

# PHYSICAL ACTIVITY, PHYSICAL EDUCATION AND SPORTS OF PERSONS WITH MENTAL DISABILITY IN RELATION WITH WELLNESS (THEORETICAL CONSIDERATION)

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**Abstract:** *The theoretical concept of participation in physical activities (PA) of persons with mental disability (MD) is presented. Sub-parts are oriented on explanation of basic terminology (physical activity, physical education, sport) and specific aspects of PA (evolution, movement standards, social development, sports programs). External framework of PA and their influence on personality with MD is stressed, too (legislation and environmental conditions). The benefits of PA for both psycho-social development and health related variables of persons with MD are described including frequent and recommended activities.*

**Key words:** *Intellectual disability, benefits of physical activity, environment of physical activities, health related variables.*

## 1 The issue

In spite of the fact the term “physical activity” is understanding like “sports activity” Opportunities to engage in physical activity are varied, including work, transport, home activities and during leisure-time across all ages, gender, abilities-disabilities. The most common form of leisure-time physical activity for many people involves participation in gardening, walking, arts – crafts, cooking and exercise and sport. Exercise and sport can contribute to an individual’s health in multiple areas, including their physical, psychological and sociological health, wellbeing in complex even for persons with disabilities. Among people with a mental disability, exercise and sport offers opportunities to engage in experiences that provide multiple benefits. Physical activities (PA), school physical education (PE) and sports are considered an important part of daily life-style and improvement their adaptive skill areas: communication, self-care, home-living, social skills, community use, self-direction, health and safety, functional academics, leisure and work. Understanding the

issue of PA and sports for persons with mental disability (MD) and principles for realization of this is the main intention of presented article.

## **2 Basic terminology: what do we mean by exercise and sport?**

Physical activity is used as an umbrella term to describe all movement activities that are linked with physical loading, using energy through movement. It can be: cooking, walking with dog, ground digging, car repairing, shopping, etc. *Physical (exercise) activities* are a sub-part – linked only with exercising: basic activities like walking-running, crawling, throwing, walking for purpose to walk or hiking, swimming, cycling, stretching, dancing, games playing.

*Physical (exercise) activities* can be divided in 3 basic domains although, these domains are not mutually exclusive and can be mixed:

### **2.1 Sport (means top competitive sport) - individual selection**

Characteristics – predominant purpose is:

- to achieve absolute maximal performance,
- regular systematic and highly organized training (*sports clubs*),
- then spectators participation, emotionality,
- performance, results recording.

Top competitive sport for persons with MD is possible to realize under umbrella of Inas- II (International Association of Sports – Intellectual Impairment, former Federation of Intellectual Disability: FID) and Special Olympics International (SOI).

### **2.2 Physical education – compulsory**

Characteristics – predominant purpose is:

- education from different aspects,
- skills, hygiene, health habits, social-team behavior, etc.,
- regularly organized related to curricula (schools, centers, army-police education, certificate agencies),
- comparison (evaluation) related to defined standards in curricula.

Physical education of persons with MD can be realized related to national school system: public or private schools, governmental and local curricula in special, parallel or inclusive education system.

### 2.3 Recreation activities – individual selection:

Characteristics – predominant purpose is:

- individual (relative) achievements,
- relax, fun, socialization, physical and psychical well-being, improvement,
- no performance recording, no competition – or on relative level, plays competition,
- possible mixing with arts, crafts, music – etc. activities,
- organized or not organized:
  - **fully organized:** by “centers”, municipalities, civic organizations, YMCA – Sokol – Scout organizations, leisure time clubs, ...etc. Organization offers program, regular schedule, facilities-venues, leaders (usually certificate specialists), regular participation of interested persons.
  - **partially organized:** (like before) – any organization or civic organizations – foundations, parents groups, etc. – provide the program for all, usually short time like one day, weekend. Occasional activity – not regular, for all. Everybody can come and participate on his/her own risk. Examples – run activities (Terry Fox Run, Run for Health...), Children Day, Multicultural day, Celebration Days related to some anniversary, family-teams tournaments, etc.
  - **non-organized:** self-decision to exercise, to do something in his/her own time. Usually just families – school mates – friendly or working groups decide and do whatever: (holiday, week-ends as so as working days in leisure time).

This area is not in the center of attention of leading authorities. This is the reason it is touched with a great volunteers' enthusiasms, low professional level and the lack of financial and material support. This is the reason the real sports not economy, room, ability and skills demanding are more popular, more frequent, more developed specially when they are based on national-cultural popularity. The recreational level is organized mostly with parents and civic organizations, humanitarian foundations.

### 3 The involvement of people with intellectual disability in physical activities

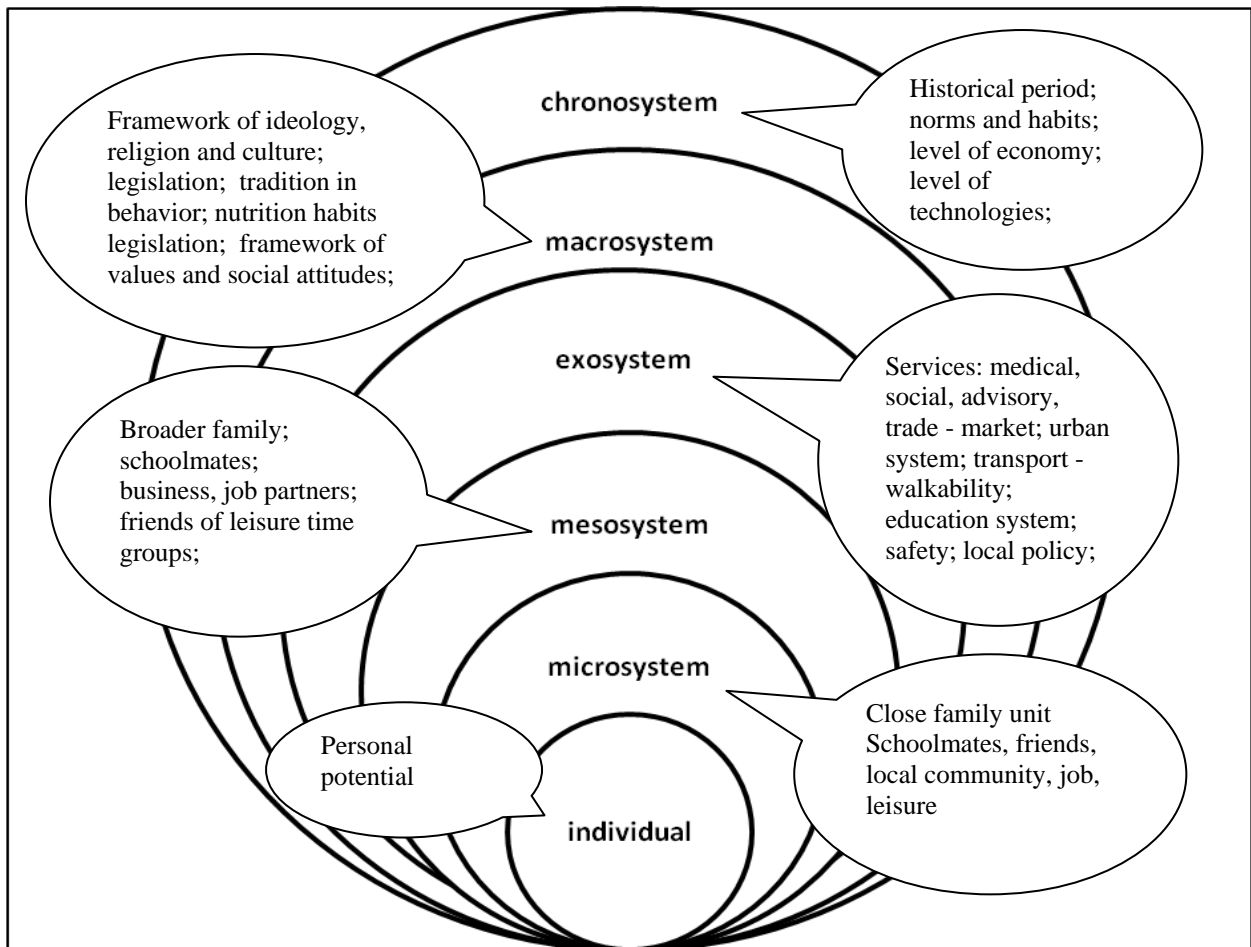
Persons with MD are citizens like other persons it means they have the same right to participate in all types and levels of *physical (exercise)* activities mentioned previously. Specifically, the right to participate in exercise and sport is proclaimed in the United Nations Convention on the Rights of People with Disabilities, Article 30 (UNO, 2007). As wide context of activities is important for healthy life-style and wellbeing of persons with disability

including culture and recreation possibilities the complete Article 30 is presented (Appendix 1).

Related to UNO as so as national legislation all types and forms of PA mentioned above is possible to realize in forms of conditions:

- Separate (special): activities are realized within e.g. special centers, schools, SOI clubs.
- Parallel: general children plays on playground or gym, children with MD play in the same location but different program. Or: two or more different groups in one facility/ venue. Or: sport competition is organized for general sportsmen, after this - sportsmen with with MD use the same arrangement, extra awarding for category without and with MD. PA are realized in parallel system.
- Inclusive : the game with all children/ individuals together in one game, one team.

Every human being is influenced, formed and socialized with environment he/she has been living since early childhood up to terminal life period. The equal principle is naturally functioning during life-span of persons with MD, of course. Individual is determined with biological pre-positions (e.g. somatotype, physiology capacity, quality of perception, cognitive level, etc.). In summary individual capacity is cohesive composition of abilities and limits developed first of all in microsystem (the basic family unit). Even the family context (either biological or foster family) is crucial for participation in leisure PA due to generation transmission, family interests and attitudes, broader environment systems influence the family micro-unit. Related to circles model of environment (Bronfenbrenner, 2001, in Bugatko, Daehler, 2001, 8) participation in physical activities are connected with legislation, governmental and municipality policy, economy status and transport system, sport facility, counselling, education policy and a lot of other components (see Fig. 1). Even the family (and individual) is responsible there is necessary to develop and/or improve the components in all circles in environmental system.



**Figure 1** Circles model of environment (Bronfenbrenner 2001, in Bugatko, Daehler, 2001)

#### **4 Aspects of physical activities advancement**

Participation in physical exercise and sports and long-term adherence of adolescents and adults with intellectual disability are based on developmental aspects – like in general population.

##### ***Evolution aspect***

Four movement phases are considered as the roots of potential mobility (McCall, & Craft, 2000, 152):

1. reflexive movement phase (primary reflexes, postural reflexes);
2. rudimentary movement phase (stability, loco-motor horizontal and upright gait, manipulative abilities);
3. fundamentals movement phase (loco-motor, object control, stability skills);
4. specialized movement phase (including sport specific skills).

Early diagnoses with early intervention (parents, medical and special education care) has to follow as prevention, physiotherapy and/ or other type of therapy. The period lasts since the birth to elementary basic skills period. Elementary movement includes:

- locomotion (walking, running, leaping, jumping, hooping, etc),
- manipulation (rolling, throwing, kicking, bouncing, etc),
- stability (balance, stretching, turning, twisting, swinging, etc).

(Gallahue, & Donnelly, 2003).

### ***Movement standards aspect***

- *Motor quotient*: motor quotient is understood as the standard relevant to usual motor development, motor skills of age children majority. Those standards should be known to parents and has to be known to pediatricians, e.g.: range of locomotion patterns. (Auxter, Pyfer, & Huettig, 2005, 322.) Motor competence (different than movement competence) includes social behavior relevant to PA environment, it means to select appropriate movement act relevant to determine situation (to be motor active or quiet, to walk slowly or fast, to play or stop play, etc.), (Válková, 1995).

- *Movement competence* is a combination of applicable multi-functional knowledge and understanding, motor skills, motor abilities and human attitudes, values and norms, which are necessary for movement growth, optimum physical, psychological and motor development, motor performance, personal fulfilment, overall healthy well-being and employment satisfaction. Basic indicators of movement competence are: mobility of every day life, manual skills, active life-style and its quality, prevention of civilization diseases, postural health, specific PE or sport activities, professional and inter-personal skills. Movement literacy is used as the synonym very often but the idea of mutual influence in context of learning is presented in idea “moving to learn, learning to move” (Talbot, 2005.) It involves a whole range of learning outcomes which go beyond learning how to engage in selected physical activities – social skills; managing competition and cooperation, including of use strategies and tactics; problem solving; applying moral and aesthetic judgments; and knowing when and why different actions and behaviors are appropriate and effective; including the relationship of exercise to health and well-being. Level of support of teacher, coaches, caregivers is relevant to possible limits in participation in exercise and/or sports.

- *Health related fitness*: cardiovascular fitness, strength fitness, BMI and obesity regulation, diabetes (Auxter, Pyfer & Huettig, 2005; McCall & Craft, 2000; Pitetti, et al., 1991; Sherrill, 2003; Valkova, 2011).

### ***Aspect of social development***

Individuals need to both move and relax. The early sports socialization is developed in early childhood in family: various indoor – outdoor activity should be applied, as so as winter and aquatics activity. Not only basic skills and latent learning is developed but attitudes to difficulties, winning-losing values, competition-cooperation is learned through physical institutions and other settings (educational, social and cultural, public, private, commercial and voluntary systems and sub-systems), (Válková, 2000).

Essentially, there are three stages in education:

1. informal education (in family, in life situations);
2. non-formal education (in specific educational and social organizations and institutions);
3. formal education (every schools level). It can be learned, taught and developed (both indirectly and directly) in a range of forms. (McCall, & Craft, 2000). Later – sports is accompanied with transport and travel, visiting cafeterias, independent behavior during competition, daily regime.

### ***Aspect of physical activity or sports program application***

The WHO recommendation related to health prevention there is 30 min. of vigorous or 40 min. moderate intensity of physical activity daily for all children. Specially the children games can saturate the line: *heart – lungs – joy for healthy oriented physical activity*. Games can include either cooperative or competitive skills; social attitudes; different difficultness; complex motor acts with language, mathematic or other cognitive skills development; variants of sports games focused on basic sport skills (decision making, latent skills learning, regulation respecting), (Cheffers, 2010).

The recreation level of physical activities is provided mostly with parents, family members or civic organizations. Parents are very often exhausted with daily care or they have not too much knowledge how to participate in exercises. Civic institutions make effort to organize regular physical activities and/or weekend outdoor activities. Unfortunately sports clubs are not interested in recreation even of individuals with intellectual disabilities.

Favorite and frequent activities are:

- *games*: initiate motivation, emotion, joy. Through games self-awareness, braveness can be developed, safety behaviour can be learned, verbal – nonverbal communication has to be used and developed. Individual activities included in games are more successful than real sports games with strict rules. Examples: games with targeting – throwing, soft arrows, simply ball games, bocce, bowling;
- *loco-motor acts*: walking, swimming, cycling, cross-country skiing;
- *hiking, tourism* (one day, week-end activity, outdoor camps): cycling, rafting, car/bus transport with hiking;
- *dance*: is important domain for every individuals as creative rhythmic movement and imaginative thinking, self-discovery and self-expression. Dance can be realized in different setting: walking, wheelchair, sitting position. “Dance programming is particularly important for people with emotional disturbances, behavioural disorders, and learning disabilities”. (Sherrill, 2003, 411). Adapted dance and dance therapy are to pedagogical approaches with some similarities and some differences related to purpose, content and realization.

However the reality related to opportunities, amount and content of activities depends on social care system, culture habits and activity of people.

Systematic sports participation can be realized through two official international sports networks: Inas-II (International Association – Intellectual Impairment, former FID - Federation of Intellectual Disability) and Special Olympics International (SOI). Both World Olympic Networks (Inas-II, SOI) consisted from national programs. Both Olympic Networks are oriented on persons with intellectual disability, on skills and fitness training from beginners up to high level of advancers in competitive sport. The different philosophy is the criterion how to distinguish the sports direction.

Inas-II is based on “normative approach”, it means on principle of normality: the best sportsmen with ID continues from local level through national level up to world level. Qualifications, limits, records are recognized. Some selected sports and events are included in Paralympic Games.

Special Olympics is based on philosophy of „relative approach“, it means on the right of all individuals with ID to exercise, to train, to compete, to win. It means SOI is open to sportsman with various intensity of ID, even with multiply disability (cerebral palsy,



perception impairment) on the bases of ID. Currently there is about 3,7 million registered sportsmen around the world. SOI can be considered as the most opened sports movement for all with intellectual disability.

Level of support of teacher, coaches, caregivers during exercises and/or sports training is relevant to possible limits in participation in exercise and/ or sports.

- Intermittent Level of Support: team sport, Unified Sports® (team or dyadic sports, the same or less number of partners without ID than sportsmen with ID exercise and compete as one cohesive team).
- Limited Level of Support: traditional Special Olympics sports (e.g.: athletics, swimming, cycling, table tennis, rhythmic gymnastics, skiing).
- Extensive Level of Support: adapted activities based on easy motor test in games design for training, sports design for competition (e.g.: throwing, targetting, walking, standing long jump, 50 m walk).
- Pervasive Level of Support: basic motor activities with support of physiotherapists (MATP - Motor Activities Training Program).

Beside sport training and competition the Special Olympics Healthy Athlete Program is developed. The aim of the program is screening of health problems (the status of vision, teeth, dermatology, physiotherapy, quality of feet and walking, basic fitness, health promotion and health nutrition) as well as advisory and education related to sports and health. Again, the quantity and quality of participation in Special Olympics, quality of training and/or health education depends on volunteers in national (local) programs.

#### **4.1 The benefits of exercise and sport for people with mental disability**

##### ***The psychological benefits of exercise***

Recent physical activity intervention studies which present the auxiliary benefits, such as decreases in anxiety, depression, and increases in self-perception of quality of life, self-efficacy, as well as social competence and self-perception (Carmeli, et al, 2005; Carraro & Gobbi, 2012; Dyken & Cohen, 1996; Dykens et al., 1998; Harada et al., 2011; Heller, Hsieh & Rimmer, 2004; Hutzler & Korsensky, 2010; Johnson, 2009; Lante, Walkley, Gamble & Vassos, 2011; Marks, Sisirak, Heller & Wagner, 2010; Ozer et al., 2012; Valkova, 2000; Vogt et al., 2012). Studies that have assessed mood states, such as an anxiety and depression have had positive results with physical activity reducing anxiety and improvement of

concentration, motivation to be active by a clinically significant amount. The exercise programs ran from 12 weeks to 6 months with minimum of 3 days of exercise a week (Carmelli, 2009; Carro & Gobbi, 2012; Heller et al., 2004). Other studies have found evidence for increased positive mood directly after exercise (Vogt et al., 2012): decreasing anxiety, depression, scare, increasing self-efficacy, social competence (Fox, 1999; Hutzler & Korsensky, 2010; Marks et al., 2010).

Research demonstrating the positive psychological or social impact of exercise derives from a variety of sources including studies that focus specifically on the range of positive outcomes that result from participating in the Special Olympics. Special Olympics program seems to be important program which can improve physical, skill and psycho-social variables of persons with mental disability like sense of success or criticism, skill acquisition, more on task behavior, perception of health related variables (Dykens & Cohen, 1996; Dykens, Rosner & Butterbaught, 1998; Valkova, 2011). In summary, physical exercises and sports can lead to the psychosocial benefit beyond physical improvement. Many advantages to exercise such as increase quality of life, social skills and self-efficacy and decreased anxiety and depressive symptoms have been demonstrated in the literature.

### ***The effects on challenging behavior***

Challenging behaviour is defined as "*...culturally abnormal behaviours of such an intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy, or behaviour which is likely to seriously limit the use of, or result in the person being denied access to ordinary community facilities.*" (Emerson, 2001).

These behaviours can include both negative markers of behaviour (aggression, property destruction, distraction of interpersonal and social relations, self-injury and stereotypical movements, drugs abuse) and positive behaviour in adaptive skills (daily life self-care, hygiene, household activity, safety, communication strategies, family and peers society involvement, will to learn, will to participate in leisure active life style).

Improvement of social competence and decreasing of negative markers after easy exercises like walking, running, jogging was demonstrated by several authors (Allen, 1980; Allison et al., 1991; Bachman & Slyter, 1988; Carr et al., 1999; Dykens & Cohen, 1996; Dykens, Rosner & Butterbaught, 1998; Elliot et al., 1994; Harvey et al., 2009; Marks et al., 2010; Hutzler & Korsensky, 2010; Nankervis, Cousins, Válková, & Macintyre, 2014).

Special Olympics regular program can play important role, too. The Special Olympics has also been associated with positive benefits for the families of participants (Glidden et al.,

2011; Johnson, 2009) specially of sportsmen's mothers (Weiss, 2008) and communities (Harada et al., 2011). Those studies have indicated that positive benefits of participating in SO include reductions in maladaptive behaviors in youth who participate and family satisfaction in youth .

Recent published findings show the issue of challenging behavior (positive changes and development) in relation with physical activities (the type, content, frequency and intensity, length and duration) is not discover enough in research due to complicated methodology and research strategies. In spite of the fact challenging behaviours variables are often poorly managed the long term regular physical activities on moderate level can be considered as crucial predictor of positive adapted behaviour and quality of life (Bachman & Sluyter, 1988; Baumeister & MacLean, 1984; Carr et al., 2002; Eidelman, 2011; Flay al., 2005; Jansma, & Combs, 1987; Johnson, 2009; Lante, et al., 2011; Válková, 2011; Vogt, 2012; Weiss, 2008).

### ***Fitness and health related variables benefits of exercise***

The importance of the role of movement, motor activities and sports of individuals with intellectual disability, for their beneficial development became the main task for the theory and field practice improvement. The topic "mobility", "motor activity", "movement" of different children became important since 70's (Broadhead, & Church, 1984; Cratty, 1972; Dykens, & Cohen, 1996; Eichstaedt, & Lavay, 1992; Rarick, Widdop, & Broadhead, 1970; Roswal, Roswal, & Dunleavy, 1984; Vermeer, et al., 1990; Winnick, & Short, 1985; Wright, & Cowden, 1986).

Engagement in physical activity (PA) is a healthy behavior that has a positive impact on body composition, skeletal health and several aspects of psychological health including self-concept and self-esteem. Cardiovascular variables, strength fitness, optimal breathing, BMI and obesity, diabetes , osteoporoses markers, (in conclusion general fitness) are usually defined as health related variables (Auxter, Pyfer & Huettig, 2005; McCall & Craft, 2000; Pitetti, et al., 1991; Sherrill, 2003; Valkova, 2011). Health benefits include decreased mortality rates; lower incidence of developing diseases; enhancement in conditions such as hypertension, diabetes, and obesity; improvement in mood and well-being; and the lessening of functional decline (Murphy, 2009).

Well documented is issue mental disability, physical activity and other associated problems like congenital heart defects, muscle hypo-tonicity, joint hypermobility, low cardiovascular fitness, and decreased muscle strength (Barnhart & Connolly, 2007; Draheim,

2006; Draheim, Williams, & McCubbin, 2002; Dykens & Cohen, 1996; Wright & Cowden, 1986). Under that circumstance, participation in regular physical activity by people with mental disability is essential for their health, but this is not the reality. Physical inactivity of persons with mental disability related to fitness, health risk, obesity was examined by Fernhall and colleagues (1996), Onywadume (2008); Robertson (2000); Yamaki (2005). Problem of obesity of persons with mental disability is linked with life style of population in general in recent time. Obesity of adult persons with mental disability rates 32 % greater than those for general population (Yamaki, 2005). The supposed determinants are: minimal chance to be accepted in sports clubs except Special Olympics; providing board related to general economy norms with lack of vegetable in residential homes; extreme care of some parents to feed them properly; sedentary behavior and TV watching and electronic amusement (Packer et al, 2006). But biology bases has to be accepted, too (different function of limbic system – the center of happiness and connection with meal, sweet and happiness, somatotype of individuals with e.g. Down syndrome).

It is recommended that individuals should perform 20 minutes of continuous vigorous activity on at least 3 days each week or 30 minutes moderate physical activity (e.g. walking, jogging, cycling) per day to improve cardiovascular health (U.S. Department of Health and Human Services, 2008). Studies indicate that people with mental disability are less engaged in physical activity, are more sedentary, and are less likely to be physically fit than their peers (Foley et al, 2006; Frey et al, 2006; Frey, Stanish, & Temple, 2008; Johnson, 2009; Peterson, Janz, & Lowe, 2008; Longmuir & Bar-Or, 2000; Temple, Frey, & Stanish, 2006; Tudor-Locke, Washington, & Hart, 2009). It is reported (Healthy People, 2020) that 56 % of people with disabilities engage in no leisure time activity compared to 36 % of people without disabilities. Less than 20 % of adults with disabilities engage in vigorous activities that promote fitness or muscular strength (U.S. Department of Health and Human Services, 2008). Stanish, Temple and Frey (2006) found the major sources of physical activity for adults with mental disability were walking and cycling for transport, chores and work, dancing, and Special Olympics. Walking for transport was the most prevalent form of physical activity, but studies suggest the intensity may not be sufficient to meet the minimum recommendations to achieve health benefits (Stanish, Temple, & Frey, 2006; Temple, Frey, & Stanish 2006). Findings of Czech Special Olympians research documented both male and female in adolescent age spent approximately 7,5 % moderate physical activity of daily 24 hours time, it means about 53 minutes per day (Válková, 2010).

In the pilot study by Shields, Dodd and Ablitt (2009), almost 58 % of children with mental disability, particularly with Down syndrome did not perform the recommended amounts of physical activity to maintain good health and none performed the recommended level of continuous vigorous physical activity to enhance cardiovascular fitness. A significant inverse association was found between the amount of activity undertaken and age, with older children completing less activity. Even the finding that people with mental disability have a lower VO<sub>2</sub>peak to those without a disability, and so the levels for moderate and vigorous activity of average general public may not be appropriate for this population (Robertson, 2000).

Pitetti with co-authors (1991) assessed fitness of adult Special Olympics participants. Later (2010) he compared advantages-disadvantages between using classical pedometer, and - accelerometer, in 6-10 years aged children. Pedometer is sensitive for walking records, accelerometer for other activities beside walking. Typical movement of children with mental disability there are different type of movement, not only walking.

#### **4.2 Frequent, recommended activities**

Crucial principle of composing and realizing activities for persons with ID is communication (in any environment, with any leaders). There is not necessary to obtain special extra equipment or facility just understanding each other as because leaders can expect easy different thinking, a lot of speech problems.

Exercising based on natural movement and basic skills should start in early childhood as intervention program pushed with parents (Berdychova, 1969; Gallahue & Donnelly, 2003; McCall & Craft, 2000) as well as in school and adolescent age later. Those activities are typical for inclusive environment (Bielenberg, 2008).

- loco-motor line: crawling – climbing - walking – running – jumping,
- hand-eye coordination (through games): throwing and rolling - targeting,
- hand training: through table games, writing-drawing, self-service, manipulating, throwing – catching,
- individual games: sport “ABC” or “drills”, ball games, board games, sledging - specially in winter-time,
- psychomotor exercises: manipulative skills, body segment experience, hands – limbs – trunk coordination,

- team games: paraschoot games, shuttle-relay games, bocce, table tennis, floorball, 7-side football (both in special and inclusive environment, peer support, unified design in Special Olympics),
- dancing and creative activities both spontaneous with music and controlled,
- yoga exercises, stretching exercises,
- aquatics: games, swimming, canoeing – rafting, with assistance (Lepore, Gayle & Stevens, 2007),
- cycling: with different instruments like adapted bicycles, tandems, tri-cycles, “petra-cycle”,
- outdoor activities: hiking, mountaineering, camping, skiing.

Activities described above are available both for recreation level and as the bases of competitive sport. Both recreational and competitive level of persons with ID can be realized only in leisure time (Auxter, Pyfer & Huettig, 2005; Huetting, Pyfer, & Auxter, 2005).

## **5 Conclusion**

Physical activities as prevention of so called civilized diseases is the right of persons with mental disability and their wellbeing, too. It is not only from humanitarian reason but from economy reason (active persons need less amount of medical and social care including their families). Families, community and professionals has to be prepared to realize strategies leading to participation of persons with mental disability in physical activities.

Aspects how to understand of physical activities for persons with mental disability (evolution aspect, movement standards aspect, aspect of social development, aspect of physical activity and sports program application) can be considered as the principles for healthy life style support. The benefit of exercise and physical activities has been found in influence on psychological, challenging behavior and fitness and health related variables.

### **Appendix 1. Article 30 - Participation in cultural life, recreation, leisure and sport (Quot.)**

1. States Parties recognize the right of persons with disabilities to take part on an equal basis with others in cultural life, and shall take all appropriate measures to ensure that persons with disabilities:

- Enjoy access to cultural materials in accessible formats;

- Enjoy access to television programmes, films, theatre and other cultural activities, in accessible formats;
- Enjoy access to places for cultural performances or services, such as theatres, museums, cinemas, libraries and tourism services, and, as far as possible, enjoy access to monuments and sites of national cultural importance.

2. States Parties shall take appropriate measures to enable persons with disabilities to have the opportunity to develop and utilize their creative, artistic and intellectual potential, not only for their own benefit, but also for the enrichment of society.

3. States Parties shall take all appropriate steps, in accordance with international law, to ensure that laws protecting intellectual property rights do not constitute an unreasonable or discriminatory barrier to access by persons with disabilities to cultural materials.

4. Persons with disabilities shall be entitled, on an equal basis with others, to recognition and support of their specific cultural and linguistic identity, including sign languages and deaf culture.

5. With a view to enabling persons with disabilities to participate on an equal basis with others in recreational, leisure and sporting activities, States Parties shall take appropriate measures:

a. To encourage and promote the participation, to the fullest extent possible, of persons with disabilities in mainstream sporting activities at all levels;

b. To ensure that persons with disabilities have an opportunity to organize, develop and participate in disability-specific sporting and recreational activities and, to this end, encourage the provision, on an equal basis with others, of appropriate instruction, training and resources;

c. To ensure that persons with disabilities have access to sporting, recreational and persons with disabilities have access to services from those involved in the organization of recreational, tourism, leisure and sporting activities. tourism venues;

d. To ensure that children with disabilities have equal access with other children to participation in play, recreation and leisure and sporting activities, including those activities in the school system;

e. To ensure that persons with disabilities have access to services from those involved in the organization of recreational, tourism, leisure and sporting activities.

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