Results Dump

Literature

# Search

**Research query**

("physical activity" OR "exercise" OR "sport\*" OR "fitness") AND ("barrier\*" OR "facilitator\*" OR "determinant\*" OR "influencing factor\*") AND ("adolescent\*" OR "teen\*" OR "youth" OR "young people") AND ("intellectual disability" OR "mental retardation")

* 2015-2024

# Screening

**Exclusion Criteria**

* Targeting a subpopulation of adolescents with ID (e.g., Down Syndrom, athletes)
* Targeting a superpopulation of adolescents (e.g., developmental disabilities)
* Targeting ID levels that are not including mild (e.g., moderate – severe – profound)
* Does not indicate barriers and facilitators to physical activity in adolescents with MID
* Study design is an intervention
* Is a literature review, (snowballing was then allowed from these studies)
* Covering a too-specific contextual environment (e.g., during COVID)
* Not in English
* Not available through institutional access

# Notes on Read Papers

**Barriers and facilitators of PA in adolescents with intellectual disabilities: An analysis informed by the COM-B model** (McDermott et al., 2022)

* Barriers and facilitators informed by multiple stakeholders with triangulation.
* Mild to moderate
* Within the school context, does not claim generalizability
* Method: Braun and Clarke’s guide to assessing the TA research quality
* Big table with lit review based on SEM citing primary contributions
* Table with new insights according to COM-B
* Limitations: confounding factors on PA, such as gender, age and socioeconomic status.
* The range of communicative abilities within the student focus group may have resulted in some students being unable to express their opinion, or indeed it may have prevented a richer discussion between the participants. The need for advocates assisting students may have unintentionally resulted in miscommunication.
* As with all focus group methodologies and purposive sampling, we are unable to treat individual contributions contained within our findings as representative of the wider population. Whilst we obtained rich descriptive data from two schools for children with intellectual disabilities in Northern Ireland, these findings may not be applicable in other similar schools.
* Extracted all B&F from referred primary sources and from this paper as well

**Barriers and Facilitators of Physical Activity Participation among Children and Adolescents with Intellectual Disabilities: A Scoping Review** (Yu et al., 2022)

* The ID level is not exclusively MID
* Cross-sectional research does not indicate causality.
* Results are not generalizable because of the small sample size.
* Few studies use a theoretical framework.
* The relative importance of each factor is uncertain.
* Social ecological model lacks sufficient specificity to guide the conceptualization of a specific problem, identification of appropriate interventions
* Extracted all B&F from referred primary sources

**Correlates of physical activity in children and adolescents with intellectual disabilities: a systematic review** (Sutherland et al., 2021)

* Only six of the 48 correlates were reported in two or more studies, and none of those six were interpersonal or environmental variables.
* this review demonstrates that children and adolescents with ID have different PA behaviours in comparison with their typically developing peers, which
* the influence of age on PA is less present in children and adolescents with ID. This could be attributed to the lower autonomy and greater reliance on parents that children and adolescents with ID have,
* herefore, this trend of generalising interventions from typically developing is not appropriate, and a greater focus should be put on understanding the PA behaviours of children and adolescents with ID.
* Extracted all B&F from referred primary sources

**Understanding low levels of physical activity in people with intellectual disabilities** (Bossink et al., 2017)

* Barriers and facilitators informed by multiple stakeholders
* Thirteen (54%) of the papers focused on people with mild to moderate ID, and two included people with severe to profound ID, other do not report level of ID
* Most are based on questionnaires
* Factors were expressed in different ways among stakeholders. For example, parents mentioned the motivation of people with ID only as a full barrier (Menear, 2007; Temple & Walkley, 2007), while other groups also reported motivation and good understanding of the benefits of physical activity as a possible facilitating factor. In addition, the perceptions of people with ID concerning their characteristics differed from those of other stakeholders.
* Studies addressing the level of ID could be of great value in the adaptation of physical activity programs intended for people with ID in general.
* Did not use primary references because non is according to the inclusion criteria

**Physical activity correlates in children and adolescents, adults, and older adults with an intellectual disability: a systematic review**

* Despite the abundance of evidence of the PA benefits for people with ID, we only found consistent evidence for three correlates reliably being related to PA in adults with ID.
* More research, particularly among young and older people is urgently needed.
* More severe intellectual disability is an important barrier for being active in adults with intellectual disability
* Extracted all B&F from referred primary sources

# Mild Intellectual Disability as Defined by the ICD-11

ICD-11 Definition of Mild Intellectual Disability: In mild disorder of intellectual development, intellectual functioning and adaptive behaviour are found to be approximately 2–3 standard deviations below the mean (approximately 0.1–2.3 percentile), based on appropriately normed, individually administered standardized tests. Where standardized tests are not available, assessment of intellectual functioning and adaptive behaviour requires greater reliance on clinical judgement, which may include the use of behavioural indicators provided in Tables 6.1–6.4. People with mild disorder of intellectual development often exhibit difficulties in the acquisition and comprehension of complex language concepts and academic skills. Most master basic self-care, domestic and practical activities. Affected people can generally achieve relatively independent living and employment as adults, but may require appropriate support.

**Behavioral Indicators of Intellectual Functioning – Children and Adolescents**

* Most can communicate effectively.
* Most can tell or identify their age.
* Most can initiate/invite others to participate in an activity.
* Most can communicate about past, present and future events.
* Most can attend to and follow up to 3-step instructions.
* Most can identify different denominations of money (e.g. coins) and count small amounts of money.
* Most can cross street intersections safely (look in both directions, wait for traffic to clear before crossing, obey traffic signals). In contexts without busy intersections, most can follow socially acceptable rules necessary to ensure personal safety.
* Most can communicate their future goals and participate in their health care.
* Most can identify many of their relatives and their relationships.
* Most can apply existing abilities in order to build skills for future semi-skilled employment (i.e. involving the performance of routine operations) and in some cases skilled employment (e.g. requiring some independent judgement and responsibility).
* Most are naive in anticipating full consequences of actions or recognizing when someone is trying to exploit them.
* Some can orient themselves in the community and travel to new places using familiar modes of transportation.

Literacy/numeracy

* Most can read sentences with five common words.
* Most can count and make simple additions and subtractions.

**Behavioural Indicators of Adaptive Behaviour, Children and Adolescents (6-18 years of age)**

**Conceptual**

* Most will need some help to sustain their attention for a 30-minute period.
* Most can follow 3-step instructions.
* Most will acquire sufficient communication skills to use pronouns, possessives and regular tenses, as well as be able to ask “wh” question (e.g. who, what, where, when or why).
* Many will need support to tell a narrative story or to give someone simple directions. They will also need assistance to explain their ideas using multiple examples, detail short-term goals and steps to achieve them, stay on the topic in group conversations and move from one topic to another.

*Literacy*

* Most will have reading and writing skills that are limited to approximately those expected of someone who has attended 3–4 years of primary/elementary school.

**Social**

* Some may have a more concrete understanding of social situations, and may need support understanding some types of humour (e.g. teasing others), making plans and knowing to let others know about these plans as needed, controlling their emotions when faced with disappointment, and knowing to avoid dangerous activities or situations that may not be in their best interest (e.g. taken advantage of or exploited).
* Some may need some support initiating conversation, organizing social activities with others or talking about shared interests with peers/friends.
* Some may need substantial support to talk about personal things and emotions or understand social cues.
* Most are able to play outdoor sports or other social games in groups, although they need help to play games with more complex rules (e.g. board games).

**Practical**

* Most will learn to perform independently most dressing, toileting and eating skills.
* Most will learn to manage activities of daily living independently, such as brushing teeth, bathing and showering.
* Most will need some support getting around the community and being safe (e.g. although they will know to stay to the side of routes with car traffic, they may continue to need support to check for traffic before crossing a street).
* Many may be vulnerable to being taken advantage of in social situations. They may continue to need some support for telling time, identifying correct day/dates on calendar, making and checking the correct change at the store, and being independent with basic health-maintaining behaviours.
* If available, many can learn to use computers and cell phones for school and play.
* Most will learn basic work skills at nearly the same pace as their same-age peers, but will require greater repetition and structure for mastery.

# Data Extraction from Primary sources

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Author/Year** | **Type of study** | **Sampling Strategy** | **ID level** | **Informants (Sample size)** | **Age of ID group (Sample size)** | **Theory** | **Data collection** |
| (McGarty & Melville, 2018) | Qualitative | Purposive sampling (via schools and sport clubs) | Mild to moderate | Parents (n = 8) | 10 to 18 | Socioecological model | Interviews |
| (Stevens et al., 2018) | Qualitative | Purposive (via schools) | Mild to moderate | Adolescents with ID (n=10) | 16 to 18 | Self-Determination Theory | Interviews |
| (Melbøe & Ytterhus, 2017) | Qualitative | Purposeful sampling (via schools) | ? | Parents (n=20)  Adolescents (n = 10) | 14 to 16 | ? | Interviews |
| (Grandisson et al., 2012) | Qualitative | ? | ? | Adolescents (n=40)  Parents (?)  Rehabilitation staff (n=39) | ? | Disability Creation Process | Interviews  Group interviews  Questionnaire |
| (McDermott et al., 2022) | Qualitative | Purposeful sampling (via schools) | Mild to moderate | Adolescents (n = 7)  Parents (n = 12)  Teachers (n = 9) | 11 to 17 | COM-B | Focus Groups |
| (Gobbi et al., 2018) [35] | Quantitative | Convenience | Mild to moderate | Adolescents with ID | 17.4 ± 1.7  (n = 19) | ? | Accelerometer  Questionnaire |
| (Einarsson et al., 2016) | Quantitative | Convenience (via schools) | Mild to severe | Adolescents with and without ID | 6 to 16  (n=184; 91ID = 93TD) | ? | Accelerometer  Questionnaire |
| (Queralt et al., 2016) | Quantitative | Convenience (via school) | Mild to moderate | Adolescents with ID | 15.3 ± 2.7  (n = 35) | ? | Pedometers |
| (Stanish et al., 2016) | Quantitative | n/a (via schools) | Mild to moderate | Adolescents with and without ID | 13 to 21  (n = 98; 38ID + 60TD) | Social Cognitive | Questionnaire |
| (Pan et al., 2015) | Quantitative | Convenience (via schools) | Mild to total | Adolescents with and with ID and TD | 12 to 17  (n = 80; 40ID + 40 TD) | ? | Accelerometer |
| (Lin et al., 2010) | Quantitative | ?(via schools) | Mild to profound | Adolescents with ID | 16 to 18 (n=350) | ? | Questionnaire |
| (Kozub, 2003) | Mixed methods | ? (via?) | Mental retardation | Adolescents and young adults with ID | 13 to 25  (n = 7) | ? | accelerometers, quantitative observation (CPAF), semi-structured interview |
| (Robertson et al., 2018) | Quantitative | ? (via schools) | Mild to moderate | Adolescents with ID | 13 to 20  (n = 527) | ? | Questionnaire |
| (Maenhout et al., 2024) | Qualitative | Purposive (via schools) | Mild to moderate | Adolescents with ID | 13 to 22 (n=23) | TDF | Co-creation |

Bossink, L. W. M., van der Putten, A. A., & Vlaskamp, C. (2017). Understanding low levels of physical activity in people with intellectual disabilities: A systematic review to identify barriers and facilitators. *Research in Developmental Disabilities*, *68*, 95–110. https://doi.org/10.1016/j.ridd.2017.06.008

Einarsson, I. Þ., Jóhannsson, E., Daly, D., & Arngrímsson, S. Á. (2016). Physical activity during school and after school among youth with and without intellectual disability. *Research in Developmental Disabilities*, *56*, 60–70. https://doi.org/10.1016/j.ridd.2016.05.016

Gobbi, E., Greguol, M., & Carraro, A. (2018). Brief report: Exploring the benefits of a peer-tutored physical education programme among high school students with intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, *31*(5), 937–941. https://doi.org/10.1111/jar.12437

Grandisson, M., Tétreault, S., & Freeman, A. R. (2012). Enabling Integration in Sports for Adolescents with Intellectual Disabilities. *Journal of Applied Research in Intellectual Disabilities*, *25*(3), 217–230. https://doi.org/10.1111/j.1468-3148.2011.00658.x

Kozub, F. M. (2003). Explaining Physical Activity in Individuals with Mental Retardation: An Exploratory Study. *Education and Training in Developmental Disabilities*, *38*(3), 302–313.

Lin, J.-D., Lin, P.-Y., Lin, L.-P., Chang, Y.-Y., Wu, S.-R., & Wu, J.-L. (2010). Physical activity and its determinants among adolescents with intellectual disabilities. *Research in Developmental Disabilities*, *31*(1), 263–269. https://doi.org/10.1016/j.ridd.2009.09.015

Maenhout, L., Latomme, J., Cardon, G., Crombez, G., Van Hove, G., & Compernolle, S. (2024). Synergizing the Behavior Change Wheel and a Cocreative Approach to Design a Physical Activity Intervention for Adolescents and Young Adults With Intellectual Disabilities: Development Study. *JMIR Formative Research*, *8*, e51693. https://doi.org/10.2196/51693

McDermott, G., Brick, N. E., Shannon, S., Fitzpatrick, B., & Taggart, L. (2022). Barriers and facilitators of physical activity in adolescents with intellectual disabilities: An analysis informed by the COM-B model. *Journal of Applied Research in Intellectual Disabilities*, *35*(3), 800–825. Scopus. https://doi.org/10.1111/jar.12985

McGarty, A. M., & Melville, C. A. (2018). Parental perceptions of facilitators and barriers to physical activity for children with intellectual disabilities: A mixed methods systematic review. *Research in Developmental Disabilities*, *73*, 40–57. Scopus. https://doi.org/10.1016/j.ridd.2017.12.007

Melbøe, L., & Ytterhus, B. (2017). Disability leisure: In what kind of activities, and when and how do youths with intellectual disabilities participate? *Scandinavian Journal of Disability Research*, *19*(3), 245–255. https://doi.org/10.1080/15017419.2016.1264467

Pan, C.-Y., Liu, C.-W., Chung, I. C., & Hsu, P.-J. (2015). Physical activity levels of adolescents with and without intellectual disabilities during physical education and recess. *Research in Developmental Disabilities*, *36*, 579–586. https://doi.org/10.1016/j.ridd.2014.10.042

Queralt, A., Vicente-Ortiz, A., & Molina-García, J. (2016). The physical activity patterns of adolescents with intellectual disabilities: A descriptive study. *Disability and Health Journal*, *9*(2), 341–345. https://doi.org/10.1016/j.dhjo.2015.09.005

Robertson, J., Emerson, E., Baines, S., & Hatton, C. (2018). Self-Reported Participation in Sport/Exercise Among Adolescents and Young Adults With and Without Mild to Moderate Intellectual Disability. *Journal of Physical Activity & Health*, *15*(4), 247–254. https://doi.org/10.1123/jpah.2017-0035

Stanish, H. I., Curtin, C., Must, A., Phillips, S., Maslin, M., & Bandini, L. G. (2016). Physical activity enjoyment, perceived barriers, and beliefs among adolescents with and without intellectual disabilities. *Journal of Physical Activity & Health*, *13*(1), 102–110. https://doi.org/10.1123/jpah.2014-0548

Stevens, G., Jahoda, A., Matthews, L., Hankey, C., Melville, C., Murray, H., & Mitchell, F. (2018). A theory-informed qualitative exploration of social and environmental determinants of physical activity and dietary choices in adolescents with intellectual disabilities in their final year of school. *Journal of Applied Research in Intellectual Disabilities: JARID*, *31 Suppl 1*, 52–67. https://doi.org/10.1111/jar.12340

Sutherland, L., McGarty, A. M., Melville, C. A., & Hughes-McCormack, L. A. (2021). Correlates of physical activity in children and adolescents with intellectual disabilities: A systematic review. *Journal of Intellectual Disability Research: JIDR*, *65*(5), 405–436. https://doi.org/10.1111/jir.12811

Yu, S., Wang, T., Zhong, T., Qian, Y., & Qi, J. (2022). Barriers and Facilitators of Physical Activity Participation among Children and Adolescents with Intellectual Disabilities: A Scoping Review. *Healthcare*, *10*(2), Article 2. https://doi.org/10.3390/healthcare10020233

# Barriers and Facilitators to Physical Activity Mapped to the TDF domains

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COM-B construct** | **TDF Domain** | **Constructs** | **PA Barriers** | **PA Facilitators** |
| **Psychological Capability** | **Knowledge**  An awareness of the existence of something | Knowledge (including knowledge of condition/scientific rationale)  Procedural knowledge (Knowledge of task environment) | *Knowledge*   * Insufficient knowledge of the health benefits of PA (Maenhout et al., 2024)   *Procedural knowledge*   * Insufficient knowledge of PA options (Maenhout et al., 2024) | *Knowledge*   * Knowledge of the health and psychological benefits of PA (McDermott et al., 2022) (Grandisson et al., 2012) * Availability of relatable multimedia (e.g., YouTube videos) on the health benefits of PA (Stevens et al., 2018)   *Procedural knowledge*   * Availability of information on the PA options. (Maenhout et al., 2024) * Finding a PA option one likes (Maenhout et al., 2024) |
| **Psychological Skills**  An ability or proficiency acquired through practice | Skills  Skills development  Competence  Ability  Interpersonal skills  Practice  Skill assessment | *Cognitive skills*   * Limited cognitive skills (Maenhout et al., 2024) (McDermott et al., 2022)   *Interpersonal skills*   * Communication difficulties (McGarty & Melville, 2018) (Melbøe & Ytterhus, 2017) (Grandisson et al., 2012) (McDermott et al., 2022) * Some may need support understanding some types of humor (e.g. teasing others) [ICD] * Some may need support to avoid dangerous activities or situations that may not be in their best interest (e.g. taken advantage of or exploited) [ICD] * Some may need some support initiating conversation, organizing social activities with others or talking about shared interests with peers/friends [ICD] * Some may need substantial support to understand social cues. * They need help to play games with more complex rules [ICD] * Many may be vulnerable to being taken advantage of in social situations [ICD]   *Practical skills*   * Inability to navigate unfamiliar areas independently (i.e., parents have to go along the route the first time) (Maenhout et al., 2024) (Grandisson et al., 2012) * Most will need some support getting around the community and being safe (e.g. although they will know to stay to the side of routes with car traffic, they may continue to need support to check for traffic before crossing a street) [ICD] * They may continue to need some support for telling time, identifying correct day/dates on calendar, making and checking the correct change at the store, and being independent with basic health-maintaining behaviors [ICD] | *Cognitive skills*   * Most can communicate effectively [ICD]   *Interpersonal skills*   * Most are able to play outdoor sports or other social games in groups [ICD]   *Practical skills*   * Most will learn to manage activities of daily living independently [ICD] * Most will learn basic work skills at nearly the same pace as their same-age peers, but will require greater repetition and structure for mastery [ICD] * If available, many can learn to use computers and cell phones for school and play [ICD] |
| **Memory, Attention, and Decision Process** The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives | Memory  Attention  Attention control  Decision making  Cognitive overload/tiredness | *Memory and Attention*   * Most will need some help to sustain their attention for a 30-minute period [ICD] * Difficulty in following instructions (McDermott et al., 2022), particularly more than 3-steps [ICD] |  |
| **Behavioral Regulation**  Anything aimed at managing or changing objectively observed or measured actions | Self-monitoring  Breaking habit  Action planning | *Habits*   * Lack of meaningful life habits (Grandisson et al., 2012)   *Action planning*   * Some may need support making plans and knowing to let others know about these plans as needed [ICD] * Forgetting to think about it (Maenhout et al., 2024) * Difficulties with planning PA (e.g., mostly because of dependency on others and goal conflict) (Maenhout et al., 2024) | *Self-monitoring*   * Self-monitoring with step counter/ sport watches (Maenhout et al., 2024) |
| **Physical Capability** | **Physical Skills**  An ability or proficiency acquired through practice | Skills  Skills development  Competence  Ability  Practice  Skill assessment | * Comorbid medical conditions impacting physical capabilities (McDermott et al., 2022) * Physical limitations (McDermott et al., 2022) * Low endurance (Maenhout et al., 2024) * Being in pain (Maenhout et al., 2024) | * Improvement in competence through skill development engaging in PA (Stevens et al., 2018) (McDermott et al., 2022) |
| **Social Opportunity** | **Social Influences**  Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours | Social pressure  Social norms  Group conformity  Social comparisons  Group norms  Social support  Power  Intergroup conflict  Alienation  Group identity  Modelling | *Social support – General*   * Lack of social support (Stevens et al., 2018) (Melbøe & Ytterhus, 2017) * Lack of social connections (McDermott et al., 2022) * Lack of a social network (Stanish et al., 2016) * Having no one to do PA with (e.g., friends, loved ones) (Maenhout et al., 2024) * No guidance during PA/ no practical support (Maenhout et al., 2024) * Preference for sedentary activities (McDermott et al., 2022)   *Social support - Family*   * Dependence on adults (e.g., parents) to initiate PA (Melbøe & Ytterhus, 2017) * Parental fears about safety and bullying. (Stevens et al., 2018) * Parents are over-protective/too worried (Maenhout et al., 2024) * Negative parental influence(McDermott et al., 2022) * Parents are not supportive (Maenhout et al., 2024) * Lack of parental control (Kozub, 2003) * Single-parent household (Robertson et al., 2018) * Workless household (Robertson et al., 2018)   *Social support – School and clubs*   * Difficult relationship with their teacher. (Stevens et al., 2018) * Pairing/group work can result in negative behavior if the wrong children are placed together (McDermott et al., 2022)   *Alienation*   * Social exclusion from peers whereby they do not let them participate alongside them (Melbøe & Ytterhus, 2017) * Being bullied (Robertson et al., 2018) * Parents faced high levels of social exclusion due to having a child with intellectual disabilities which impacted ability to promote and find suitable PA opportunities. (McGarty & Melville, 2018)   *Social support and Group identity/ norms - Peers*   * Friend/peers have power to influence and discourage PA participation (McDermott et al., 2022) * Friends do not engage in PA either (Maenhout et al., 2024) * Preference to meet up with friends (Maenhout et al., 2024) * No or only one close friend (Robertson et al., 2018)   *Modeling*   * Not having a role model (Maenhout et al., 2024) | *Social support - General*   * Teamwork and competitiveness in PA (Stevens et al., 2018) * Developing social connectedness through teamwork (Stevens et al., 2018) * Having relatives and friends of the family living nearby (Melbøe & Ytterhus, 2017) * Social connectedness (McDermott et al., 2022)   *Social support - Family*   * Parent support (Melbøe & Ytterhus, 2017) (McDermott et al., 2022) * Family members can positively influence the PA behaviour of their child/sibling (Grandisson et al., 2012) * Participating with family (McDermott et al., 2022) * Caregiver’s high educational level (Lin et al., 2010)   *Social support – School and clubs*   * Support workers (Melbøe & Ytterhus, 2017) * Being part of a sports club (Maenhout et al., 2024)   *Social support and Group identity/ norms - Peers*   * Building a sense of belonging through teamwork (Stevens et al., 2018) * Being perceived as cool, fitting in with their peers (McDermott et al., 2022) * Participating with friends and peers (McDermott et al., 2022) * Positive social interaction with peers (Robertson et al., 2018) * Spending time with friends (Robertson et al., 2018)   *Modeling*   * Having a role model (Maenhout et al., 2024) |
| **Physical Opportunity** | **Environment context and resources** | Environmental stressors  Resources/material resources  Organisational culture/climate  Salient events/critical incidents  Person × environment interaction Barriers and facilitators | *Organizational*   * Many inclusive clubs and programs were closing due to a lack of funding. (McGarty & Melville, 2018) * Lack of information on inclusive PA opportunities (Maenhout et al., 2024) * Lack of choice in the activities they participate in (Maenhout et al., 2024) * Lack of provision of PA opportunities through after school clubs/ societies. (Maenhout et al., 2024) * Lack of variety in organized PA opportunities (McDermott et al., 2022) (Maenhout et al., 2024) * Reliance on school to engage in PA. (McDermott et al., 2022) * Specific organizations for people with disabilities are too confronting (Maenhout et al., 2024) * Many inclusive clubs require travel outside of the local area (McGarty & Melville, 2018) * Lack of knowledge and understanding from coaches. (McGarty & Melville, 2018) * Staffing levels and access to support staff can restrict the types of PA available to students. (McDermott et al., 2022) * Timetabling & a lack of free time at schools (McDermott et al., 2022)   *Resources*   * Lack of material/equipment (Maenhout et al., 2024) * Lack of space at home (Maenhout et al., 2024) * The MUST that comes with entering into a contract (e.g. membership in the gym, feeling obliged by being stuck to a contract) (Maenhout et al., 2024) * Personal finances may mean some PA is not accessible for some people. (Stevens et al., 2018) * Too expensive (Maenhout et al., 2024) * Lack of public transportation (Kozub, 2003) * A lack of local facilities and transport (Stevens et al., 2018) * Often rely on transport and assistance to engage in PA (Melbøe & Ytterhus, 2017) * Living remotely (Melbøe & Ytterhus, 2017) * Costs and transportation required to attend PA programs (Grandisson et al., 2012) * Transport issues (i.e., the location is too far to get there on his/her own, so parents have to bring adolescent) (Maenhout et al., 2024)   *Person x Environment*   * Too crowdy (e.g., in a gym, in the pool, etc.) (Maenhout et al., 2024) * Unsafe environment (e.g., busy roads) (Maenhout et al., 2024) * Home life (Stevens et al., 2018) * Leisure time PA involved mainly informal activities, very few engaged in formal activities. (Melbøe & Ytterhus, 2017) * Participation in team sports was rare. (Melbøe & Ytterhus, 2017) * School hour ( vs leisure time) (Einarsson et al., 2016) * Weekend (vs school days) * (Queralt et al., 2016) * No time/already have other things to do (Maenhout et al., 2024)   *Environmental stressors*   * Bad weather (e.g., too cold, rainy, etc.) (Maenhout et al., 2024) * The weather impacts upon ability to engage in PA. (Stevens et al., 2018) | *Organizational*   * The benefits of inclusive clubs encouraged parents to promote PA, with improvements in confidence being consistently noted. (McGarty & Melville, 2018) * PE offered opportunity to try different sports and for some this was their only chance to engage in PA. (Stevens et al., 2018) * The availability of practical support is important to integrate children with intellectual disabilities into sports. (Grandisson et al., 2012) * Sports clubs should have procedures in place to help integrate intellectually disabled members into the club. (Grandisson et al., 2012) * The availability of adapted equipment may facilitate the participation in sports of individuals with intellectual disability. (Grandisson et al., 2012) * Using the existing infrastructure to promote PA (McDermott et al., 2022) * Creating the opportunities to be physically active during the school day (McDermott et al., 2022) * Creating the culture and policies to mandate additional PA (McDermott et al., 2022) * Introducing cross curricular PA initiatives * The school has been proposed as the ideal setting in which to promote PA (McDermott et al., 2022) * Inclusive PE programs (Gobbi et al., 2018) * Attending PE classes and participating PA during recess (Einarsson et al., 2016) (Queralt et al., 2016) (Pan et al., 2015) * An organized activity (Maenhout et al., 2024) * Availability of support and information for parents to help their child to engage in PA. (Grandisson et al., 2012)   *Resources*   * Affordable activities (Maenhout et al., 2024) * Being able to do physical activity at home (Maenhout et al., 2024) * Safe environment (Maenhout et al., 2024) * Having transport (Maenhout et al., 2024) * Having the right material/equipment (Maenhout et al., 2024) * Having enough space at home (Maenhout et al., 2024) * TikTok (i.e., imitate and create dances) (Maenhout et al., 2024) * Music (Maenhout et al., 2024)   *Environmental stressors*   * Nice weather (Maenhout et al., 2024) * Attractive environment (e.g., green) (Maenhout et al., 2024) |
| **Automatic Motivation** | **Reinforcement** | Rewards (proximal/distal, valued/not valued, probable/improbable)  Incentives  Punishment  Consequents Reinforcement Contingencies Sanctions | *Reinforcement*   * Being instructed to take part in PA can make it seem like a chore (McDermott et al., 2022) * Preference for sedentary activities (McDermott et al., 2022) | *Rewards & Incentives*   * Incentives and rewards for participation (McDermott et al., 2022) * (Maenhout et al., 2024) * Gamification (Maenhout et al., 2024)   *Consequences*   * Development of motor, social and cognitive abilities. (Grandisson et al., 2012) (McDermott et al., 2022) (Stevens et al., 2018) * Improved Behavioural regulation with PA (McDermott et al., 2022) * Improvements in body composition, strength and general health (McDermott et al., 2022) * Improvements in academic performance (McDermott et al., 2022)   *Reinforcement*   * Providing stimuli to promote engagement (McDermott et al., 2022) * Being encouraged (Maenhout et al., 2024) |
| **Emotion**  A complex reaction pattern, involving experiential, behavioral, and physiological elements, by which the individual attempts to deal with a personally significant matter or event | Fear  Anxiety  Affect  Stress  Depression  Positive/negative affect  Burn-out | * Pairing/group work can result in negative behavior if the wrong children are placed together (McDermott et al., 2022) * Competitive elements * Too much stress, too much on the mind (Maenhout et al., 2024) * Disliking PA Maenhout et al., 2024) * Tired, no energy (Maenhout et al., 2024) * Do not like to sweat (Maenhout et al., 2024) * Afraid of getting hurt (Maenhout et al., 2024) * Some may need support controlling their emotions when faced with disappointment [ICD] | * Students enjoy participating in PA that they find fun and enjoyable. (Stevens et al., 2018) * PA is seen as providing opportunities to have fun. (Grandisson et al., 2012) * Enjoyment of PA (Stanish et al., 2016) * Feeling happy during and after exercise (Maenhout et al., 2024) |
| **Reflexive Motivation** | **Social Role and Identity** | Professional identity  Professional role  Social identity  Identity  Professional boundaries  Professional confidence  Group identity  Leadership  Organizational commitment | *Social/ Group identity*   * Friends do not engage in PA either (Maenhout et al., 2024)   *Organizational commitment*   * Home life (Stevens et al., 2018) * No time/already have other things to do (Maenhout et al., 2024) | *Social/ Group Identity*   * Teamwork and competitiveness in PA encouraged many to participate. (Stevens et al., 2018) Developing social connectedness through teamwork and building a sense of belonging. (Stevens et al., 2018)   *Leadership*   * Providing opportunities for autonomy through leadership can encourage some students, whilst others may feel anxious and nervous if tasked with leading their peers. (Stevens et al., 2018) |
| **Beliefs about capabilities**  Acceptance of the truth, reality or validity about an ability, talent or facility that a person can put to constructive use | Self-confidence  Perceived competence  Self-efficacy  Perceived behavioral control  Beliefs  Self-esteem  Empowerment  Professional confidence | *Self-efficacy*   * Feeling that own lacks the necessary skills required (Stevens et al., 2018) (McDermott et al., 2022) (Stanish et al., 2016)   *Self-esteem*   * Low self-image (McDermott et al., 2022) * Too shy to join a sports club (Maenhout et al., 2024) * Insecure or ashamed about weight/body shape (Maenhout et al., 2024) | *Self-efficacy*   * Participants described their intrinsic motivation and increased interest to participate in activities for which they have high self-efficacy and perceive themselves to be good. (Stevens et al., 2018) (Grandisson et al., 2012) (Stanish et al., 2016) * Enabling students to experience progression and competence within PA (McDermott et al., 2022)   *Self-esteem*   * Increased confidence through PA (Maenhout et al., 2024) |
| **Intentions**  A conscious decision to perform a behavior or a resolve to act in a certain way | Stability of intentions  Stages of change model Transtheoretical model and stages of change | * No motivation/no desire to engage in PA (Maenhout et al., 2024) * Little intention of changing existing behaviour (low PA-levels) (Maenhout et al., 2024) * Preference for social media, Netflix, gaming, YouTube, etc. at home (Maenhout et al., 2024) * Preference for sedentary activities (McDermott et al., 2022) | * Preference of PA (Lin et al., 2010) * Desire to lose weight (Einarsson et al., 2016) * Have the urge to look good (Maenhout et al., 2024) * Motivation to engage in PA (Maenhout et al., 2024) |
| **Goals**  Mental representations of outcomes or end states that an individual wants to achieve | Goals (distal/proximal)  Goal priority  Goal/target setting  Goals (autonomous/controlled)  Action planning Implementation intention | * Difficulty in setting up a goal due to a lack of knowledge about PA-options (Maenhout et al., 2024) * They will also need assistance to detail short-term goals and steps to achieve them [ICD] | * Mental representations of the end state that an individual wants to achieve (i.e., working towards a dream) (Maenhout et al., 2024) * Most can communicate their future goals and participate in their health care [ICD] |
| **Optimism**  The confidence that things will happen for the best or that desired goals will be attained | Optimism  Pessimism  Unrealistic optimism Identity | *Pessimism*   * Disliking PA Maenhout et al., 2024) | *Optimism*   * Positive attitude towards physical activity (Lin et al., 2010) * PA is seen as providing opportunities to have fun. (Grandisson et al., 2012) * Enjoyment of PA (Stanish et al., 2016) |
| **Beliefs about consequences**  Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation | Beliefs  Outcome expectancies  Characteristics of outcome expectancies  Anticipated regret  Consequents | *Outcome expectancies*   * Do not like to sweat (Maenhout et al., 2024) * Afraid of getting hurt (Maenhout et al., 2024) | *Outcome expectancies*   * Opportunity to develop motor, social and cognitive abilities. (Grandisson et al., 2012) * Improvements in body composition, strength and general health (McDermott et al., 2022) * Improvements in academic performance (McDermott et al., 2022) * Desire to lose weight (Einarsson et al., 2016) |

# Takeaways

* **Inconsistent and unranked findings:** the identified factors influencing PA behavior among adolescents with ID are not consistent across the studies. Few factors are mentioned in more than one study. Moreover, the relative importance of each factor is not addressed. 🡪 research is required to find the key factors to be targeted in health interventions.
* **Level of ID**: most studies target a population with intellectual disability, but not exclusively with MILD intellectual disability. Most studies included include ID levels from mild to moderate. Note that according to the ICD-11 definition: Most people with mild ID can master basic self-care, while only some people with moderate ID can. Moreover, most affected people with moderate ID require considerable and consistent support in order to achieve independent living and employment as adults. This may overestimate the difference between the factors influencing PA in adolescents with mild ID compared to TD.
* **ID vs typically developing peer:** many factors are common in the two groups. This study does not aim to compare prevalence of factors in these two groups, but we can argue about it in the discussion.
* **Generalizability:** Most studies explicitly mention that their findings are not representative of the target population. For example: “As with all focus group methodologies and purposive sampling, we are unable to treat individual contributions contained within our findings as representative of the wider population. Whilst we obtained rich descriptive data from two schools for children with intellectual disabilities in Northern Ireland, these findings may not be applicable in other similar schools.” We also did not obtain representative results.
* **Limited participation of adolescents in literature studies:** These studies also struggled to get rich data from students. For example: “The range of communicative abilities within the student focus group may have resulted in some students being unable to express their opinion, or indeed it may have prevented a richer discussion between the participants. The need for advocates assisting students may have unintentionally resulted in miscommunication.”