Sensory Processing & ADHD in Children and Adults

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Overview

- What Sensory Processing is
- What the difference is between ADHD and Sensory Processing Issues
- Why they often overlap
- How sensory processing affects ADHD across the lifespan
- How symptoms differ in children, teens and adults
- Actionable steps to help you manage sensory processing issues if you or your child have ADHD

What Is Sensory Processing?

- How the nervous system **receives, filters, and manages** sensory input
- Happens constantly, in real time
- Supports regulation, attention, and participation
- Not just "sensitivity"—it's a whole-system process

The Eight Sensory Systems

- Five familiar senses: sight, sound, touch, taste, smell
  Three "invisible" senses:
- **Proprioception** (body position)
- **Vestibular** (movement/balance)
- **Interoception** (internal body cues)

Everyone has a Unique Sensory Profile

The Neurology of Sensory Processing vs ADHD

Sensory Processing

- **Key areas:** brainstem, thalamus, prefrontal cortex, autonomic nervous system
- **Efficient filtering supports** safety, focus, and regulation
- **Differences may include** noticing too much, too little, seeking more input, or becoming overwhelmed

ADHD

- **Key areas:** prefrontal cortex, basal ganglia, anterior cingulate cortex, cerebellum, limbic regions, default mode network
- **Efficient coordination supports** attention regulation, inhibition, motivation, timing, and emotional regulation
- **Differences may include** difficulty sustaining focus, impulsivity, inconsistent task initiation, emotional reactivity, and increased mind-wandering

Sensory Processing vs Sensory Integration

- **Processing:** noticing, filtering, and managing input
- **Integration:** organizing input for coordinated action
- Processing difference → sensations feel too strong, too weak, or overwhelming
- Integration difference → difficulty planning, sequencing, or coordinating actions even if sensations are tolerable

Terminology & Assessment

- SPD is not a formal diagnosis after the age of 5.
- OTs use standardized tools across the lifespan:
  - Sensory Profile
  - SPM / SPM-2
  - SIPT (Sensory Integration & Praxis Test)
  - Shared terminology guides assessment and support

Sensory Processing Patterns

Sensory Processing Patterns & Subtypes

- **Sensory Modulation:** over-responsive, under-responsive, sensory seeking
- **Sensory-Based Motor:** dyspraxia, postural challenges
- **Sensory Discrimination:** difficulty interpreting or grading input (touch, vision, sound, proprioception, movement)

Sensory Processing in Children

- **Modulation:** seeking, avoiding, under-responsive
- **Motor:** postural challenges, motor planning differences (Dyspraxia, DCD (Developmental Coordination Disorder)
- **Discrimination:** difficulty interpreting feedback (e.g., Touch: managing buttons, zippers, cutlery, shoe-tying; Vestibular:)
- **Impacts** play, learning, behaviour, and emotional regulation
- **40–69%** of children with ADHD have sensory differences
- Does my child have Sensory Processing issues? Go to: https://sensoryhealth.org/ type in "symptoms checklist"

Sensory Processing in Teens & Adults

- Patterns often continue into adolescence and adulthood
- Sensory needs shift with environments and responsibilities
- Impacts work, home, relationships, and emotional regulation
- High rates of sensory over-responsivity in adults with ADHD
- Does my teen have Sensory Processing issues? Go to: https://sensoryhealth.org/ type in "symptoms checklist"
- Do I have Sensory Processing issues? Go to: https://sensoryhealth.org/ type in "symptoms checklist"

Sensory Processing & ADHD Together

- The “volume” of the world may feel too high or too low
- Hard to tune out sensory input
- Or hard to notice internal cues
- Difficult to separate sensory challenges from ADHD symptoms
  Both affect regulation and attention

Prevalence Across the Lifespan

- Children: 50–60% show significant sensory differences
- Teens: sensory patterns persist
- Adults: elevated sensory over-responsivity, under-responsivity, and seeking
- Sensory differences are common across the lifespan in ADHD

How Sensory Processing & ADHD Differ

- **Sensory processing is a neurological condition**
  - It affects **brain function**, not behavior alone.
  - It can appear in childhood or adulthood and may be linked to genetics, prenatal factors, or brain injury.
  - It is not tied to a specific developmental trajectory; it's about **how the nervous system handles input** (touch, sound, movement, proprioception, interoception).
- **ADHD is a neurodevelopmental condition**
  - It affects the development of **attention networks, executive function, and impulse control**.
  - Symptoms begin **before age 12** and reflect lifelong patterns of brain development (Cleveland Clinic) .
  - It is strongly linked to genetics and early brain development.
- ADHD is neurodevelopmental because it involves **developmental wiring differences** in the brain's regulatory and executive systems.

How They Intersect

- Shared challenges: attention, regulation, overwhelm
- Often confused because behaviours look similar
- Each can amplify the other → double regulation load

How Sensory Processing Interacts with ADHD

- Overload can look like inattention or impulsivity.
- Sensory seeking can look like hyperactivity.
- Low registration can look like “not listening.”
- Supporting sensory needs often reduces ADHD-related challenges.

What Helps Most

- Understanding • Predictability • Sensory-aligned environments • Gentle communication • Strengths-based support • Reducing shame and increasing comfort

ADHD + Sensory Processing: What Parents May Notice

Children with ADHD often experience sensory input more intensely or inconsistently. These patterns influence attention, behaviour, and emotional regulation.

What you might notice

- Seeking movement, pressure, touch, or sound
- Avoiding noise, textures, crowds, or unexpected touch
- Overwhelm, shutdowns, or "meltdowns"
- Difficulty focusing in busy or noisy spaces
- Slow transitions
- Missing internal cues (hunger, bathroom needs)

Why this matters

Supporting sensory needs increases comfort, participation, and confidence, and often reduces ADHD-related challenges.

Sensory & Environmental Supports

Sensory supports

- Sensory breaks: movement, deep pressure, quiet corners
- Tools: headphones, fidgets, weighted items, soft clothing
- Meaningful sensory input (planned, purposeful activities)
- Strength-based, child-led approaches

Environmental adjustments

- Lower noise, dim lights, reduce visual clutter
- Predictable routines with visual supports
- Gentle countdowns for transitions
- Offering choices to support autonomy

Clinical supports

- Occupational therapy
- Occupational & Sensory Integration Therapy–informed treatment

Emotional Regulation + Co-regulation

Supporting emotional regulation

- Name sensations gently ("Your body feels buzzy")
- Validate the experience ("That sound was a lot for your ears")
- Co-regulate before problem-solving
- Teach simple tools: wall pushes, deep breaths, stretching, sensory breaks

Co-regulation + routines

- Calm voice, grounding, shared breathing
- Predictable transitions that reduce cognitive load
- Consistent routines that help the nervous system settle

Key message for caregivers
Understanding sensory needs—and responding with predictability, co-regulation, and strengths-based support—helps children feel safer, more capable, and more confident in daily life.

How ADHD Changes Sensory Processing in Teens

What Teens Often Notice

- Sensory triggers feel unpredictable because attention and regulation shift
- Background noise and busy spaces are harder to filter
- Internal cues (hunger, fatigue, rising overwhelm) are easy to miss
- Escalation happens faster when early signs go unnoticed

How Overload Shows Up

- Big movement or impulsivity when overwhelmed
- Emotional reactivity or shutdown after masking all day
- "Avoidance" that is actually sensory + executive function overload
- Difficulty naming what's wrong until it's intense

Key Insight

- ADHD + sensory differences = sensory needs **plus** support for attention, regulation, and executive function.

Build a Regulation Toolkit That Teens Will Actually Use

Understand Your Sensory System

- Notice what overwhelms you (noise, textures, crowds)
- Notice what helps you reset (movement, pressure, quiet)
- Sensory needs are real and valid

Tools That Work in Real Life

- **Movement:** walking, biking, dancing, stretching
- **Deep pressure:** weighted blanket, tight hoodie, compression clothing
- **Focus tools:** fidgets, gum, noise-canceling headphones
- **Reset spaces:** predictable calm spots at home or school

Support Teens with ADHD + Sensory Needs

- External cues to pause or reset
- Help slowing down enough to use a strategy
- Co-regulation when emotions escalate
- Tools that are easy to access and hard to lose

Executive Function + Advocacy Skills for Daily Life

Executive Function Supports

- Break tasks into small steps
- Use timers or music to get started
- Keep one consistent place for lists or reminders
- Pair movement with planning or studying
- Keep sensory tools in predictable, grab-and-go spots

Social & Emotional Realities

- Misinterpretations (“too intense,” “too distracted”)
- Shame around sensory needs (don’t like to be different or have different needs)
- Burnout from masking
- Difficulty advocating in the moment

Self-Advocacy Scripts

- “I focus better with movement.”
- “I need a quieter space to work.”
- “I need a break to reset my body.”
- “This texture/noise/light is too much for me.”

Adults With ADHD + Sensory Processing: Common Experiences

Adults with ADHD often experience sensory input more intensely or inconsistently. These patterns influence focus, energy, and emotional regulation.

Common experiences

- Noise or light sensitivity
- Texture discomfort
- Difficulty filtering background noise
- Sensory seeking (movement, pressure, sound)
- Fatigue from sensory load
- Emotional overwhelm
- Missing internal cues (hunger, temperature, elimination, emotion)

Daily Sensory + Environmental Supports

Sensory-friendly environments

- Headphones, white noise, quiet spaces
- Soft lighting, reduced clutter
- Comfortable textures and clothing

Movement + task supports

- Movement breaks, pacing, stretching
- Body doubling, timers, step-by-step structure
- Sensory pauses throughout the day

Work + home adjustments

- Sensory-friendly workspaces
- Reducing competing sensory input
- Routines that match your sensory profile

Emotional Regulation + Self-Advocacy

Regulation tools

- Deep pressure and proprioceptive input
- Slow breathing down
- Stepping outside or changing temperature
- Grounding through movement or sensory input

Self-advocacy + boundaries

- Request sensory-friendly options (lighting, seating, noise)
- Share needs simply (“I focus better with less noise”)
- Choose environments that support comfort
- Build routines that honour your sensory profile

Core message
Supporting your sensory needs increases capacity for focus, emotional regulation, and sustainable daily functioning.

Resources

- Books, websites, and tools for families, adults, and clinicians
- How you can reach me: ktmulka@outlook.com or call: 780-438-7126
- My website: www.unlimitedpotentials.com or www.kathymulkaot.ca

THANK YOU!

- Questions…