trois-Rivières



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FINANCIAL SUPPORT OF



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THE LOGO OF THE 'LABORATOIRE EN LOISIR ET VIE COMMUNAUTAIRE'

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THE PHOTOS ON THE FRONT PAGE SHOW A YOUNG PERSON IN WHEELCHAIR WITH A BOCCIA BALL FOCUSING ON THE GAME, A YOUNG GIRL IN A WHEELCHAIR WITH A BIG SMILE ON HER FACE, A YOUNG BOY IN A WHEELCHAIR THROWING A WHITE BALL AND A YOUNG BOY WEARING A PROTECTIVE HELMET RUNNING WITH THE HELP OF HIS WALKER.

THE PICTURES PRESENTED IN THIS GUIDE WERE TAKEN AS PART OF THE DÉFI SPORTIF ALTERGO . THEY DO NOT NECESSARILY REPRESENT YOUNG PEOPLE WITH THE DISABILITY OR THE DISORDER WHICH IS THE SUBJECT OF THIS GUIDE

THANKS TO JEAN-BAPTISTE BENAVENT, FRANÇOIS LACASSE AND ALAIN RAKOTOMANANA FOR THE PICTURES PRESENTED ON THE FRONT PAGE AND THROUGHOUT THE GUIDE.

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## INTRODUCTION

There are many benefits to sport and physical activity<sup>1</sup>. Many studies have shown that sport and physical activity has physical, psychological, cognitive and social benefits.

However, young people with functional limitations may be restricted in their participation in sport and physical activity<sup>2</sup>. This includes young people with motor disabilities.

This guide — developed using the literature and interviews with young people, parents and professionals — provides a clear analysis of the situation of these young people in everyday life, specifically their participation in sport and physical activity. A total of 7 interviews were conducted with 2 young people, 3 parents, 1 professional, and 1 occupational therapist. These interviews support the scientific literature and provide ideas and means to overcome the limitations these young people face when participating in sport and physical activity.



This photo shows a young girl running and wearing a protective helmet.

## 1. SPORT AND PHYSICAL ACTIVITY WITH A MOTOR DISABILITY

The interviews conducted with young people and their parents have allowed us to understand that sport and physical activity is a very important element in the life of a young person with a motor disability. The excerpts from interviews with young people and their parents that we will present demonstrate the importance of participating in sport and physical activity, both for physical health and other aspects such as integration and accepting the disability.

A young person explained how sport and physical activity allows him to be more active. When asked the question: "...how has it helped you?" he answered: *"By moving more..."* For others, it can also affect their weight: *"yeah I work out at (name of training centre)...I still have to lose my big behind, after all"*. We also observed the presence of benefits for the body, the young person's physical health and the importance of moving, being active. A young person stated that it's important to move and to stay healthy *"...to live longer"*.

Other comments made by young people and their parents showed that sport and physical activity play an important part in accepting the disability and integration. A mom said that her daughter plays a sport for the pleasure of being active and being with friends:

*"Yes, for me it's a lot about friends because before, she didn't want to, and this winter, they had a soccer tournament and I thought she wasn't interested...she said oh yes mom we'll go. That's it...because the friends are there and for me, friends are very, very important."*

Playing a sport is not only about improving or maintaining physical health. Young people understand that this fun activity time also allows them to connect with others. However, this is not always sufficiently emphasized in schools, as stated by this young person who, when asked the question "what would you say to those teachers that hasn't been said yet?" answered: *"Uhh...Maybe to better integrate them into the group and have them participate more"*.

Finally, physical activity has an impact on the psychological health of a young person with a motor disability. This activity time is an outlet, a moment of release to achieve a state of relaxation and psychological well-being. This allows the young person to have fun and enjoy these good times. In an interview, a mom insisted that it's important for her daughter to have fun during sports: *"it's just to have some fun, for my daughter anyway, because she's not very athletic"*. And it makes young people with motor disabilities feel valued because it affects their motivation and morale: *"Oh yes, oh yes, it lifts their spirits, I tell you, for a child with a disability to feel valued in sports"*.

## 2. BENEFITS OF SPORT AND PHYSICAL ACTIVITY

For a number of years, physical activity has been known to have health benefits for individuals, including young people and adolescents<sup>3</sup>. Sport and physical activity has many benefits<sup>1</sup>. Many studies have shown that participating in sport and physical activity has physical, psychological, cognitive and social benefits.

Table 1 shows the main benefits documented in the scientific literature and the interviews conducted.

Table 1: Benefits of sport and physical activity

Areas	Benefits
Physical	Improves endurance Improves strength Results in weight loss Boosts energy
Psychological	Boosts self-esteem Improves management of impulsivity, anger and aggressiveness Allows the young person to develop
Cognitive	Enables discipline Enables the achievement of goals and success Develops strategies Improves listening skills and concentration
Social	Helps develop social skills Allows the young person to participate in various activities Creates situations where the young person must interact and communicate with other young people on the team

4-7

### 2.1 Physical

From an early age, participating in sport and physical activity helps the body develop properly. In fact, this provides an opportunity for young people to continue to develop their balance, perceptual motor skills, sensorimotor skills (with the development of body image), and locomotor skills<sup>8</sup>. Participating in sport and physical activity during growth is important because it allows the body to acquire a basis for staying healthy and developing a healthy lifestyle. Physical activity has an effect on the body of the child or young adult with a motor disability, including on metabolic syndrome and cardiovascular function as well as preventing injury and obesity<sup>3</sup>.

## **2.2 Psychological**

Participating in sport and physical activity on a regular basis is enjoyable and makes us more aware of the alarm signals our body and mind can emit. As Dr. Potter (2006) points out: "Participating in adapted sport and physical activity has a number of objectives, including health, performance...it should improve the sense of well-being, competence and self-esteem. Sports can therefore prevent disability".

It has been shown that physical activity and an active lifestyle help increase the will to live, reduce the effects of bad stress, reduce anxiety levels and factors of depression, gain better psychological and emotional stability and build friendships or support networks<sup>9</sup>. In fact, physical activity may contribute to emotional management by providing a distraction strategy (decreased boredom), a strategy to stay focused, and by increasing the feeling of self-efficacy<sup>10, 11</sup>.

For adolescents with functional limitations who are sometimes finding their bearings and building an identity, taking part in physical activity can contribute to developing a positive self-image, and therefore improving self-esteem and self-confidence<sup>10</sup>. For others, this activity time is used as an outlet, a moment of release to achieve a state of relaxation and psychological well-being.

## **2.3 Cognitive**

Sport and physical activity also has cognitive benefits. Participating in such activities enables self-discipline and provides an opportunity to achieve goals and to be successful<sup>4, 5, 7</sup>. It also provides the opportunity to develop strategies alone and as a team<sup>4, 5, 7</sup>. The various instructions given during sport and physical activity as well as the partners involved in the activity help develop listening skills and concentration<sup>4, 5</sup>.

## **2.4 Social**

Participating in sport and physical activity can have benefits on social health, for example by preventing and combating various forms of violence against oneself (suicide, anorexia), against others (aggressiveness, sexism, racism) and against property (vandalism). Physical activities somewhat resemble a micro-society where young people with functional limitations learn to adapt as quickly and effectively as possible. This contributes to the development of responsible attitudes and behaviours; the young person learns to become integrated, build relationships, get along with teammates, compete against an opponent and work as a team<sup>12</sup>. Thus, the young person learns to communicate with others, to open up to others and to develop social interactions. Participating in sport and physical activity helps to learn how to live in society. It allows one to live experiences with others, to assert oneself, to feel valued, to be part of a team, and to feel useful and accepted.

We should also emphasize the importance of physical activity because it facilitates physical development and can contribute to social interactions. Learning body control through physical activity fosters social integration<sup>13</sup>.



In conclusion, regardless of the chosen physical activity, it is very likely that it will have a positive impact on the development of the young person with a functional limitation. Physical activity helps maintain and acquire good health and a healthy lifestyle, which in turn prevents complications caused by inactivity and also to achieve psychological well-being by experiencing joy and satisfaction when participating in an activity.



Alain Rakotomanana © Défi sportif AlterGo 2016

The photo shows a young person running with his Canadian crutches and a big smile on his face, who is encouraged by the crowd.

### **3. CONSTRAINTS TO PARTICIPATION IN SPORT AND PHYSICAL ACTIVITY**

As seen above, participating in sport and physical activity has beneficial effects on various aspects of the health of young people with functional limitations. However, the literature and interviews conducted with young people and their parents show that constraints can affect or restrict their participation in such activities. These constraints may relate to the young person with a disability, but also to the environment.

#### **3.1 Constraints relating to young people with motor disabilities**

A young person with a motor disability has impaired motor functions. It is important to clarify that there are two types of motor functions: gross and fine motor skills. Gross motor skills include motor activities that involve the whole body. This is considered the basis for the development of motor skills because it includes fundamental skills that enable locomotor movements, movements involving force production and changes in position<sup>14</sup>. On the other hand, fine motor skills involve the ability to handle and manipulate objects using the muscles of the hands, fingers, feet and toes. Fine motor skills are usually based on eye-hand coordination and define manipulative and gripping activities that require precision or dexterity. Note that fine motor skills are dependent on the overall development of trunk strength<sup>14</sup>.

Therefore, a young person with a motor disability may have trouble moving or maintaining a posture during a sport or physical activity but the disability can also affect his or her ability to manipulate objects, as one mom explained in an interview:

*“My daughter is autonomous despite everything, but anything that involves fine motor skills she can’t do so for sure she was limited, but there was never anything that was changed for her”.*

#### **3.2 Constraints relating to the environment**

Constraints are often related to a lack of accessibility in the environment. According to the Québec Leisure Council (Figure 1), four essential dimensions convey the concept of accessibility to leisure: the temporal dimension, the spatial (or physical) dimension, the economic dimension and the cultural dimension<sup>15</sup>.

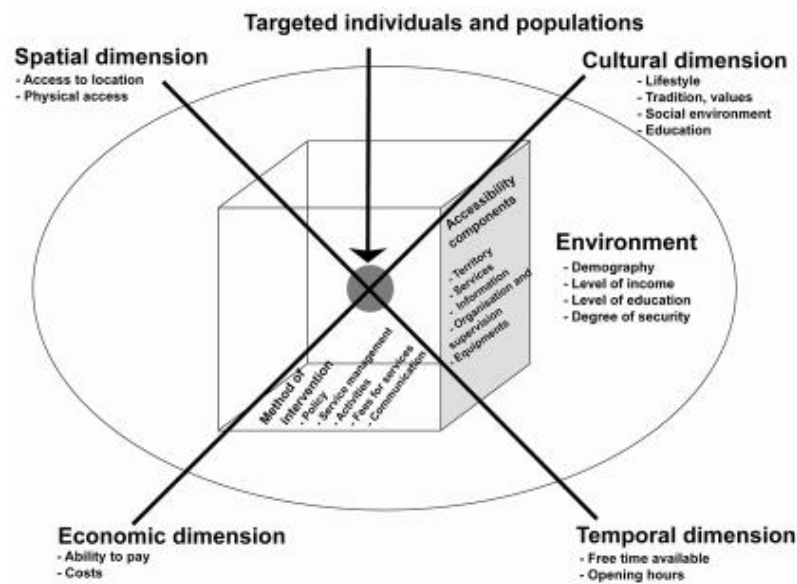


Figure 1: Dimensions of accessibility (reproduced with permission of the Québec Leisure Council)

On the one hand, physical accessibility includes access to municipal buildings, public spaces, pedestrian networks, bike paths, parks and green spaces, and on the other, the introduction of measures in policies, public programs and projects to better meet the needs of special populations by providing accessible information, both physically and in terms of language. It is also important that sport and physical activity throughout the territory be well-distributed (on a national, regional and local level, both in urban and rural areas as well as peri-urban areas). This is precisely the reality that a parent demonstrated in one of the interviews:

*“A few kayaked, but it was in (name of city), so I thought it wasn’t easy going to (name of city) to do that. You know, that’s it, sometimes adapted things aren’t necessarily in (name of city) either. If we look at it, kayaking was in (name of city) 5 hours away [ok], you know, so it wasn’t necessarily easy... You know, what is, what’s closer here is not really for them, probably not, we have to go further for activities.”*

Moreover, interviews revealed that young people often lack information about the activities they can participate in and where they are available: “[Well, you can, can’t you, there are things for adults too]. Yeah? [Yes! yes yes yes!] Oh, I didn’t know that.” When asked the question “where do you think you could do that?” the young person answered “Uh, I don’t know”.

Another type of constraint relating to the environment may emerge, which is the adjustment and adaptation of activities. A parent told us how he felt about the lack of adapted physical activities at school:

*“I think it’s regrettable that there have not been more activities developed with my children because I’m going to talk more about motor disability because my daughter has a motor disability more than an intellectual one; she’s perfectly normal on an intellectual level. But she has a limitation so she could never play team sports; because of the limitation it was always individual sports. At school, in physical education, well she was always excluded, they would always have her pick up Shuttlecocks and well, she always loved physical activity, but she was always limited in her choice of sports.”*

In another interview, when asked the question: *“And to your knowledge, was there any equipment or adjustments made at school?”* a parent replied that there were none, and added: *“but I will say that when you’re not in a wheelchair, I’m talking for motor disabilities here, there’s not much. It’s limited; it always depends on your disability, although Julie is functional.”*

However, the development of sport and physical activity adapted to young people with motor disabilities cannot take place without training or at least raising awareness among professionals (both in leisure and education). Many parents testified to that effect and noted the lack of training, especially in the field of education:

*“Well I’d say that, my God, there’s a lack among teachers, professionals, when you’re not handicapped you have no idea what it can do in terms of self-confidence and all that.”*

*“In terms of physical education, she always tried to integrate as best as she could, but for sure there are sports like basketball where it’s not easy and she went anyway. And I never, you know, for physical education, I knew that she did it in intervals and all that, but she was in the regular physical education program at school and teachers never tried to push things further, to adapt things so she could fully integrate.”*

*“You know, they might not get enough support and then when someone says oh no, I don’t feel like it, they let them be.”*

*“At one point, their limitations mean that they can’t follow, that’s why they lose interest in sports or activities sometimes because they’re excluded, especially when it’s performance based.”*

### 3.3 Means to reduce constraints

Scientific literature and interviews have revealed different actions and individuals who can reduce constraints for students with motor disabilities. Table 2 presents a few suggestions.

Table 2: Suggestions to reduce constraints

Individuals involved	Actions	Examples
Professionals (coaches, teachers, educators, etc.)	Adapting activities and diversification	With young paraplegics, the teacher must make every effort to develop the young person's ability to use his/her upper limbs. Thus, drills that help develop activities such as throwing and catching a ball must be used. All cooperative activities where a parachute is used can be done by these young people. The same goes for almost all "pass and follow" drills and "pass and go" drills as well as all those where the young person can substitute walking and running for movements with a wheelchair.
Professionals (coaches, teachers, educators, etc.)	Manipulating objects	When objects are used to shoot or hit, simply reduce the weight of the object to allow an extension of the shaft. The young person's range is then improved, but don't forget, when possible, to extend the contact surface.
Professionals (coaches, teachers, educators, etc.)	Modifying and adapting rules and instructions	For team sports, you will eventually need to adapt the rules and use various pairing strategies to increase integration opportunities.
Professionals (coaches, teachers, educators, etc.) and parents	The importance of games (See Figure 2)	Games allow young people to get involved in physically demanding tasks. They are motivated and this significantly increases their level of activity. This improves cardiorespiratory endurance, muscular strength and endurance, and flexibility.

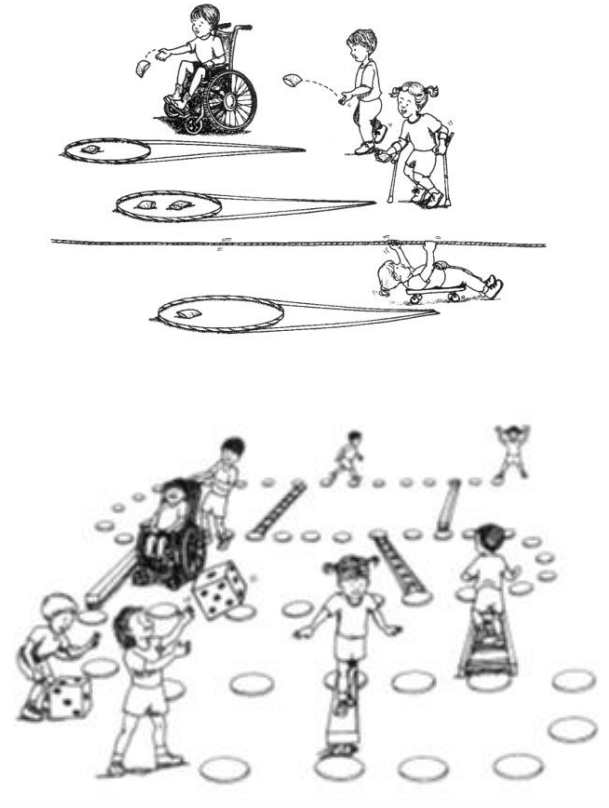


Figure 2: The importance of games<sup>16</sup>

Various aspects can be considered when adapting an activity, whether it be in terms of equipment, space, time, required strength or rules. Table 3 provides a few ways to do this.

Table 3: Examples of how to adapt activities

Areas	Examples
Equipment	Change the size or weight of objects and tools, size of targets and texture of balls.
Space	Modify the playing field, such as the distance between the target and the player or the height of the targets.
Time	Allow the student more time to complete the task.
Strength	Modify strength or speed constraints.
Rules and responsibilities	Simplify requests for different people.

#### 4. PROGRAMS AND TOOLS AVAILABLE

This section provides a list of programs and/or organizations (non-exhaustive) that support healthy lifestyles and sport and physical activity for young people with motor disabilities.

##### 4.1 An example of a game: Boccia

Boccia is similar to Bocce and is played by individuals with severe motor disabilities. The objective of the game is to throw a red or blue leather ball as close as possible to the target, a white ball called a “Jack”. At the beginning of the match, a toss-up determines which team gets the red balls and which team gets the blue balls. The red team starts the match by throwing the white ball.

The objective of each team is to throw the balls as close as possible to the white ball. The athlete in a wheelchair can propel their 6 balls using their hand, foot or with the help of a device. Matches are mixed and can take place individually, as a pair or in teams of three players. A match cannot exceed 50 minutes.



The photo shows a young boy in a wheelchair playing boccia.

Table 4: Associations and tools that support participation in sport and physical activity for young people with motor disabilities

Name of the organization or program <sup>1</sup>	Web site or phone number of the organization or program	Role of the organization or program
Association de loisirs des personnes handicapées physiques de Montréal	514 352-5119	Improve the quality of life of people with physical and/or neurological limitations
Association Québécoise de Sports pour Paralytiques Cérébraux	<a href="http://www.sportpc.qc.ca/">http://www.sportpc.qc.ca/</a> [french only]	“Promote, develop and support sport and physical activity for people with brain injuries or other physical limitations in order to improve their quality of life.”
Association Québécoise de Voile Adaptée (AQVA)	<a href="http://www.aqvaqc.com/en">http://www.aqvaqc.com/en</a>	Organizes adapted sailing activities in the Montréal and <i>Estrie</i> regions and soon in Québec.
Centre d'Intégration à la Vie Active	<a href="http://www.civa.qc.ca">http://www.civa.qc.ca</a> [french only]	“Help disabled people integrate their community and live a healthy and active lifestyle.”
Club de hockey sur luge	<a href="http://www.hockeyluge.ca/">http://www.hockeyluge.ca/</a> [french only]	Organize sledge hockey activities throughout Québec
Corpuscule Danse	<a href="http://www.corpuscule-danse.com">http://www.corpuscule-danse.com</a> [french only]	Offer dance activities to people with motor disabilities
Espace Multisoleil	<a href="http://www.espacemultisoleil.org">http://www.espacemultisoleil.org</a> [french only]	“Allow people with multiple disabilities to lead an active lifestyle in a stimulating, warm and safe environment by offering sociocultural, recreational, sports and educational activities that contribute to personal development.”
Fondation des sports adaptés (FSA)	<a href="http://adaptivesports.ca/">http://adaptivesports.ca/</a>	Organize and implement educational and sports activities for young people with motor disabilities in the <i>Estrie</i> region

<sup>1</sup> Organizations and programs are listed in alphabetical order.



Table 4 (Cont.)

Name of the organization or program <sup>2</sup>	Web site or phone number of the organization or program	Role of the organization or program
Institut de Réadaptation Gingras-Lindsay-de-Montréal	<a href="http://www.irglm.gc.ca/en">http://www.irglm.gc.ca/en</a>	Hospital specialized in the rehabilitation of people with motor disabilities
Juni-Sport	<a href="http://www.juni-sport.org/">http://www.juni-sport.org/</a> [french only]	Promote sport and physical activity among young people, the population and public institutions
Parasports Québec	<a href="http://www.parasports.quebec.com/accueil.php">http://www.parasports.quebec.com/accueil.php</a> [french only]	Develop and coordinate activities fosters the personal fulfillment of people with physical limitations while promoting health and an active lifestyle to stimulate their integration process
Viomax	<a href="http://viomax.ca/en.php?lang=EN">http://viomax.ca/en.php?lang=EN</a>	Offer physical activity for people with physical limitations
Volleyball Canada	<a href="http://www.volleyball.ca/">http://www.volleyball.ca/</a>	Organize Canadian championships in sitting volley-ball

The document “Guide to resources per region” lists various organizations and programs in Québec that support young people with functional limitations and their families. Foundations that support the participation of these young people in sport and physical activity are also listed. A list of organizations and programs per region in Québec that can support the participation of young people with functional limitations in sport and physical activity is also included. This information is relevant to all types of functional limitations. Although this list contains many opportunities for young people to stay active, it is non-exhaustive.

<sup>2</sup> Organizations and programs are listed in alphabetical order.

## 5. KEY POINTS TO SUPPORT PARTICIPATION IN SPORT AND PHYSICAL ACTIVITY

- ❖ Sport and physical activity is very important in the life of young people with motor disabilities and has many physical, psychological, cognitive and social benefits.
- ❖ It is important to make locations physically accessible so young people can first access the area where the activity takes place.
- ❖ Adapting activities does not always require major resources and a lot of funding. Sometimes, common sense and logic can make a big difference.
- ❖ We must be attentive to the needs of young people with motor disabilities before adapting an activity or offering to help so that the activity meets their needs and desires (for example, not oversimplifying an activity).
- ❖ It is important to educate professionals and teachers about motor disabilities.



The photo shows young people playing with a big ball.

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