

Diverse **BY KSG**

Evidence

“Physical activity has the power to unlock learning, wellbeing, and inclusion across every area of SEND”

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Contents Page

How Physical Activity Supports the Four Areas of SEND

Page 3 - Introduction

Communication and Interaction

Page 4 - How Physical Activity Supports Communication and Interaction

Page 5 - Research Evidence

Cognitive and Learning

Page 6 - How Physical Activity Supports Cognitive and Learning

Page 7 - Research Evidence

Social, Emotional and Mental Health (SEMH)

Page 9 - How Physical Activity Supports SEMH

Page 10 - Research Evidence

Physical and Sensory

Page 12 - How Physical Activity Supports Sensory and Physical Development

Page 14 - Research Evidence

Conclusion

Page 15 - Research demonstrates significant benefits across all four areas of SEND

Reference

Page 16 - Supporting evidence

How Physical Activity Supports the Four Areas of SEND

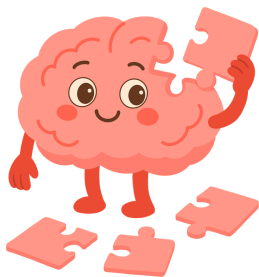
Evidence-Based Research and Educational Impact

Introduction

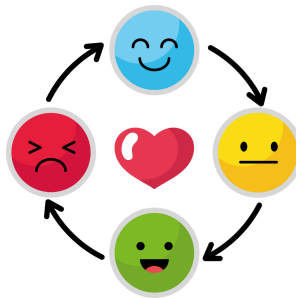
The Special Educational Needs and Disabilities (SEND) Code of Practice identifies four broad areas of need:

Communication and Interaction
Cognition and Learning
Social, Emotional and Mental Health (SEMH)
Sensory and/or Physical Needs

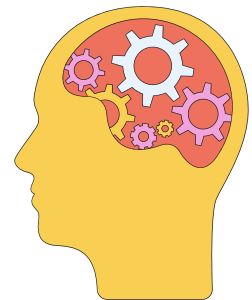
Increasing research demonstrates that physical activity can positively impact all four areas by supporting:



brain development



emotional regulation



executive functioning



social interaction



communication



access to learning.

For many children with SEND, movement is not simply beneficial for physical health, it is fundamental for regulation, engagement, and educational success.

Communication and Interaction

This category includes:

Autism Spectrum Condition (ASC) / Speech, Language and Communication Needs (SLCN)
Developmental Language Disorder (DLD) / Social communication difficulties

Children within this area may experience difficulties with:

expressive and receptive language / understanding social cues / initiating interactions /
maintaining conversations / emotional communication

How Physical Activity Supports Communication and Interaction

Physical activity creates natural opportunities for:



turn-taking
cooperative play



shared attention



non-verbal
communication



social interaction

Movement-based activities reduce the pressure often associated with verbal communication and can provide children with safer, more engaging ways to interact with peers and adults.

Structured movement activities can also improve:



listening skills



following instructions



social confidence



language processing

For autistic children, predictable movement routines and sensory-regulating activities may also reduce anxiety and improve engagement.

Communication and Interaction

Research Evidence

A meta-analysis published in Heliyon (2024) examined the effects of physical activity interventions on children with Autism Spectrum Disorder (ASD).

The study found significant improvements in:



social communication



social responsiveness



peer interaction



social participation

The researchers concluded:

“Physical activity improves social communication impairments in children with autism spectrum disorder.”

The review highlighted that structured and consistent physical activity programmes produced the strongest outcomes, particularly activities involving:



cooperative games



movement-based
social interaction



group participation

Additional research published in the Journal of Autism and Developmental Disorders found that physical activity interventions improved:



social functioning



behavioural engagement



communication skills

Researchers suggested that movement activities help children practise social interaction in meaningful and less verbally demanding ways. A further systematic review found that physically active interventions improve: emotional understanding, peer relationships, social participation.

This evidence suggests physical activity can become a powerful inclusion tool for children with communication and interaction needs.

Cognition and Learning

This category includes:

Moderate Learning Difficulties (MLD) / Severe Learning Difficulties (SLD) / Specific Learning Difficulties (SpLD) / Dyslexia / Dyscalculia / Difficulties with processing, memory, and executive functioning

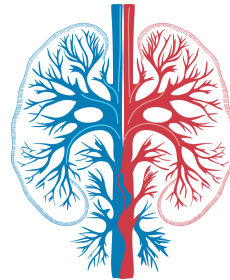
Children within this area may struggle with:

concentration / information processing / memory retention / sequencing / organisation / academic engagement.

How Physical Activity Supports Cognitive and Learning

Physical activity and movement increases:

blood flow to the brain
oxygen delivery
neurotransmitter activity
neural connectivity



These changes support:

attention



working memory



processing speed



Physically active learning approaches can also improve:

engagement



classroom participation



motivation



memory retention



Cognitive and Learning

Research Evidence

A large review published in the British Journal of Sports Medicine examined the impact of physical activity on cognition and academic performance in children and adolescents.

The researchers concluded:

“Physical activity interventions improve cognitive and academic performance in children and adolescents.”

Researchers found consistent improvements in:

attention



academic
achievement



working
memory



concentration



The strongest effects were seen when physical activity was:

moderate to vigorous in
intensity



regular



intergrated into learning



Another review published in Frontiers in Psychology found that physically active learning improved:

mathematic
performance



reading
outcomes



classroom
engagement



The study also found movement-based learning particularly beneficial for children with lower baseline attainment.



Research from the National Institutes of Health (NIH) further states:

“Physical activity is widely recognised as an important factor in promoting children’s cognitive function.”

The evidence showed improvements in:

memory



information processing



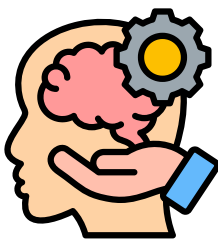
problem-solving



Researchers also noted that movement supports executive functioning, a critical factor for classroom success.

Executive function includes:

working memory



cognitive flexibility



self-control



Social, Emotional and Mental Health (SEMH)

This category includes:

ADHD / ADD / Anxiety / Attachment difficulties / Trauma-related needs / Emotional regulation difficulties / Behavioural challenges

Children within this area may experience:

impulsivity / emotional dysregulation / anxiety / difficulties with self-control / low self-esteem / barriers to engagement

How Physical Activity Supports SEMH

Movement helps regulate the nervous system by:

reducing cortisol (stress hormones)
increasing endorphins
improving dopamine regulation
supporting emotional balance



Physical activity also provides opportunities for:

success



positive social interaction



confidence building



resilience



For many children, movement acts as a self-regulation strategy.

Activities such as:

running



rhythmic movement



coordinated games



balancing





ADHD and Executive Function

ADHD is most commonly categorised under SEMH because it affects:

attention regulation / impulse control / hyperactivity / emotional regulation.

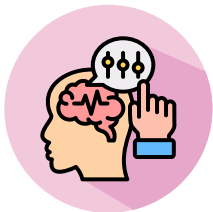
However, ADHD also affects executive functioning and cognitive processing. Research increasingly shows that physical activity can significantly improve ADHD symptoms.

Research Evidence

A 2025 meta-analysis published in the Journal of Affective Disorders examined physical activity interventions for children with ADHD.

Researchers found significant improvements in:

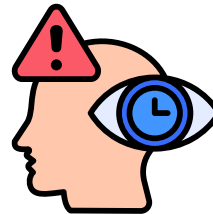
inhibitory control



working memory



attention



cognitive flexibility



The study concluded:

“Physical activity interventions positively influence executive functions in children with ADHD.”

Researchers noted that exercise appears to support dopamine and norepinephrine regulation, which are closely linked to attention and behavioural control.

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Social, Emotional and Mental Health (SEMH)

Another study published in Pediatric Research found that physical exercise interventions improved:

ADHD symptoms



emotional regulation



cognitive function



mental wellbeing



The researchers concluded:

“Physical exercise interventions improve mental health, cognitive function, and ADHD symptoms.”

Further evidence suggests that short bouts of movement can improve:

classroom focus



on-task behaviour



sustained attention



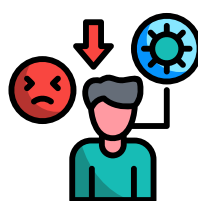
Some studies found improvements in attention following as little as 10 minutes of moderate physical activity.

Research also shows physical activity can reduce:

anxiety symptoms



behavioural dysregulation



emotional distress



This highlights the importance of movement as a preventative and supportive strategy for SEMH needs within schools.

Physical and Sensory

This category includes:

sensory processing difficulties / dyspraxia / Developmental Coordination Disorder (DCD) / physical disabilities / visual impairments / hearing impairments / medical needs.

Children within this area may experience difficulties with:

coordination / balance / movement planning / sensory regulation / posture / physical access to learning.

How Physical Activity Supports Sensory and Physical Development

Physical activity supports the development of:

gross motor skills



coordination



balance



core strength



sensory integration

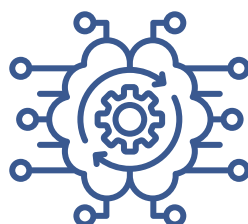


Movement stimulates the:

vestibular system
(balance and movement)



processing
systems



proprioceptive system
(body awareness)



Physical and Sensory

These systems are critical for:

attention



regulation



coordination



classroom functioning



Activities such as:

climbing



crawling



balancing



jumping



obstacle courses



help children process sensory input more effectively.

Movement can also improve:

independence



confidence



mobility



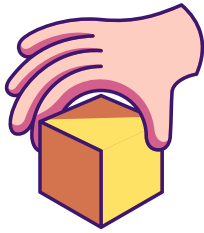
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Physical and Sensory

Research Evidence

Research published in Frontiers in Public Health found that physical activity interventions significantly improved:

motor coordination



balance



sensory integration



The review found that structured movement programmes improved:

body awareness



motor planning



movement confidence

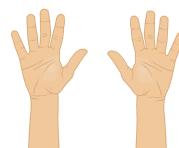


Studies involving children with Developmental Coordination Disorder (DCD) found that regular physical activity improved:

balance



bilateral coordination



movement control



Additional research suggests sensory-rich movement activities can support self-regulation and reduce sensory dysregulation in children with sensory processing difficulties.

Researchers concluded that movement-based interventions can improve:

emotional regulation



school engagement



physical confidence



Conclusion

Conclusion

The evidence increasingly shows that physical activity supports far more than physical health.

Research demonstrates significant benefits across all four areas of SEND,
including improvements in:

communication



cognition



attention



executive functioning



emotional regulation



social interaction



sensory processing



learning engagement



For many children with SEND:

1 movement improves regulation



2 regulation improves engagement



3 engagement improves access
to learning



4 and success improves
confidence and wellbeing



This positions physical activity not as an “extra” within education, but as a powerful whole school strategy for supporting inclusion, wellbeing, and learning outcomes.



British Journal of Sports Medicine (2019) – Physical activity interventions improve cognitive and academic performance in children and adolescents.

Journal of Affective Disorders (2025) – Physical activity interventions positively influence executive functions in children with ADHD.

Heliyon (2024) – Physical activity improves social communication impairments in children with autism spectrum disorder.

Frontiers in Psychology (2025) – Research highlighting the positive impact of physically active learning on engagement, cognition, and wellbeing.

Frontiers in Public Health (2023) – Evidence supporting movement-based interventions for sensory regulation and motor development.

Pediatric Research / Nature (2025) – Physical exercise interventions improve mental health, cognitive function, and ADHD symptoms.

Olly Jefferies
Headteacher
Upton St James C of E Primary School

“We love having diverse sessions, they really help children to both regulate and it improves their engagement in learning following the intervention. Children's SEND needs have been well met with this support particularly for children with SEMH and SLCN needs.

The sessions were also observed in our 2024 OFSTED inspection and were highly thought of by the inspection team. - highly recommend.”

