

TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

# INCLUSIVE SPORT CONFERENCE 2021

**DATE & TIME**  
**16 TO 18 MARCH 2021**  
**9AM - 5PM**



Host



Co-host





# **Fostering an active lifestyle for children with disability**

From evidence to practice

Inclusive Sport Conference, 16-18 March 2021

*Micheal Lim | Head & Principal Clinical Exercise Physiologist | Sports Medicine Service, KK Women's and Children's Hospital*

## **OUTLINE**

- Physical activity & health in children with disabilities
  - Are children with disability active enough?
  - Need to focus on promoting physical activity during childhood
- Barriers and facilitators to PA participation
- Strategies to encourage PA participation

# PHYSICAL ACTIVITY & HEALTH IN CHILDREN WITH DISABILITIES

## Importance and benefits of an active lifestyle

Improve physical fitness

Improve health-related fitness

Reduce health risks

Improve coordination

Skill development & mastery

Improve attention

Improve social-behavioural skills

Improve self-esteem & self-efficacy



# PHYSICAL ACTIVITY & HEALTH IN CHILDREN WITH DISABILITIES

Specific benefits for children with disability / special needs

Improve physical fitness

Improve health-related fitness

Reduce health risks

Improve coordination

Skill development & mastery

Improve attention

Improve social-behavioural skills

Improve self-esteem & self-efficacy

Optimise physical function

Reverse deconditioning

Prevent chronic disease

Mediate psychosocial impact

Develop lifeskill competency

Improve socialisation

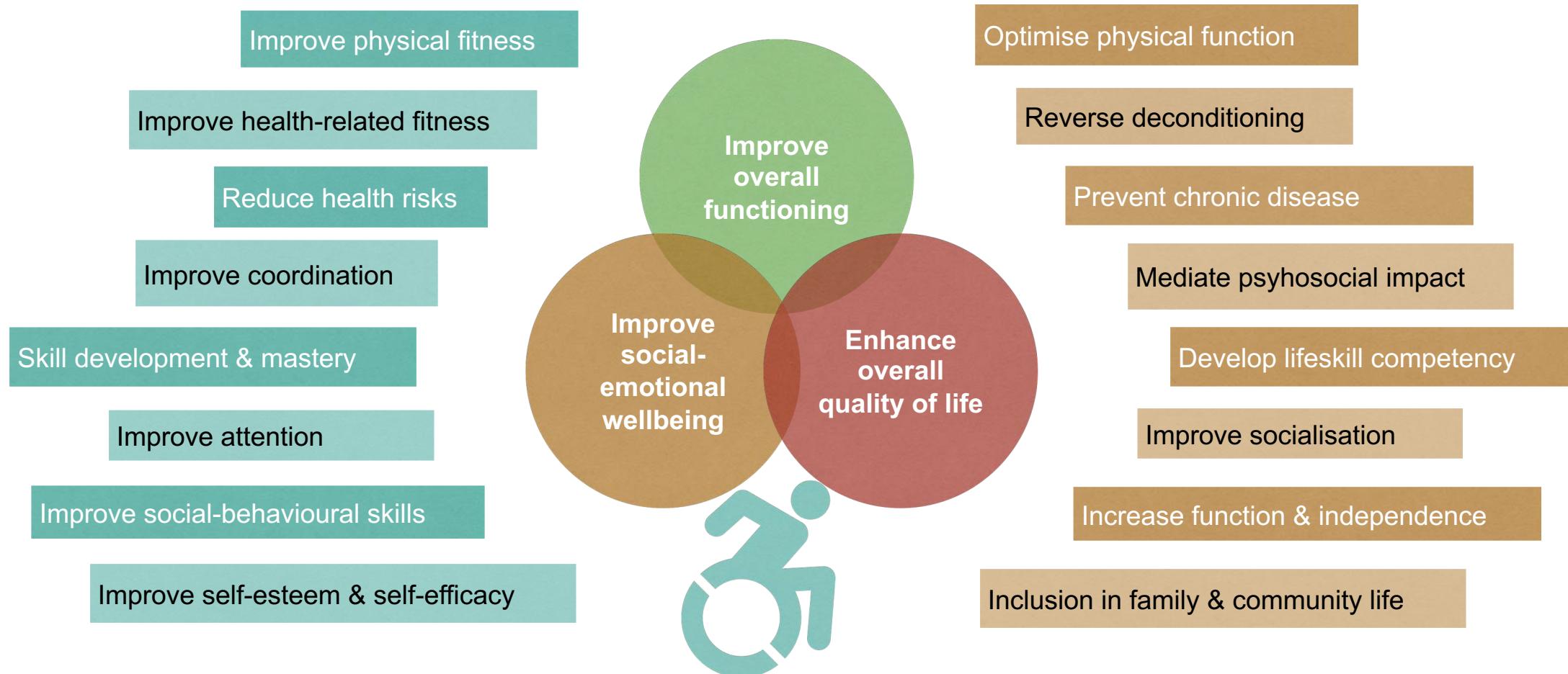
Increase function & independence

Inclusion in family & community life



# PHYSICAL ACTIVITY & HEALTH IN CHILDREN WITH DISABILITIES

Specific benefits for children with disability / special needs



# How active are our children with disability?



# PA GUIDELINES FOR CHILDREN WITH DISABILITIES

## WHO Physical Activity Guidelines 2020



# ARE CHILDREN WITH DISABILITY ACTIVE ENOUGH?

Levels of PA participation in children with disability

Youths with physical and sensory disabilities  
16-24% meet MVPA  
Girls < Boys  
Informal > Formal activities



Typically developing youths  
55% meet MVPA  
Girls < Boys

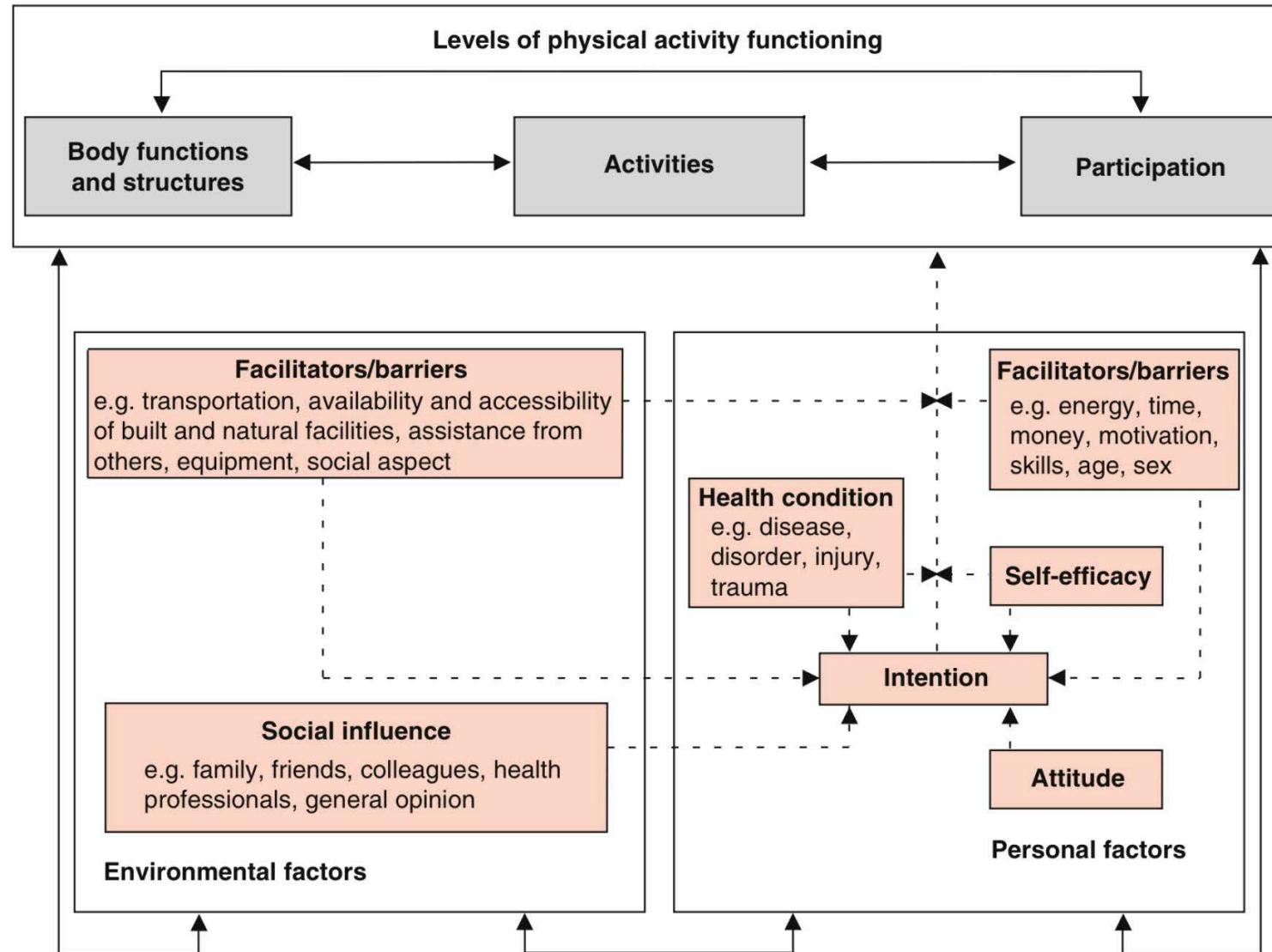
Children and youths with disabilities are not immune to the secular trends of inactive lifestyle!

## NEED TO FOCUS ON PROMOTING PHYSICAL ACTIVITY DURING CHILDHOOD

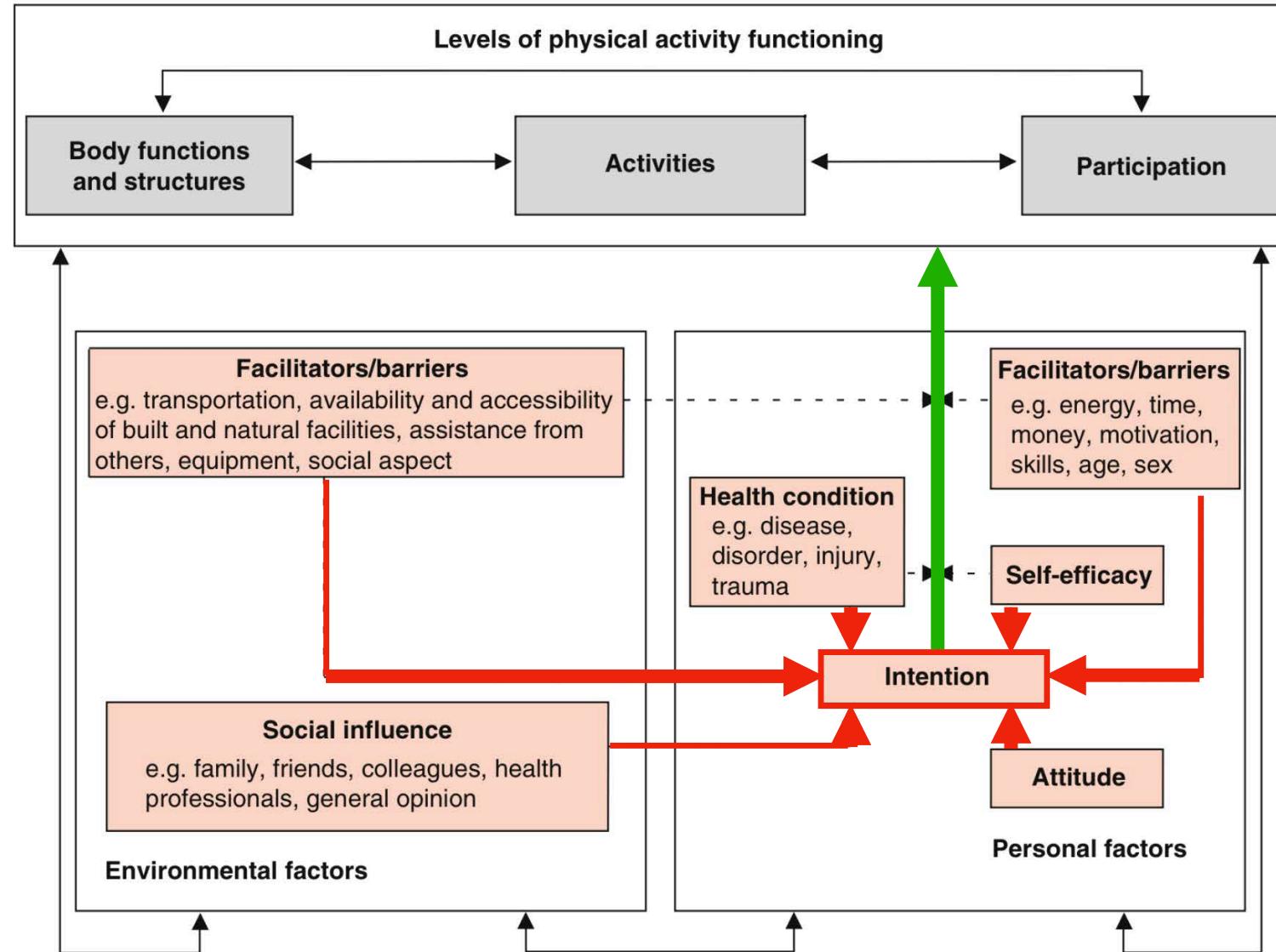
**Early intervention matters!**

- Childhood is period of physical and cognitive development
  - Participation in play, recreation and sport has a positive impact on overall growth and development and optimises health
- A critical period when children and youth develop self-concept, attitudes and behaviours that they will likely transfer into adulthood
  - A time which child's habits are formed and family's lifestyle habits are open to changes and adaptations
  - Long term impact on functioning and health in adulthood
- Early investment in their health is important!!

## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS



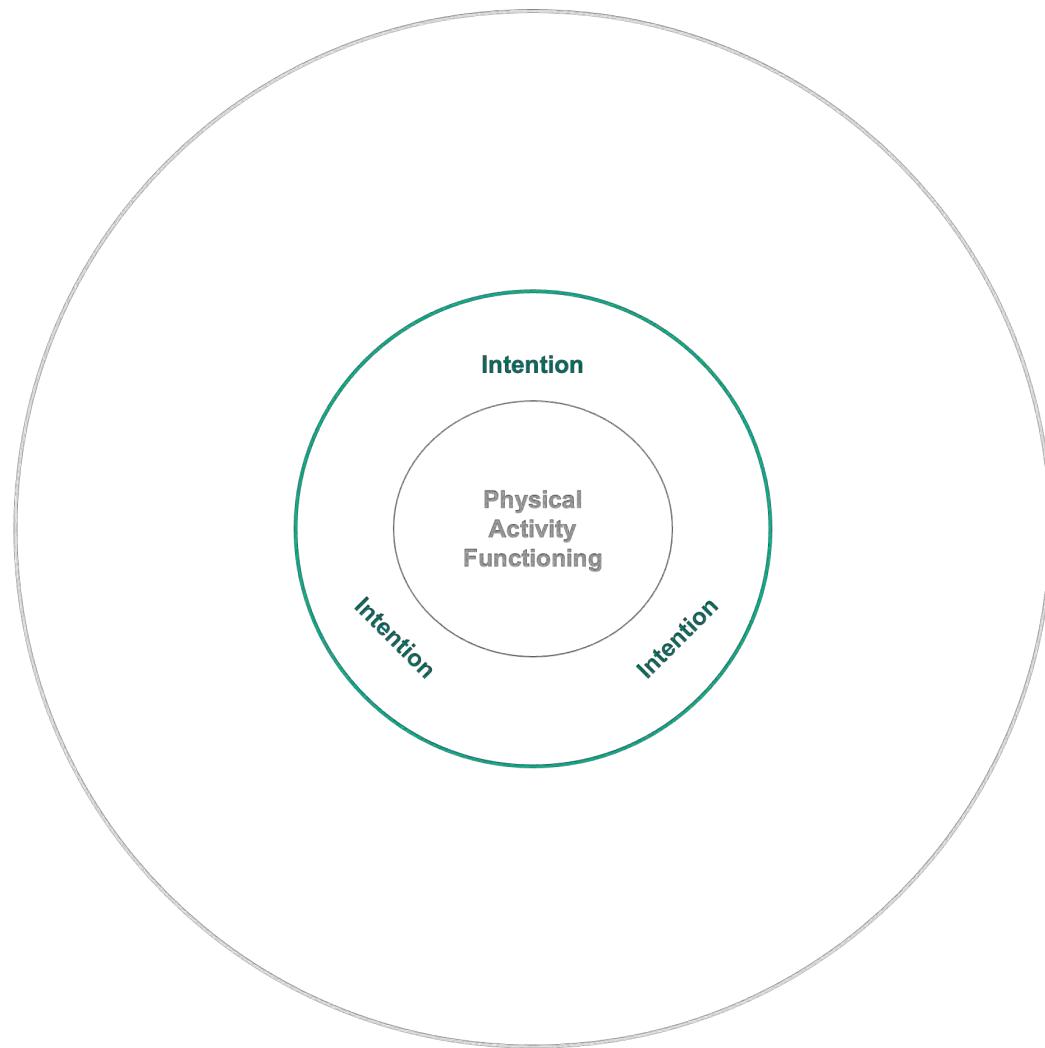
## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

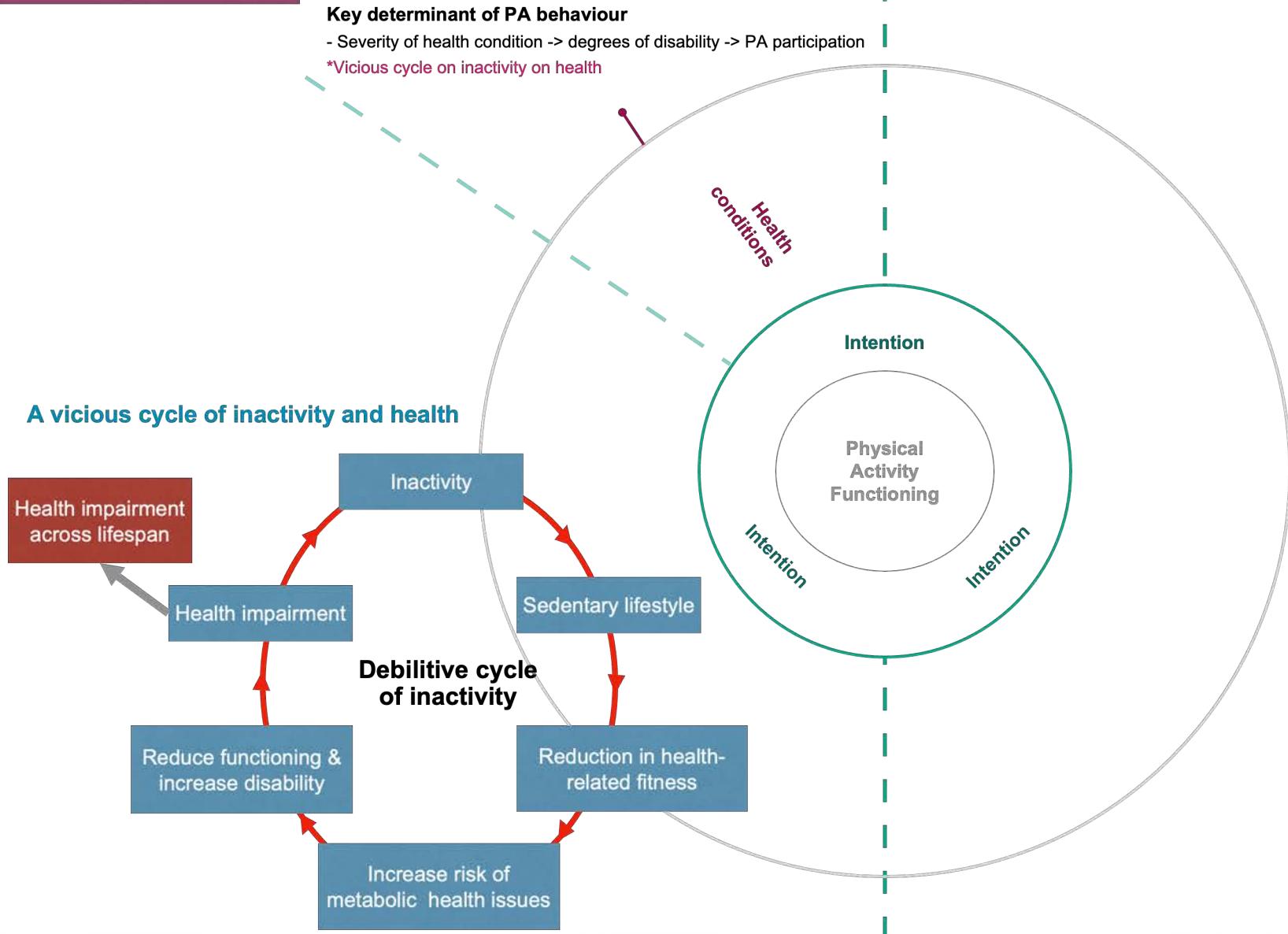
Environmental factors



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

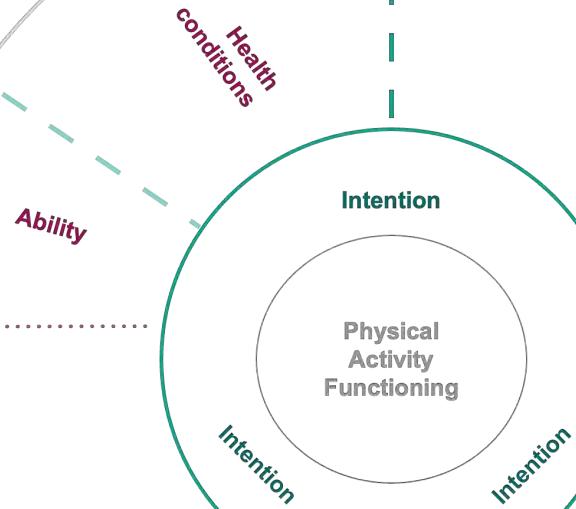
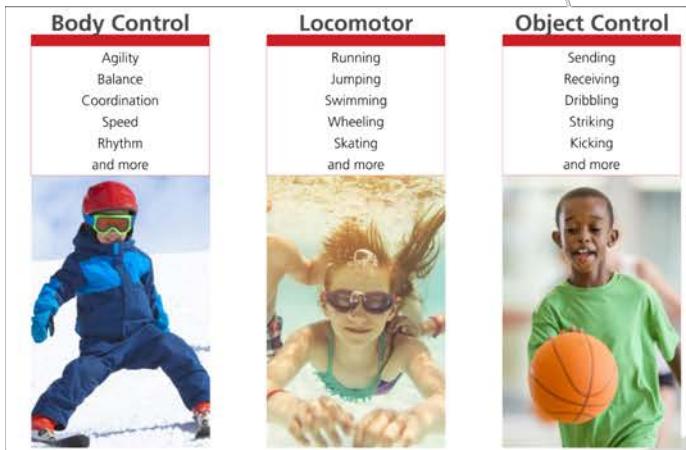
Personal factors

Environmental factors

**Lack of skills / ability can have varying impacts**

- reduce options for physical activity participation
- sense of frustration -> loss of confidence

\*Build physical literacy from a young age. Skill gap widens as child gets older, when sports become more competitive



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

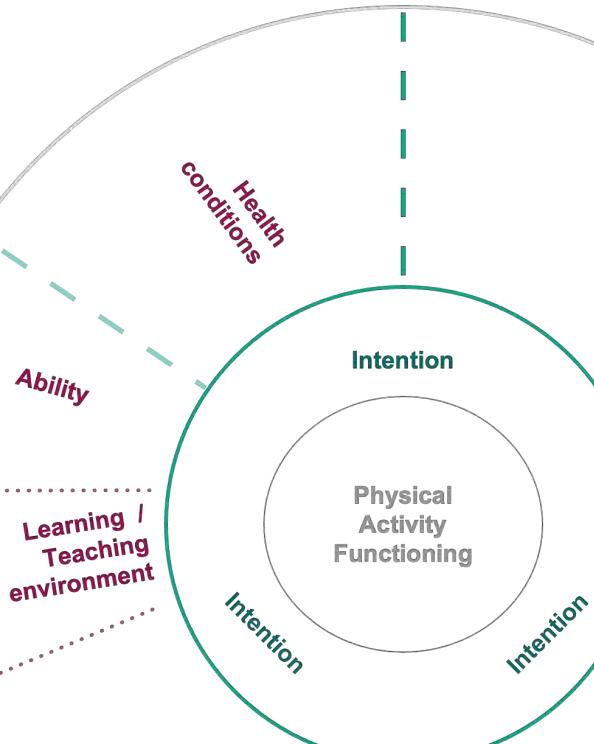
Personal factors

Environmental factors

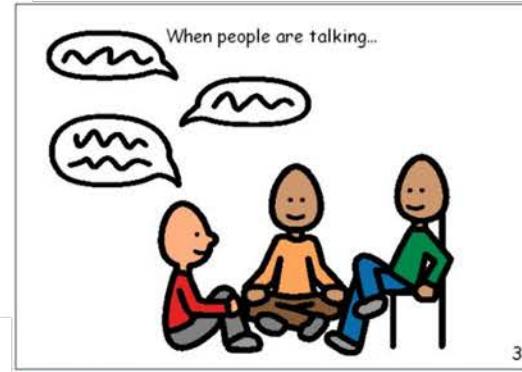
### One size does not fit all

- lack of developmentally (disability) appropriate learning environment can affect skill development, **reducing opportunities for skill mastery**
- lack of adapted rules can lead to **negative experiences**, affecting enjoyment and long-term adherence

**\*Success hinges on ability to adapt teaching methods, modify activities to include child with disability**



Arrival at school		
1		Take off coat (scarf, mittens, boots and hat)
2		Open Backpack
3		Take out work
4		Take out lunch
5		Hang up coat
6		Hang up backpack



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



### Child's ability to cope is vital

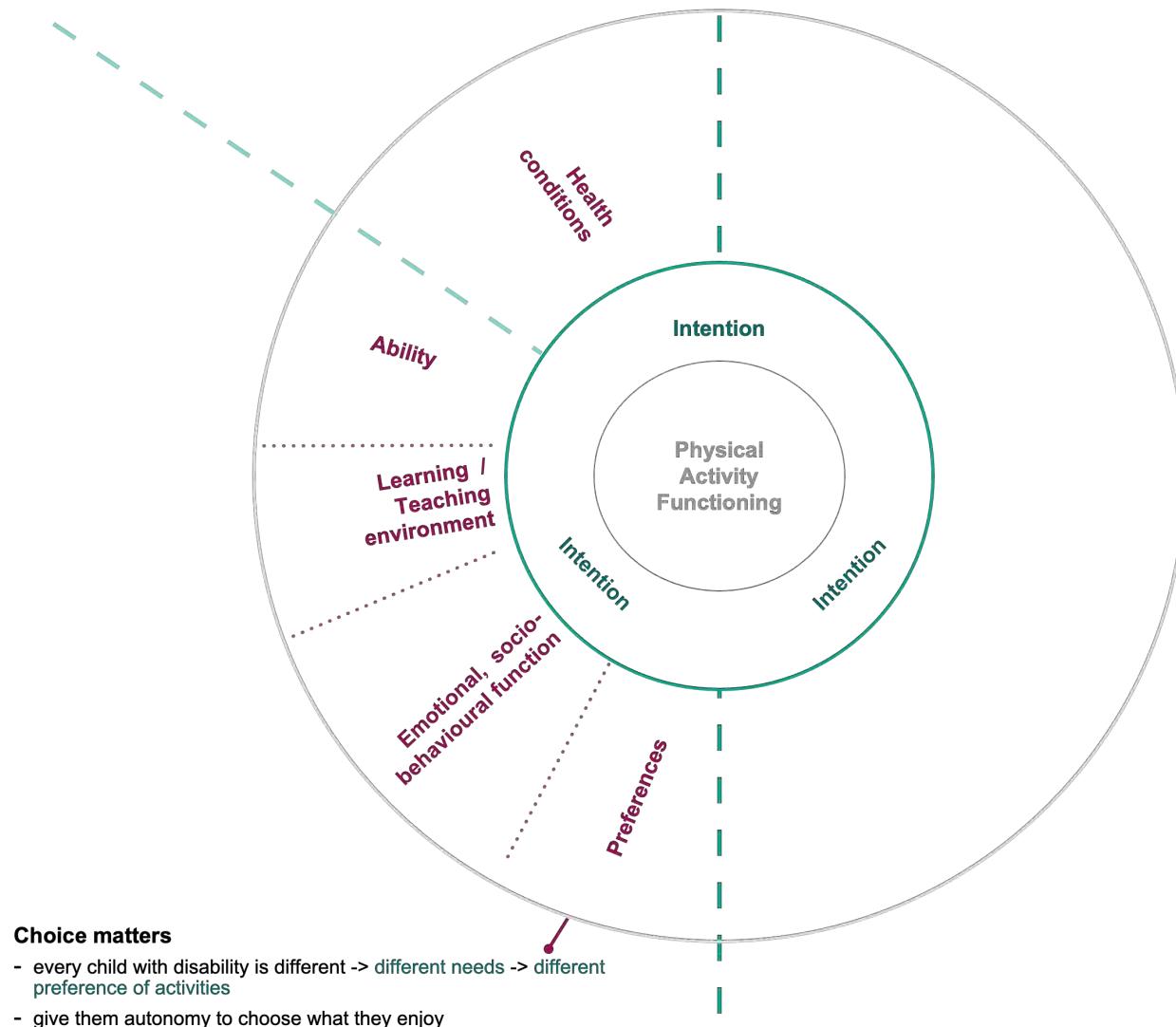
- attention deficit -> reduce attention to tasks, inability to process instructions -> affect skill development / engagement experience
- unforeseeable triggers -> resistance to participation (new activities) or cooperation

\*Provide segregated activities before integration into group activities.

## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



## **TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS**

Personal factors

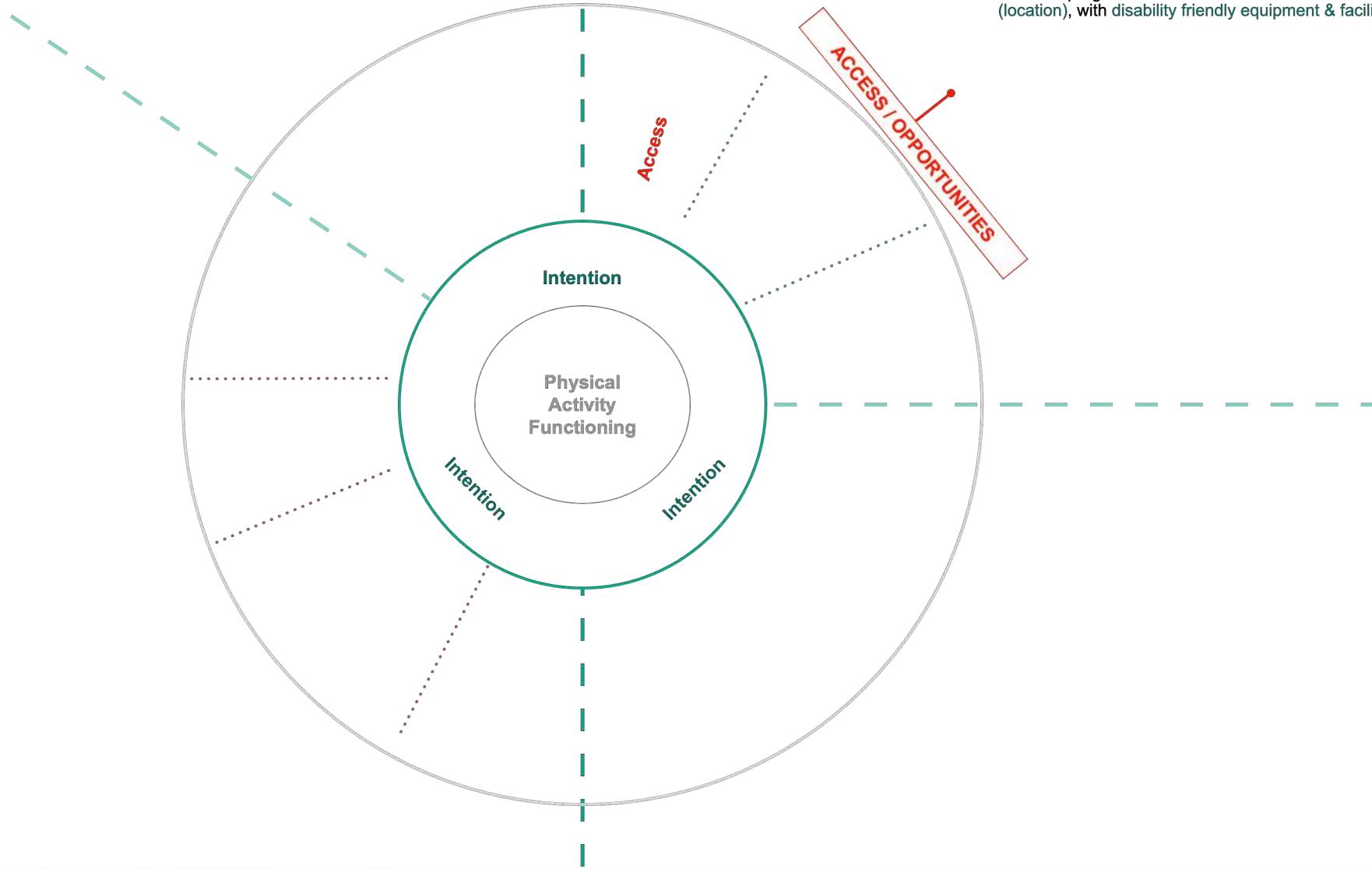
Environmental factors



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

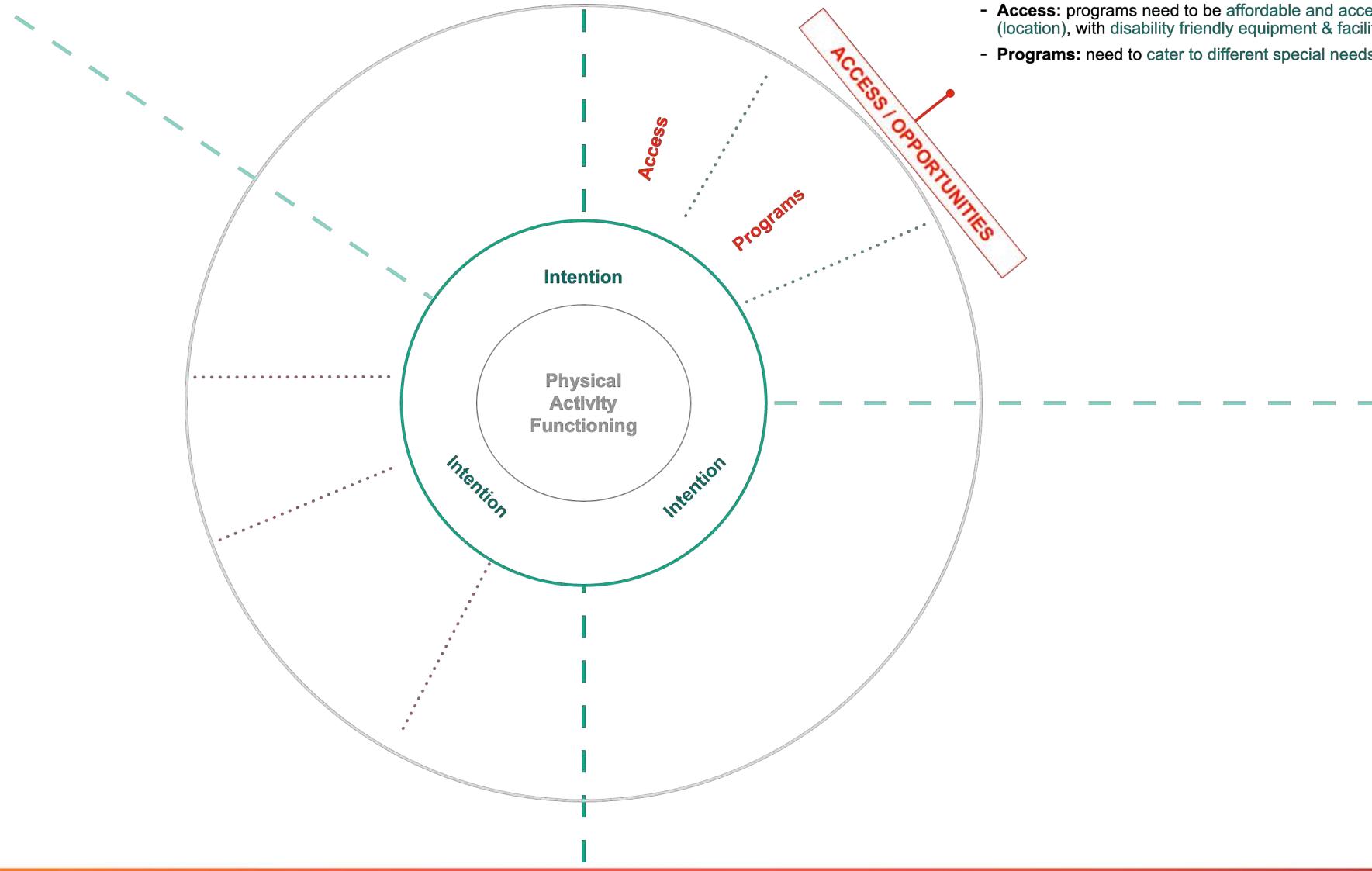
Environmental factors



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

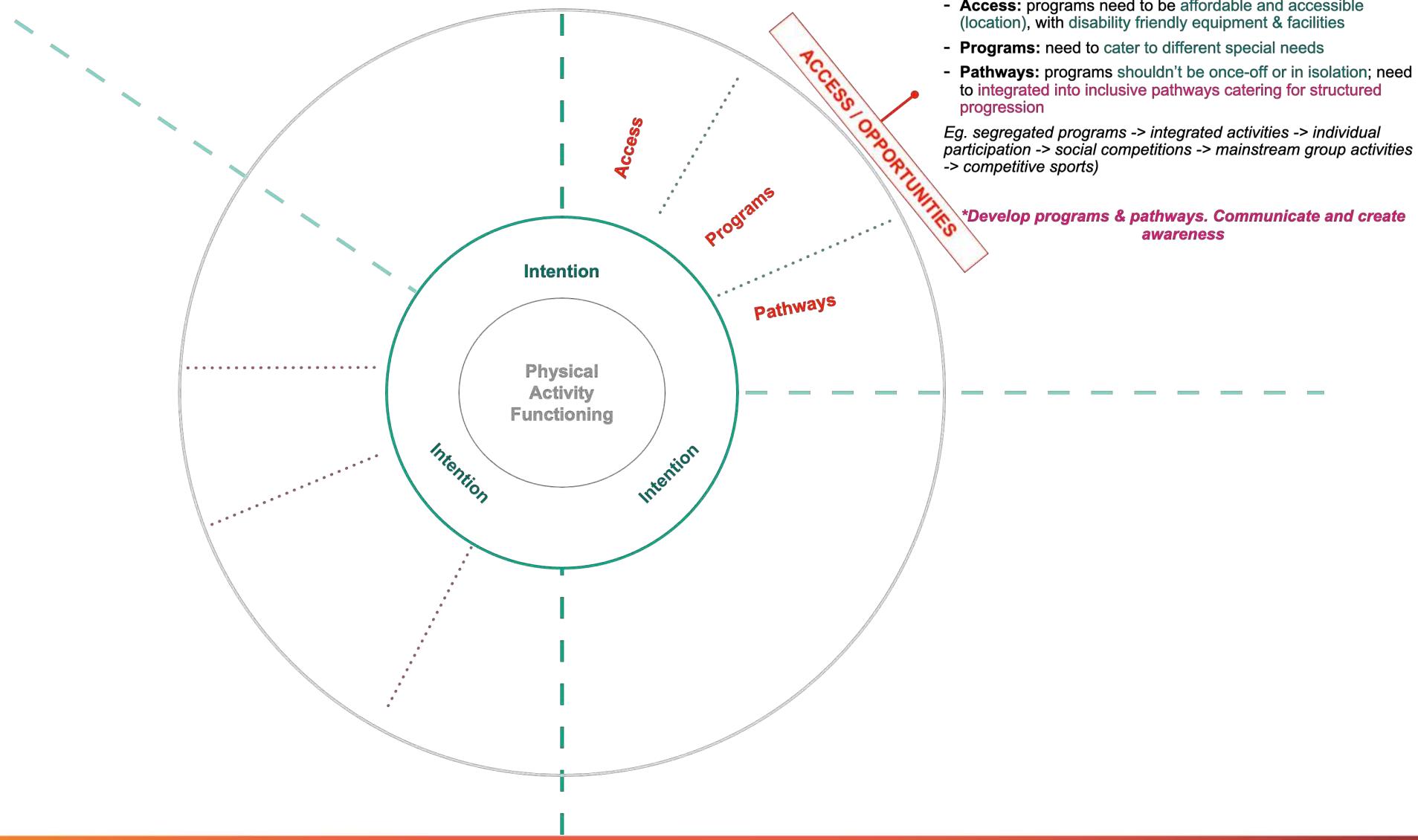
Environmental factors



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

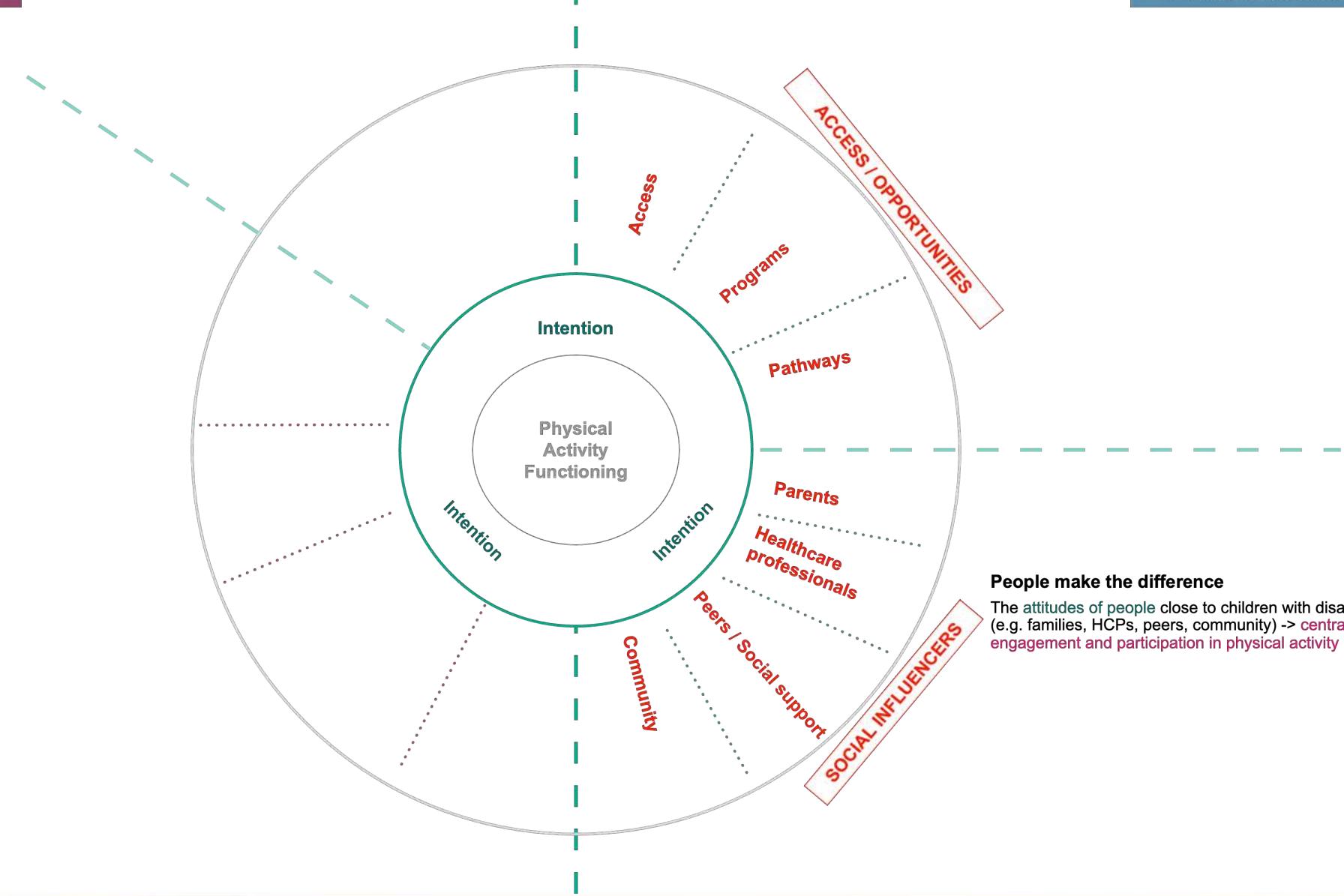
Environmental factors



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

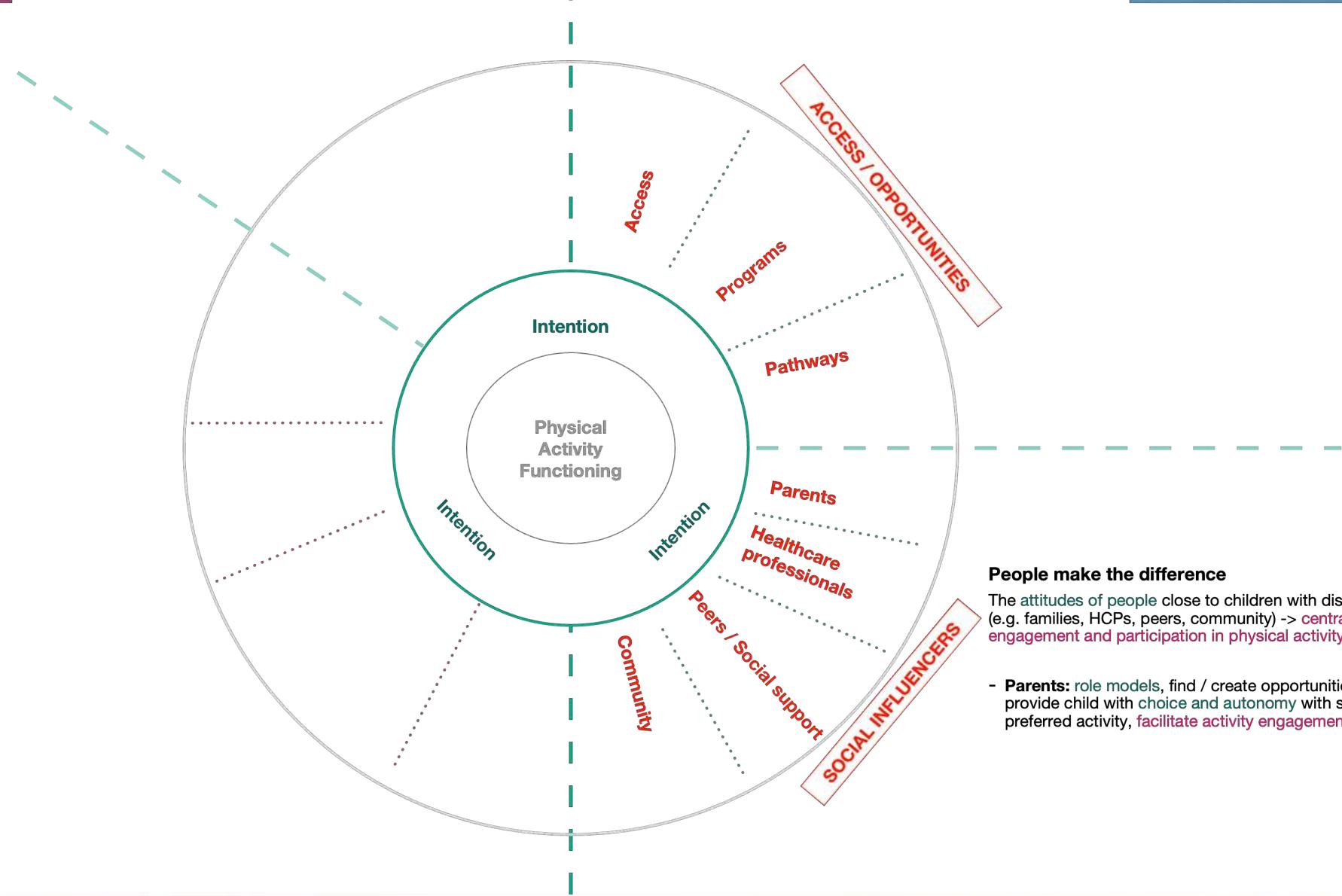
Environmental factors



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

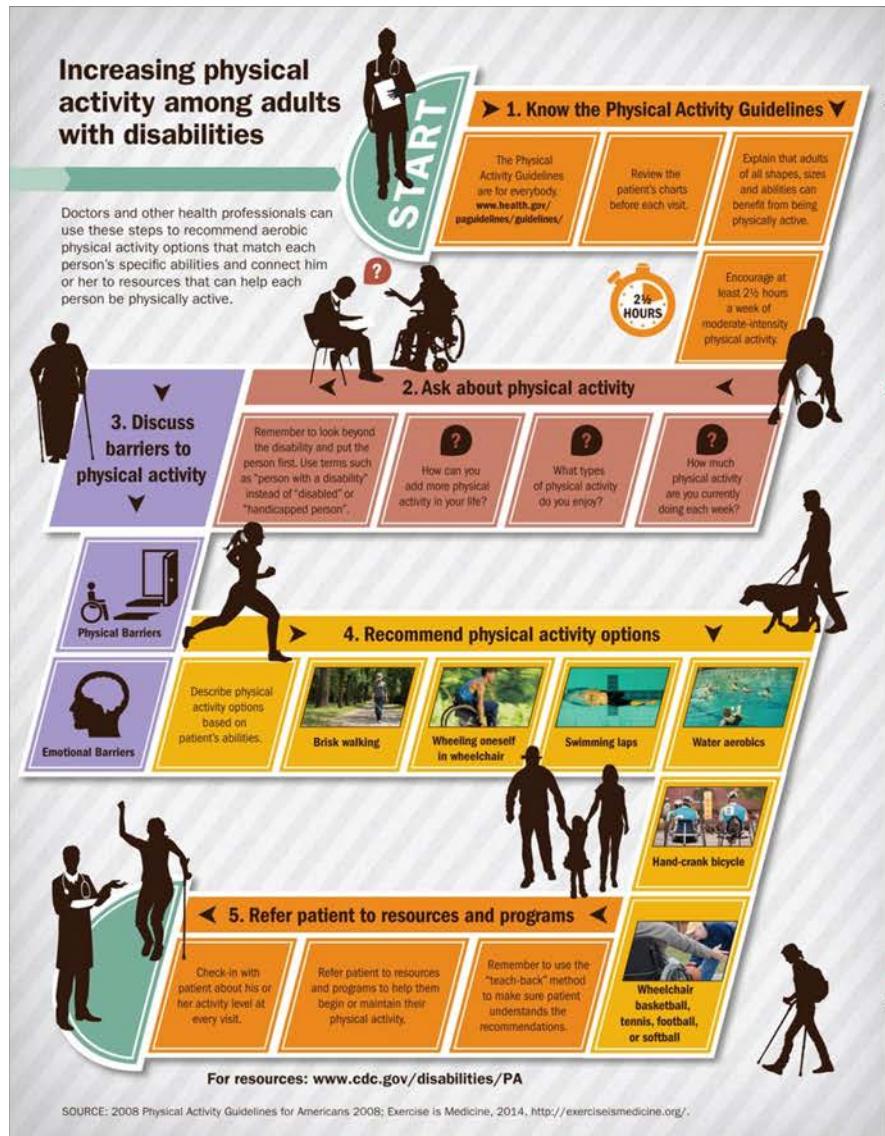
Personal factors

Environmental factors

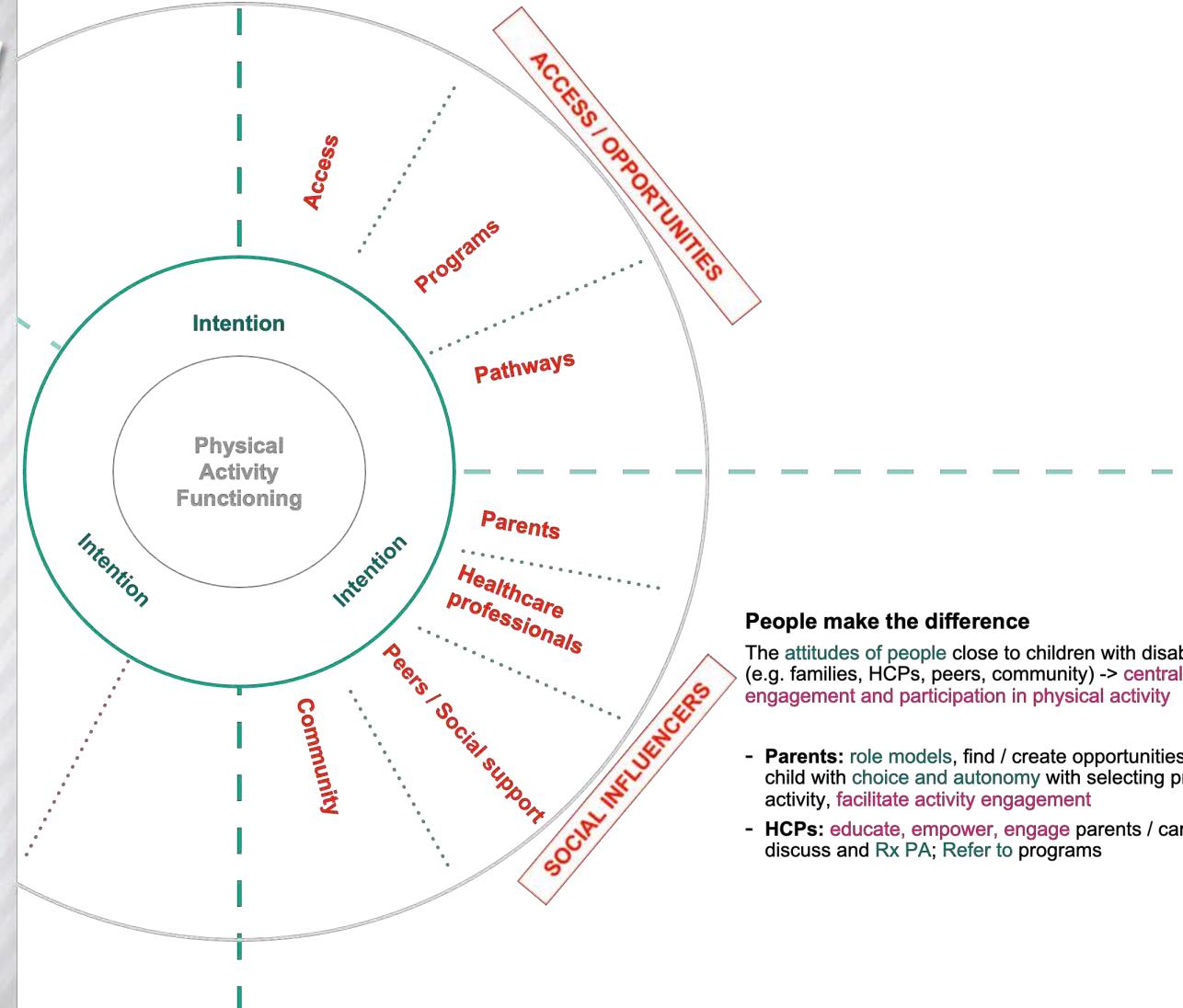


# TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors



Environmental factors



## People make the difference

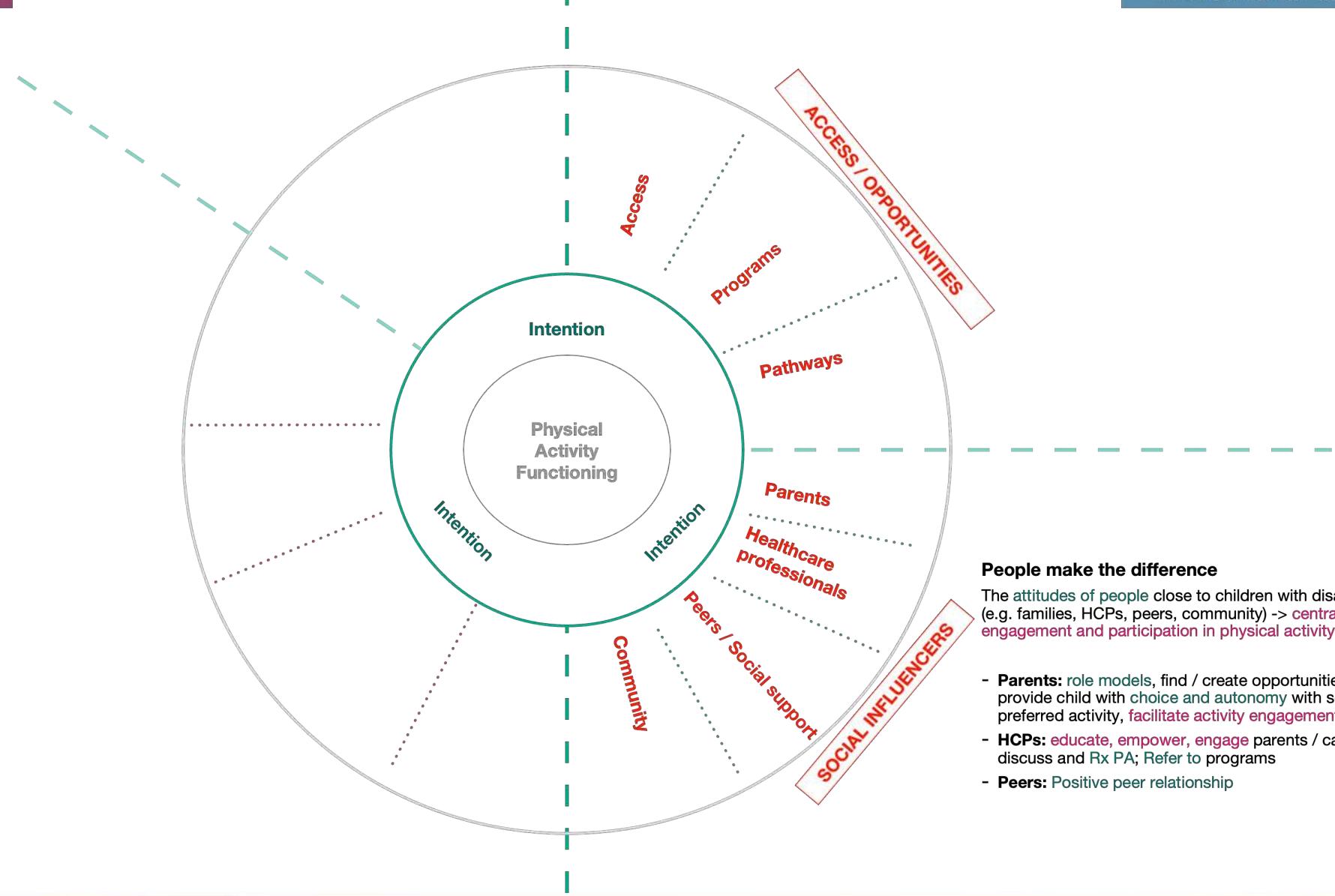
The attitudes of people close to children with disability (e.g. families, HCPs, peers, community) -> central to engagement and participation in physical activity

- **Parents**: role models, find / create opportunities, provide child with choice and autonomy with selecting preferred activity, facilitate activity engagement
- **HCPs**: educate, empower, engage parents / caregivers; discuss and Rx PA; Refer to programs

## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

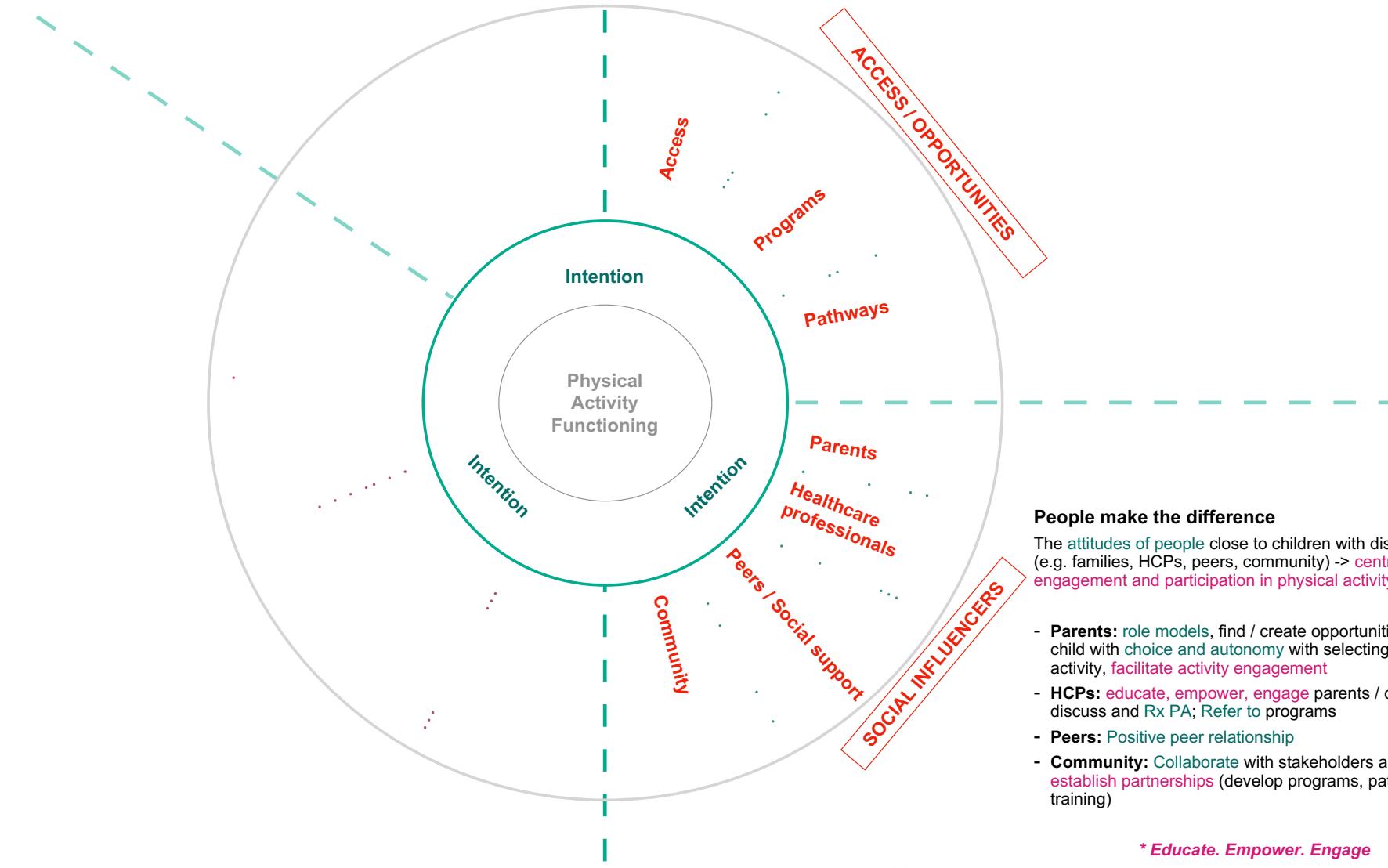
Environmental factors



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



# TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

## Personal factors

- Key determinant of PA behaviour**
  - Severity of health condition -> degrees of disability -> PA participation
  - \*Vicious cycle on inactivity on health
- Lack of skills / ability can have varying impacts**
  - reduce options for physical activity participation
  - sense of frustration -> loss of confidence
- \*Build physical literacy from a young age. Skill gap widens as child gets older, when sports become more competitive

## One size does not fit all

- lack of developmentally (disability) appropriate learning environment can affect skill development, reducing opportunities for skill mastery
- lack of adapted rules can lead to negative experiences, affecting enjoyment and long-term adherence

\*Success hinges on ability to adapt teaching methods, modify activities to include child with disability

## Child's ability to cope is vital

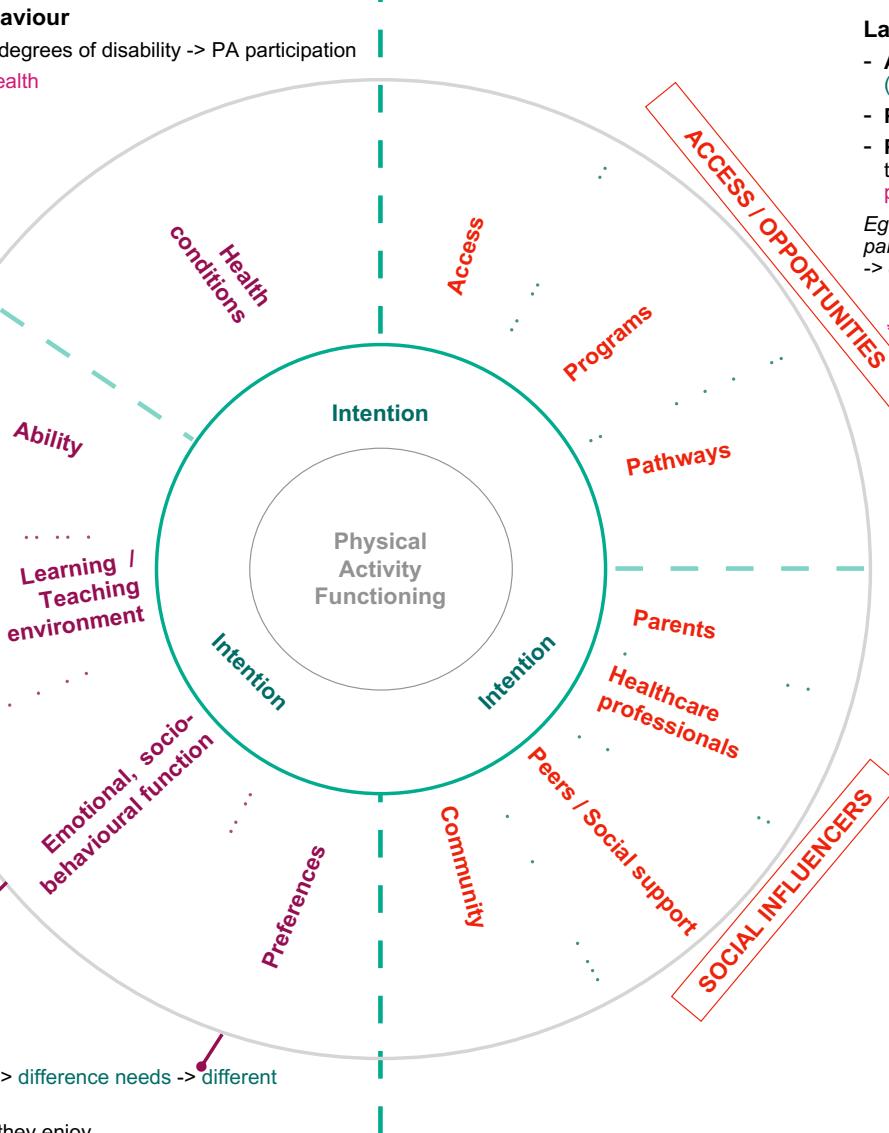
- attention deficit -> reduce attention to tasks, inability to process instructions -> affect skill development / engagement experience
- unforeseeable triggers -> resistance to participation (new activities) or cooperation

\*Provide segregated activities before integration into group activities.

## Choice matters

- every child with disability is different -> difference needs -> different preference of activities
- give them autonomy to choose what they enjoy

\*Parents key role: manage expectations based on their abilities



## Environmental factors

### Lack of structured pathways affects participation

- **Access:** programs need to be **affordable and accessible (location)**, with **disability friendly equipment & facilities**
- **Programs:** need to **cater to different special needs**
- **Pathways:** programs **shouldn't be once-off or in isolation**; need to **integrated into inclusive pathways** catering for structured progression

Eg. segregated programs -> integrated activities -> individual participation -> social competitions -> mainstream group activities -> competitive sports)

\*Develop programs & pathways. Communicate and create awareness

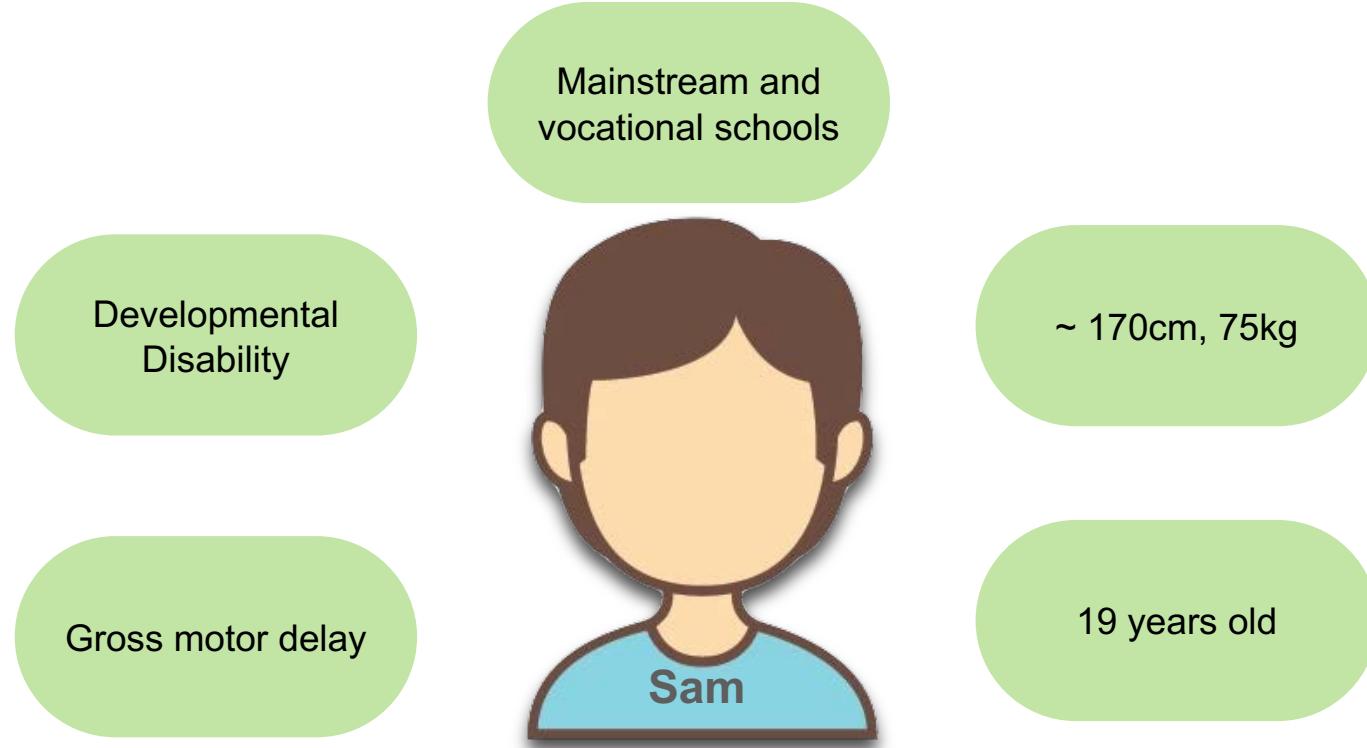
### People make the difference

The **attitudes** of people close to children with disability (e.g. families, HCPs, peers, community) -> central to engagement and participation in physical activity

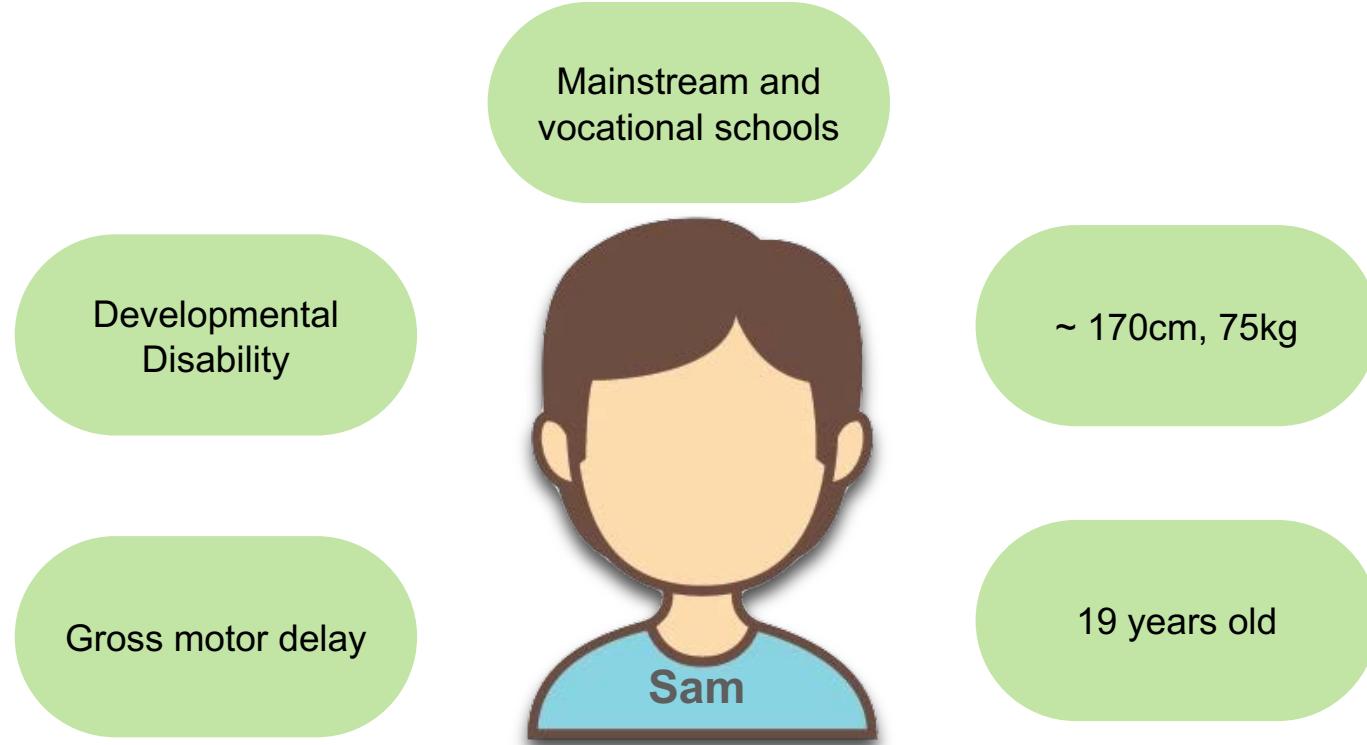
- **Parents:** role models, find / create opportunities, provide child with choice and autonomy with selecting preferred activity, facilitate activity engagement
- **HCPs:** educate, empower, engage parents / caregivers; discuss and Rx PA; Refer to programs
- **Peers:** Positive peer relationship
- **Community:** Collaborate with stakeholders and establish partnerships (develop programs, pathways, training)

\* Educate. Empower. Engage

## **TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS**



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS



Impulsive	Below average FUNdamental skills	Gets upset with unfulfilled demands
Chatty / Socially inappropriate	Decreased Exercise tolerance	Testing the boundaries
Disorganised	Poor posture	Deem high risk in a gym setting
Rigidity		

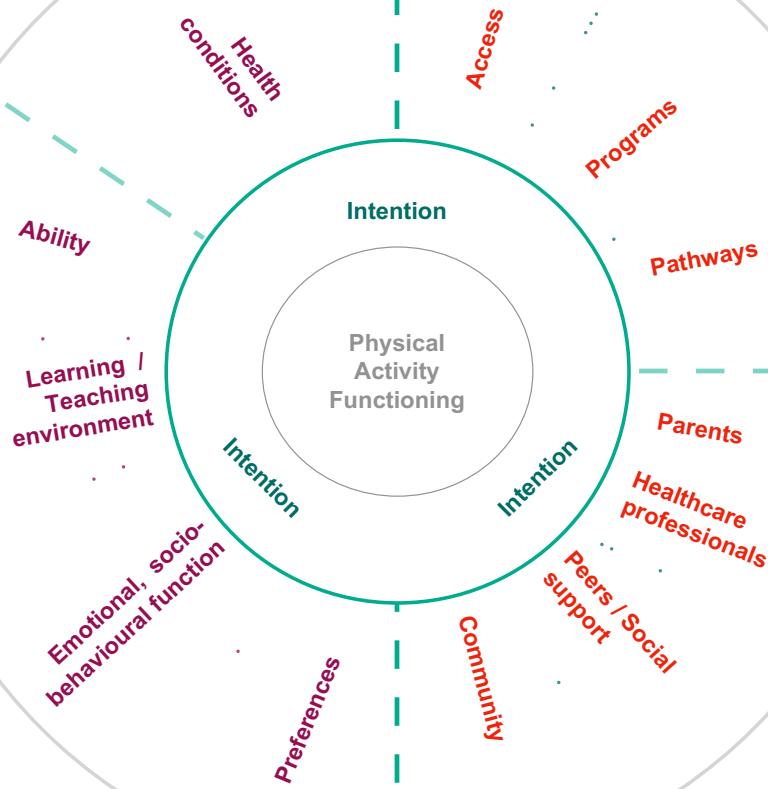
## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



Sam



## TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



Sam

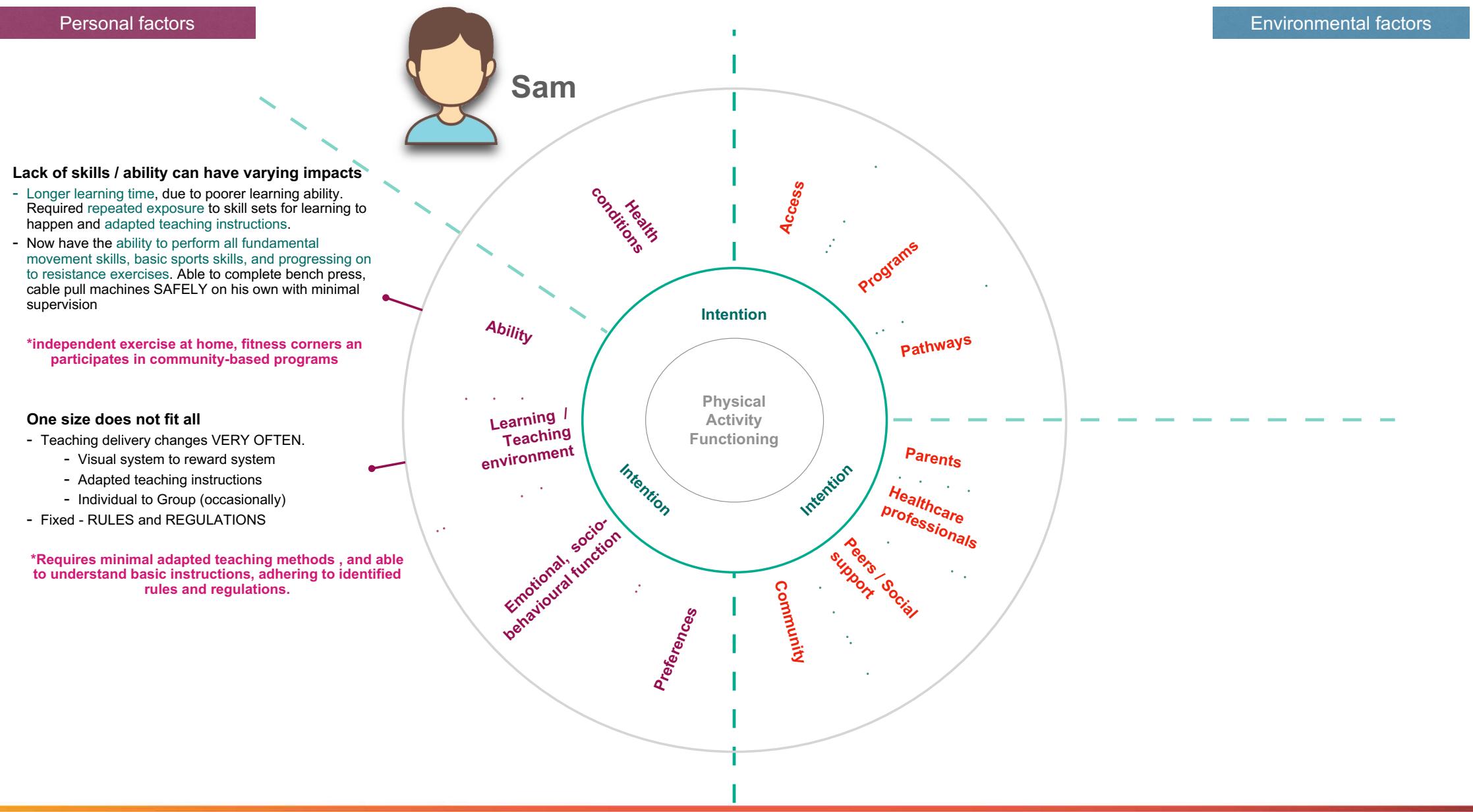
### Lack of skills / ability can have varying impacts

- Longer learning time, due to poorer learning ability. Required repeated exposure to skill sets for learning to happen and adapted teaching instructions.
- Now have the ability to perform all fundamental movement skills, basic sports skills, and progressing on to resistance exercises. Able to complete bench press, cable pull machines SAFELY on his own with minimal supervision

\*independent exercise at home, fitness corners and participates in community-based programs



## **TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS**



# TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



Sam

## Lack of skills / ability can have varying impacts

- Longer learning time, due to poorer learning ability. Required repeated exposure to skill sets for learning to happen and adapted teaching instructions.
- Now have the ability to perform all fundamental movement skills, basic sports skills, and progressing on to resistance exercises. Able to complete bench press, cable pull machines SAFELY on his own with minimal supervision

\*independent exercise at home, fitness corners and participates in community-based programs

## One size does not fit all

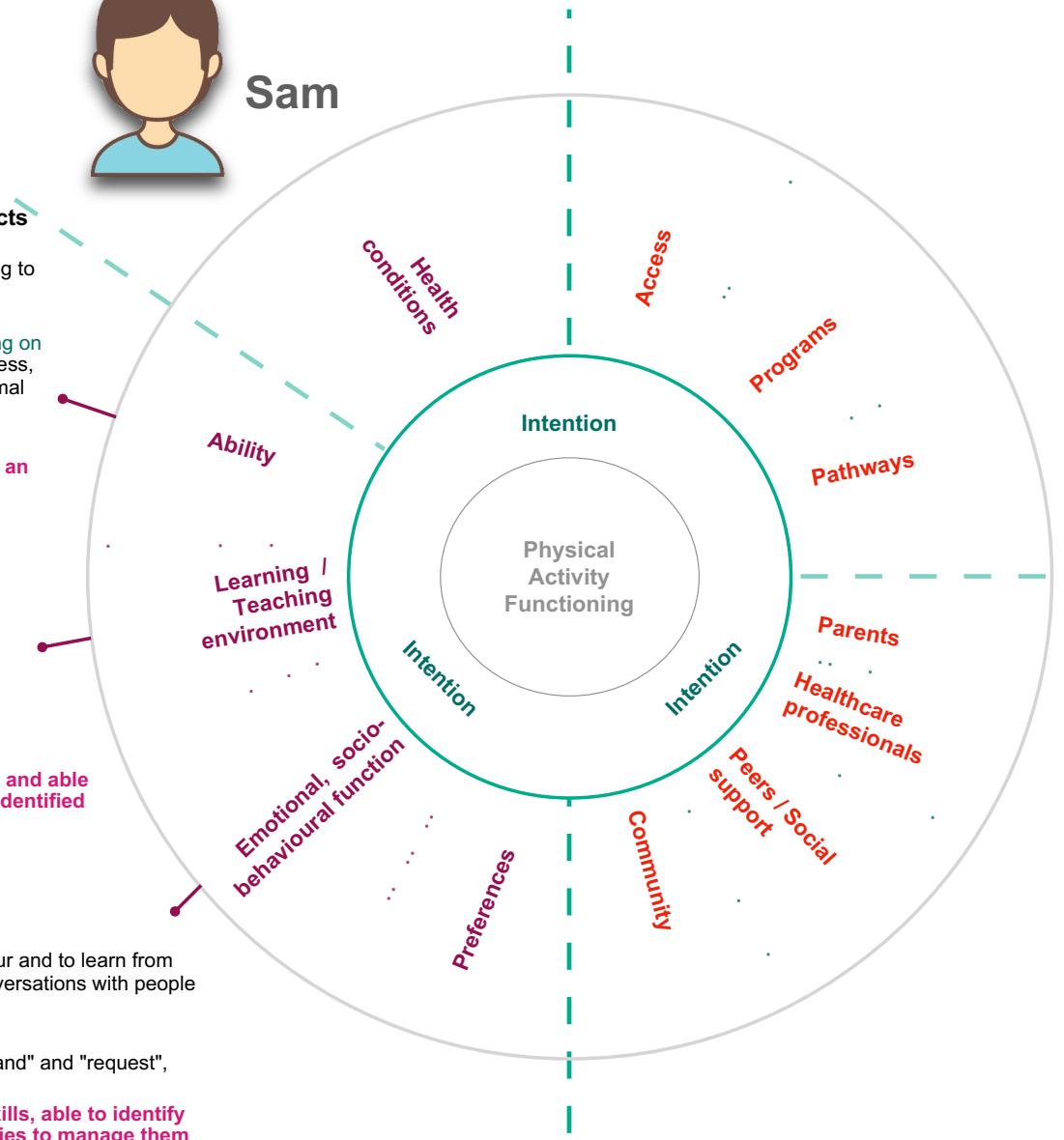
- Teaching delivery changes VERY OFTEN.
  - Visual system to reward system
  - Adapted teaching instructions
  - Individual to Group (occasionally)
- Fixed - RULES and REGULATIONS

\*Requires minimal adapted teaching methods , and able to understand basic instructions, adhering to identified rules and regulations.

## Child's ability to cope is vital

- Social Function
  - Giving him space for social behaviour and to learn from his mistakes (facilitated). Strike conversations with people exercising around him etc
- Emotional management
  - Identify the emotional state of "demand" and "request", then calibrate them.

\*Understand the boundaries of social skills, able to identify reasons of his emotions and use strategies to manage them



# TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



Sam

## Lack of skills / ability can have varying impacts

- Longer learning time, due to poorer learning ability. Required repeated exposure to skill sets for learning to happen and adapted teaching instructions.
- Now have the ability to perform all fundamental movement skills, basic sports skills, and progressing on to resistance exercises. Able to complete bench press, cable pull machines SAFELY on his own with minimal supervision

\*independent exercise at home, fitness corners and participates in community-based programs

## One size does not fit all

- Teaching delivery changes VERY OFTEN.
  - Visual system to reward system
  - Adapted teaching instructions
  - Individual to Group (occasionally)
- Fixed - RULES and REGULATIONS

\*Requires minimal adapted teaching methods , and able to understand basic instructions, adhering to identified rules and regulations.

## Child's ability to cope is vital

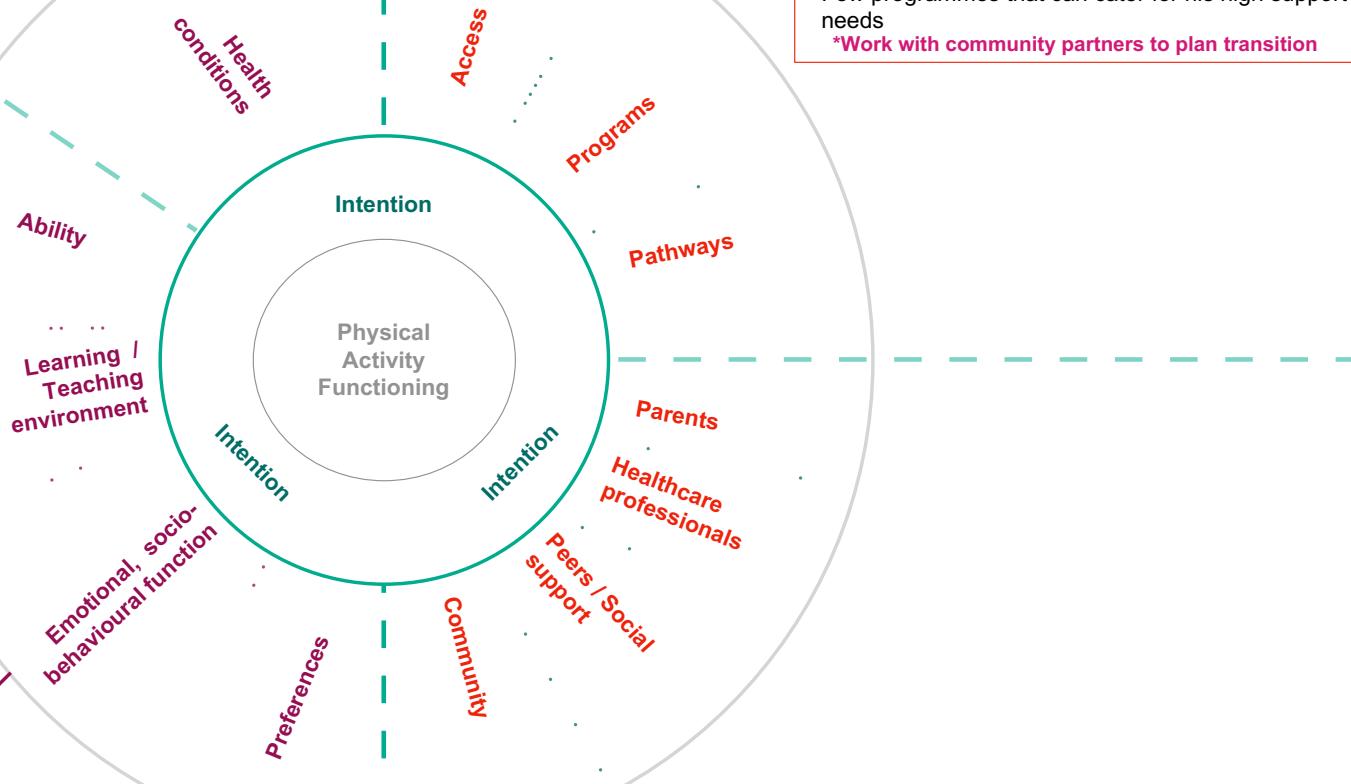
- Social Function
  - Giving him space for social behaviour and to learn from his mistakes (facilitated). Strike conversations with people exercising around him etc
- Emotional management
  - Identify the emotional state of "demand" and "request", then calibrate them.

\*Understand the boundaries of social skills, able to identify reasons of his emotions and use strategies to manage them

## Choice matters

- Provided choice with activities of his preference, without compromising RULES and REGULATIONS

\*Lightens up and works harder when preferences are considered.



## ACCESS / OPPORTUNITIES

- Unstable for exercise in public gym
- Few programmes that can cater for his high support needs

\*Work with community partners to plan transition

# TOWARDS AN INCLUSIVE SOCIETY THROUGH SPORTS

Personal factors

Environmental factors



Sam

## Lack of skills / ability can have varying impacts

- Longer learning time, due to poorer learning ability. Required repeated exposure to skill sets for learning to happen and adapted teaching instructions.
- Now have the ability to perform all fundamental movement skills, basic sports skills, and progressing on to resistance exercises. Able to complete bench press, cable pull machines SAFELY on his own with minimal supervision

\*independent exercise at home, fitness corners and participates in community-based programs (ie. paracycling, community runs)

## One size does not fit all

- Teaching delivery changes VERY OFTEN.
  - Visual system to reward system
  - Adapted teaching instructions
  - Individual to Group (occasionally)
- Fixed - RULES and REGULATIONS

\*Requires minimal adapted teaching methods , and able to understand basic instructions, adhering to identified rules and regulations.

## Child's ability to cope is vital

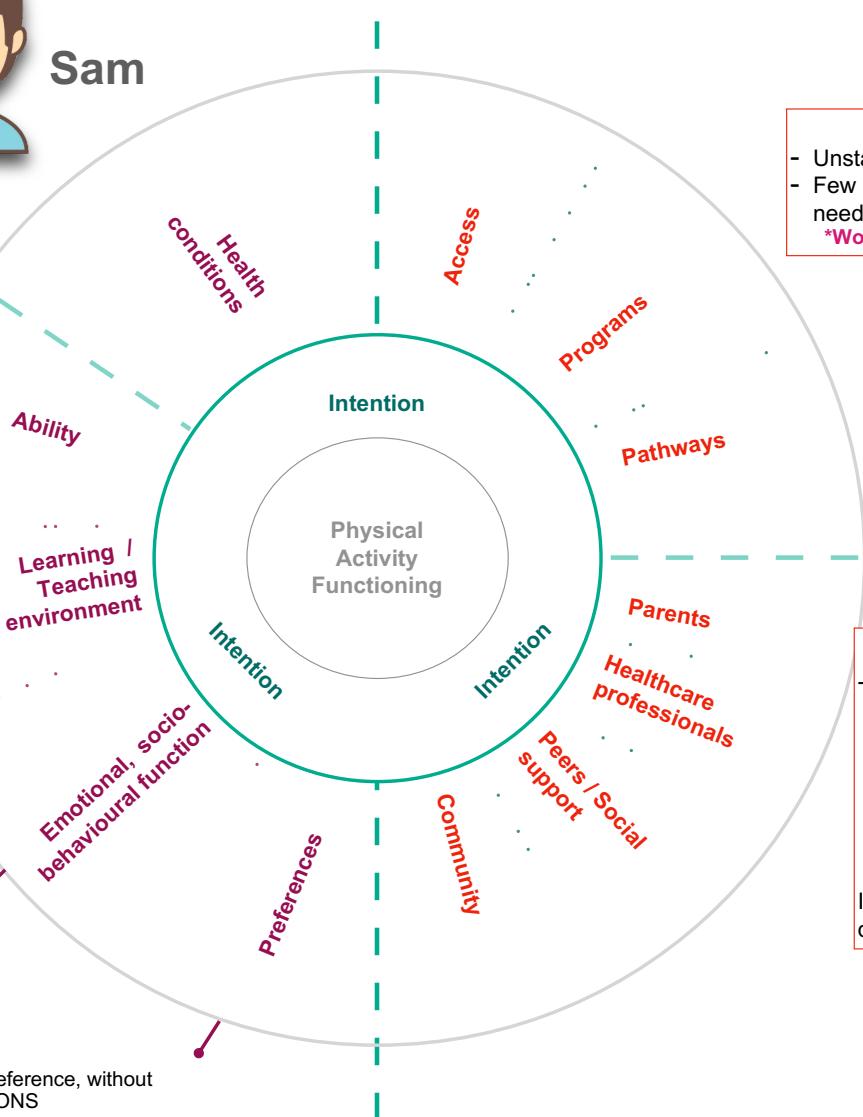
- Social Function
  - Giving him space for social behaviour and to learn from his mistakes (facilitated). Strike conversations with people exercising around him etc
- Emotional management
  - Identify the emotional state of "demand" and "request", then calibrate them.

\*Understand the boundaries of social skills, able to identify reasons of his emotions and use strategies to manage them (has improved)

## Choice matters

- Provided choice with activities of his preference, without compromising RULES and REGULATIONS

\*Lightens up and works harder when preferences are considered.



## ACCESS / OPPORTUNITIES

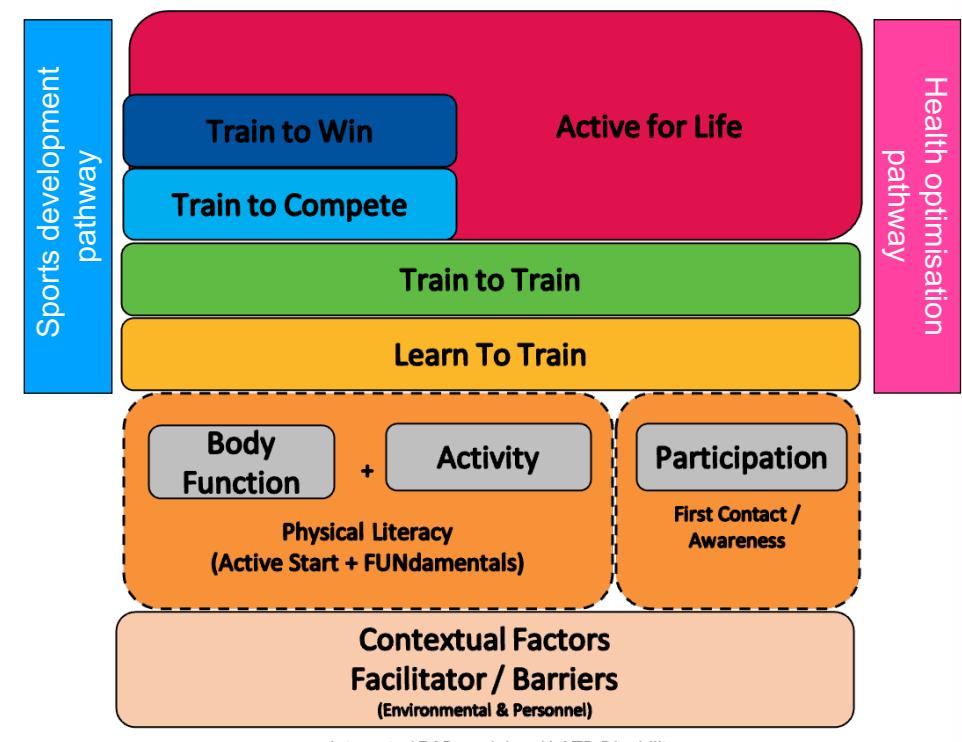
- Unstable for exercise in public gym
  - Few programmes that can cater for his high support needs
- \*Work with community partners to plan transition

## SOCIAL INFLUENCERS

- Parents believe and commit to time for PA
  - Fitness corners and self made equipments
  - Actively finding for programmes to participate and try out.
  - Participating in community events, like runs or walks
- Bad experience with past programmes  
Inexperienced programme delivery, caused distressed for the child.

# Summary

- Children with disabilities are not immune to the secular trends of inactivity
- Inactivity can have impact on health and function
- Strategies to facilitate activity engagement needs to consider for both **personal and environmental factors**
- **Invest in their health early!**
- Build their physical literacy from a young age.  
Develop this mentality of “*I can, I believe and I want to be active*” - for health or as part of sports development in future



# Thank you!

Email: [Micheal.Lim.CM@khh.com.sg](mailto:Micheal.Lim.CM@khh.com.sg)