LOOPING

FREE GUIDE



WHAT THE EVIDENCE SUPPORTS — AND WHAT IT DOESN'T

Research Notes

for the four moments where momentum gets stuck

What research says about the real-world difficulties of ADHD and neurodivergent adults — and what helps.

Read this first. LOOPING is a practical method, not a treatment.

These notes describe published research. They do not claim that LOOPING has been tested, that it changes ADHD symptoms, or that it replaces medical care. Every finding carries its source and its limits.

Starting | Switching | Focusing | Stopping

HOW TO READ THESE NOTES

Seven rules we follow — so you can trust what you read

Research about ADHD is easy to overstate. Here is how we keep ourselves honest, and how to read the rest of this document.

- **"Associated with" is not "causes."** Most large studies compare groups of people at one moment in time. They can show that two things go together. They cannot show that one causes the other.
- **Group averages are not you.** When a study finds a "moderate" difference between adults with and without ADHD, it describes averages across hundreds of people. Many people with ADHD score in the typical range on any single test. Your own records are the only data about you.
- **Effect sizes, in plain words.** Researchers report differences as effect sizes (d, g, or SMD). Roughly: 0.2 is small, 0.5 is moderate, 0.8 is large. A 0.5 effect is *not* "50% better." We never translate effect sizes into percentages.
- **Self-report and measurement can disagree.** For example, adults with ADHD report many more sleep problems, and wrist monitors agree — but sleep-lab recordings show no group difference. We say which kind of evidence we mean.
- **Child studies stay child studies.** Some of the best-known findings come from children. We flag them and do not pretend they were done in adults.
- **Community words are not diagnoses.** Terms like "rejection sensitive dysphoria," "ADHD burnout," and "time blindness" describe real experiences, but they are not formal diagnoses and most have little or no peer-reviewed research behind them. We say so.
- **Where LOOPING fits.** Some of LOOPING's design choices are *consistent with* strategies described in clinical guidelines and in structured psychological programs. That is the strongest honest claim. LOOPING itself has not been tested in a trial.

Medication is mentioned only where a guideline or study makes it context. Nothing here is medical advice. If you are considering diagnosis or treatment, talk to a qualified clinician.

SECTION 1

How common is adult ADHD?

A global review of 40 studies across 30 countries estimated that about **2.6% of adults** have ADHD that began in childhood and persists ("persistent ADHD"), and about **6.8% report clinically significant symptoms** without a confirmed childhood onset. That is roughly 140 million and 366 million adults worldwide. Persistent ADHD becomes less common with age — about 5% at ages 18–24 and under 1% at 60 and over. The studies varied enormously in method, so treat these as rough ranges, not precise counts. [R29]

The World Health Organization's World Mental Health Surveys, using diagnostic interviews with 26,744 people in 20 countries, found **2.8%** of adults met criteria for current ADHD. It was strongly linked with anxiety, mood, behaviour and substance-use conditions — and treatment-seeking was low everywhere. [R30]

What this means for LOOPING. If you recognise the four moments in this guide, you are in a very large company. A diagnosis is not required to use the method, and the method is not a substitute for assessment.

SECTION 2

The four moments

LOOPING is built around four moments where momentum gets stuck: **starting, switching, focusing, and stopping**. For each one we describe what people experience, what the research shows, what it does not show, and how LOOPING's design relates.

2.1 Starting — task initiation and activation

What it feels like. Knowing exactly what to do and being unable to begin. Hours disappear into "getting ready." The task grows in the mind while the first action never happens.

What the research shows. The most influential theory of ADHD proposes a core difficulty with *behavioural inhibition* that affects working memory, the regulation of motivation and effort, and self-directed action — including getting started. Its author was careful to say that far more research was needed. [R1] A second model adds *delay aversion*: a tendency to escape or avoid waiting, which can make slow-starting tasks feel intolerable. [R2] A widely used clinical description groups "activation" — organising, prioritising, estimating time, and getting started — as one of six executive-function clusters; it is a clinician's descriptive model, not a tested theory. [R3]

In adults, higher ADHD symptoms are **associated** with more procrastination and lower quality of life, and part of that link runs through procrastination itself (one online survey of 132 adults). [R4] A small study found adults with ADHD recalled and carried out fewer of their own real-life intentions, and that this everyday "prospective memory" partly explained their procrastination. [R5]

What it does not show. These are correlational findings from small samples. They describe averages, not a fixed trait, and they do not measure any particular starting technique.

How LOOPING relates. The *Act* step asks for one priority, one concrete first physical action, and a start cue in the form "When [event], I will [visible action]." That form is an *implementation intention*. In the general adult population, implementation intentions have decades of experimental support (Register A: Gollwitzer & Brandstätter 1997; Wang et al. 2021 meta-analysis, pooled g about 0.34). In ADHD specifically, the controlled evidence comes from **children**, where if-then plans improved inhibition and shifting on lab tasks. [R37] No trial has tested them in adults with ADHD. LOOPING's start cue is therefore *consistent with* well-studied strategies, not proven for this audience.

2.2 Switching — transitions, interruptions and set-shifting

What it feels like. Glued to the wrong task, or scattered across ten. Every interruption costs far more than the minutes it takes, because getting back in is the hard part.

What the research shows. A review of 34 meta-analyses (253 comparisons, all ages) found people with ADHD scored lower than comparison groups on 96% of measures, with an average difference of 0.45 — a moderate effect. By domain, the largest average differences were in reaction-time variability (0.66), vigilance (0.56), working memory (0.54) and response inhibition (0.52). **Set-shifting was the smallest at 0.35.** Differences were larger in adults and children than in adolescents. [R6] A small adult study (22 vs 22) found less efficient interference control and task-set coordination, especially when there was little time to prepare for the next task. [R7]

For everyone, not only people with ADHD: in a controlled experiment, interrupted workers finished faster but reported more stress, frustration, time pressure and effort (Register A: Mark et al. 2008), and laboratory task-switching carries measurable time costs that rise with rule complexity and fall when cues are available (Register A: Rubinstein et al. 2001).

What it does not show. Lab switching costs do not translate into a fixed number of minutes lost in real work. Set-shifting is, on average, the *least* affected domain — which argues against the idea that people with ADHD "can't switch."

How LOOPING relates. A small loop (up to three tasks with visible finish lines), switching on purpose at a stopping point, and leaving a *return note* before switching all aim to reduce the cost of re-entry. Specific plans for unfinished work reduced measured interference from open goals in lab studies (Register A: Masicampo & Baumeister 2011). Guidelines list "reducing distractions" and "reinforcing verbal requests with written instructions" among environmental changes. [R38] None of this has been tested as a package.

2.3 Focusing — attention regulation and hyperfocus

What it feels like. Attention that will not land on the task in front of you — or lands so completely that you skip meals, miss messages, and lose the afternoon. Many people with ADHD describe both in the same week.

What the research shows. Across meta-analyses, the largest average group differences are in reaction-time variability (0.66) and vigilance (0.56) — the ability to hold steady attention over time. [R6] *Hyperfocus* — "complete absorption in a task, to a point where a person appears to completely ignore or tune out everything else" — is a recognised phenomenon with, so far, limited research and no agreed definition. [R8] A questionnaire study (a pilot of 251 adults and a preregistered replication of 372) found that people with more ADHD symptoms reported more frequent hyperfocus across school, hobbies and screen time. [R9]

What it does not show. There is no evidence that hyperfocus is reliably productive or controllable, and no consensus on how to measure it. "Hyperfocus as a superpower" is not supported.

How LOOPING relates. The *Act* step pairs a focus interval that fits the day with a *proof* — a reviewable result — because a timer records time, not the quality of attention. Guidelines recommend "shorter periods of focus with movement breaks." [R38] Brief changes in task demand prevented the usual decline in vigilance in a lab experiment (Register A: Ariga & Lleras 2011). LOOPING's specific timer presets (5/15/25/45 minutes) are a product choice; no study has compared them.

2.4 Stopping — disengaging, shutting down, and sleep

What it feels like. "Just one more thing" until 1 a.m. A tired body carrying a mind that will not stop. The next day pays the bill, and the day after that.

What the research shows. Clinical and population studies report insomnia in **43% to 80%** of adults with ADHD (the range in the general population is itself wide, about 31–56%). [R10] A pre-registered meta-analysis of 13 studies found adults with ADHD differed on seven of nine *self-reported* sleep measures (differences of 0.56 to 1.55 — moderate to very large) and on two of five wrist-monitor measures — they took longer to fall asleep (0.80) and slept less efficiently (–0.68). **Sleep-lab recordings showed no differences.** [R12, also R24] In a small clinic study, adults with ADHD and sleep-onset insomnia showed a later melatonin rise and a later sleep window than controls — a delayed body clock. [R11]

Sleep and ADHD influence each other in both directions; guidelines put healthy sleep practices first. [R13] "Bedtime procrastination" — not going to bed at the intended time with nothing stopping you — has been described in the general population and is linked to weaker self-regulation, but it has **not** been studied specifically in adults with ADHD. [R14]

Why this matters more than it feels: in a randomised lab study of healthy adults, restricting sleep to six hours or less per night for two weeks produced cumulative thinking deficits equal to up to two nights without any sleep — and **people were largely unaware of how impaired they had become.** [R15]

What it does not show. None of this is an individual sleep prescription. Wearable scores are estimates. The delayed-clock finding comes from 40 people at one clinic.

How LOOPING relates. *Close lightly* asks for a one-minute close: a tomorrow bridge (the next visible action), removing the one thing likely to block the next start, and ending the day while curiosity is still alive. Writing a specific to-do list for tomorrow helped people fall asleep sooner in one small sleep-lab study

(Register A: Scullin et al. 2018). The close is a product convention, not a treatment for insomnia.

SECTION 3

The everyday difficulties around the four moments

Time perception

Adults with ADHD commonly describe difficulty estimating time and the feeling that time passes without tasks getting done; a narrative review argues timing difficulties are central enough to be considered a diagnostic feature. [R16] The strongest numbers come from **children and adolescents**: a meta-analysis of 27 studies (1,620 with ADHD) found they perceived time less accurately and less precisely (moderate effects, g about 0.4–0.66) and tended to overestimate durations. [R17] No adult meta-analysis was found. "Time blindness" is a community term for a real, moderate difficulty — not a categorical blindness.

Working memory

A meta-analysis of 38 studies found moderate working-memory deficits in adults with ADHD in both verbal and visual-spatial memory; the deficits persist into adulthood, and inconsistent earlier findings were largely explained by differences in method. [R18] Across meta-analyses the average difference is about 0.54. [R6] Practical reading: holding a plan in your head is, on average, harder — which is the case for writing it down.

Emotion regulation and "rejection sensitivity"

A systematic review in the American Journal of Psychiatry concluded that emotion dysregulation is prevalent in ADHD across the lifespan and a major contributor to impairment; clinic-based studies put it at **30–70% of adults** with ADHD (population studies are still needed, so the true figure is probably lower). [R19] By contrast, **"rejection sensitive dysphoria" (RSD)** is not in any diagnostic manual. The term comes from magazine articles; peer-reviewed support so far is a focus-group study of 43 young adults (in which some participants did not experience it) and a five-person preprint. [R20, R21] Rejection sensitivity is a real experience for many people; RSD as a distinct condition is not established.

Routines, organisation and daily functioning

A scoping review of 31 studies found the difficulties cluster around sleep habits, eating, physical activity and sedentary behaviour — and that no validated tool exists to measure routines in ADHD, with most research done in children. [R22] Adult ADHD is significantly associated with days out of role and impaired functioning even after accounting for other conditions. [R30] Research on clutter, decision fatigue and ADHD specifically was not located in this review.

Sensory sensitivity

In 116 adults with ADHD, both over- and under-sensitivity to sensory input were more common than in the general population — especially for sound and activity level — and rose with ADHD severity independently of autistic traits. 43% of women and 22% of men reported atypical sensitivity. [R23] This is one clinic and self-report, but it supports treating light, noise and physical comfort as part of the work environment rather than a personal quirk.

SECTION 4

The real-world stakes

The World Federation of ADHD's consensus statement — 208 conclusions drawn only from very large studies and meta-analyses — states that people with ADHD are at increased risk for low quality of life, substance-use disorders, accidental injury, educational underachievement, unemployment, gambling, difficulties socialising, suicide and premature death. [R24] These are associations from registry and cohort data, not fates.

In Danish national registers (1.92 million people), people with ADHD had about twice the mortality rate of others after adjustment; accidents were the most common cause. The absolute rates were low (about 6 versus 2 deaths per 10,000 person-years), and the risk was highest for those first diagnosed as adults. [R25] In Swedish registers, adults with ADHD had about 1.5 times the rate of serious transport accidents. [R26]

Late diagnosis, especially in women

In childhood about three boys are diagnosed for every girl; in adulthood the ratio is close to one to one — strong evidence that girls and women are under-recognised early, often because they work hard to mask their difficulties. A systematic review of adult women's experiences found themes of social-emotional impact, difficult relationships, a sense of lacking control, and self-acceptance after diagnosis. [R27] An expert consensus describes how symptom differences, gender bias, other conditions and compensating strategies hide ADHD in women and girls. [R28]

"Masking" and "ADHD burnout"

Masking — effortful hiding of difficulties — is documented in the women's literature. [R27, R28] "ADHD burnout" is a widely used community term, but this review found **no peer-reviewed definition or measure for adults.** The pattern people describe — a strong period, overextension, unmanaged recovery, then collapse — is real to many; it just has not been formally

studied yet.

Why LOOPING takes the stakes seriously. The method treats recovery, sleep and a low-friction environment as part of the work, not as luxuries. That is a design stance informed by this evidence, not a claim to change these outcomes.

SECTION 5

What helps — and how strong the evidence is

Environmental changes (guideline-recommended)

The UK NICE guideline defines *environmental modifications* as changes to minimise the impact of ADHD on daily life — for example changes to lighting and noise, reducing distractions (such as using headphones), working in shorter periods of focus with movement breaks, and reinforcing spoken requests with written instructions. It recommends these be tried and reviewed before medication is offered to adults, and that the minimum non-drug support is a structured, supportive psychological intervention focused on ADHD with regular follow-up. [R38] These examples are expert-derived rather than trial-tested one by one. LOOPING's choices — a chosen work environment, short focus periods, written return notes and tomorrow bridges — are *consistent with* this list.

Structured psychological programs (CBT)

A meta-analysis of 32 studies found cognitive-behavioural programs for adult ADHD produced a **moderate** benefit versus control on self-reported symptoms (g = 0.65) and functioning (g = 0.51); effects were smaller against active comparison groups, and longer programs were not better. [R31] A Cochrane review of 14 trials (700 adults) reached similar conclusions: a large benefit versus waiting list on self-reported symptoms (SMD −0.84, moderate-quality evidence) but a small, non-significant difference versus supportive therapy (−0.16, low quality); overall the evidence is "very low to moderate quality." [R32] Reading: structure helps; what kind of structure matters less than showing up to one.

Mindfulness

Two meta-analyses report moderate reductions in inattention (about −0.66) and hyperactivity/impulsivity (about −0.53), and improvements in executive problems and mood — but most studies are small and many had no control group. [R33, R34]

Exercise

A 2026 meta-analysis of trials in adults with ADHD found a single bout of exercise produced a moderate, short-lived improvement in inhibitory control (g = 0.55) and a small improvement in core symptoms (g = 0.23); results for regular exercise programs were mixed. The authors call the evidence preliminary. [R35]

Coaching

A 12-session manualised coaching program showed medium-to-large improvements in symptoms, executive function and impairment — but with no control group and a homogeneous sample. Coaching is promising and unproven. [R36]

If-then plans, written plans, and sleep basics

If-then plans have strong general-population evidence and child-ADHD lab evidence (see 2.1). Writing specific plans for unfinished work reduced mental interference in lab studies, and a bedtime to-do list helped people fall asleep faster in one small study (Register A). Healthy sleep practices are the guideline first step for sleep problems in ADHD. [R13]

Body doubling

Working alongside another person is widely used and described in design research with neurodivergent participants — but **no controlled trial** of its effect exists. [R40, R42; Eagle et al. 2023] LOOPING's chosen-environment idea (a café, a library, a workspace with others) is compatible with body doubling; we make no efficacy claim.

Digital tools and AI

A review of 26 systematic reviews (34,442 participants, mostly children and adolescents) found improvements in inattention and executive function from digital interventions, but judged the evidence generally low quality and effectiveness "inconclusive"; some reviews reported side effects such as excessive gaming. [R39] A scoping review of assistive technologies for adults with ADHD notes a rapid rise in papers, most taking a treatment rather than a support perspective. [R40] The only AI-specific study located

asked 27 neuropsychologists to rate ChatGPT-generated executive-function plans: they found them theoretically consistent but flagged feasibility, personalisation and unvalidated techniques — and **no person with ADHD was treated** in that study. [R41] Mixed-reality body doubling exists only as a roadmap. [R42]

On our belief about the AI era. LOOPING's founding belief — that AI now carries much of the friction neurodivergent people struggled with — is exactly that: a belief and a reason for building. The peer-reviewed evidence on AI assistants for adult ADHD is early and thin. We will say so wherever we say the belief.

SECTION 6

Strengths — with their limits

A review of 31 behavioural studies found evidence for higher *divergent thinking* (generating many ideas) in people with high ADHD symptoms who do not meet full criteria, but not consistently in diagnosed groups; creative achievements were high in both; and there was no evidence of better convergent thinking. [R43] Small university studies found adults with ADHD did better on "unusual uses" tasks, reported more creative achievement, and preferred generating ideas over developing them. [R44] Interviews with six successful men with ADHD described cognitive dynamism, courage, energy, humanity, resilience and transcendence — including divergent thinking and hyperfocus. [R45]

Reading these honestly. Curiosity, idea generation and deep focus when something matters are real and reported often. The evidence is small, sometimes subclinical, and selected for success. We name the strengths; we do not sell them.

SECTION 7

Popular ideas with thin or no research support

These ideas circulate widely. Some may turn out to be right. Today, the evidence looks like this:

- **Rejection sensitive dysphoria as a diagnosis** — not in DSM-5-TR or ICD-11; peer-reviewed support is two small qualitative studies. Broader emotion dysregulation *is* well supported. [R19–R21]
- **"Interest-based nervous system"** — a popular reframing with no peer-reviewed validation; the nearest scientific relative is delay aversion, which is a model, not a proven mechanism. [R2]
- **"Time blindness" as a clinical entity** — timing difficulties are real and moderate; the adult evidence is narrative and the strongest numbers are from children. [R16, R17]
- **Body doubling works** — plausible, widely used, no controlled trial. [R40, R42]
- **"ADHD burnout"** — no peer-reviewed definition or measure for adults.
- **21 (or 66) days to form a habit** — general-population folklore; habit research in adults with ADHD is described as limited, with no validated measure. [R22]
- **Hyperfocus is a superpower** — hyperfocus is reported more often with higher symptoms, but nothing shows it is reliably productive. [R8, R9]
- **ADHD means enhanced creativity** — the effect appears mainly in high-symptom people without a diagnosis. [R43]
- **"Low dopamine" explains daily motivation** — a simplification of contested neurobiology; none of the sources here supports a plain low-dopamine story.
- **Sleep-lab abnormality in adult ADHD** — recordings show no group difference; the robust findings are self-report and wrist-monitor. [R12, R24]

- **If-then plans are proven for adults with ADHD** — proven in general adults and in children with ADHD in the lab; no adult ADHD trial. [R37]
- **Apps or AI assistants treat ADHD** — evidence is inconclusive and mostly from children; AI work is expert-rating and roadmaps only. [R39–R42]
- **Coaching is proven** — only uncontrolled before-and-after studies. [R36]

SECTION 8

What LOOPING does and does not claim

- LOOPING is a self-management **method**. It is not a treatment, therapy, or medical device, and it does not replace assessment or care.
- LOOPING has **not been tested in a trial**. We do not describe it as evidence-based, clinically proven, or validated.
- Several of LOOPING's design choices are **consistent with** strategies described in clinical guidelines and structured programs: environmental changes, short focus periods with breaks, written over verbal, specific plans for unfinished work, and protecting sleep. That is the whole claim.
- The timer presets, the three-task limit, the two-minute restart, the one-minute close and the Loop Integrity rubric are **product conventions**, not validated parameters.
- We report group findings as "associated with" and "on average," quote effect sizes with their labels, flag child-only evidence, and name community terms as community terms.
- Our belief that the AI era favours neurodivergent minds is a **belief**, stated as one, wherever it appears.
- Your own records are the only data about you. Personal experiments guide decisions; they do not prove causes. A rest day can stay unscored. A score is never a measure of worth.

APPENDIX

Source register B (45 sources, reviewed 18 September 2026)

Verification: **Fetched** = the publisher, PubMed/PMC, or DOI page was opened and read. **Search-result** = title, authors and year confirmed in search results only. Figures marked "not confirmed" were not seen on the page and are omitted from the notes above. Register A (15 sources: Harkin 2016; Gollwitzer & Brandstätter 1997; Milkman 2011; Lally 2010; Rubinstein 2001; Mark 2008; Stothart 2015; Masicampo & Baumeister 2011; Ariga & Lleras 2011; Van Dongen 2003; Scullin 2018; Aeon 2021; Wang 2021; Breines & Chen 2012; Dunlosky 2013) remains valid and is reproduced in the manual.

R1 — Barkley RA (1997). Behavioral inhibition, sustained attention, and executive functions: constructing a unifying theory of ADHD. Psychological Bulletin 121:65–94. PMID 9000892.

> **Design:** Theoretical review. **Finding:** Proposes a core deficit in behavioural inhibition linked to four executive functions; strongest evidence for inhibition, working memory, regulation of motivation and motor control; author calls for far more research. **Limits:** Theory, child-based; later work shows heterogeneity. **Verification:** Fetched

R2 — Sonuga-Barke EJS (2003). The dual pathway model of AD/HD. Neuroscience & Biobehavioral Reviews 27(7):593–604. doi 10.1016/j.neubiorev.2003.08.005.

> **Design:** Theoretical review. **Finding:** Two pathways: executive dysfunction and delay aversion (attempts to escape or avoid delay). **Limits:** Model; developed mainly in children. **Verification:** Fetched

R3 — Brown TE. Six-cluster executive-function model (activation, focus, effort, emotion, memory, action). CHADD/Attention magazine summary; Brown ADHD Clinic.

> **Design:** Clinical model. **Finding:** "Activation" = organising, prioritising, estimating time, getting started. **Limits:** Descriptive; no peer-reviewed validation located. **Verification:** Search-result

R4 — Netzer Turgeman R, Pollak Y (2025). Adult ADHD-related poor quality of life: investigating the role of procrastination. Scandinavian Journal of Psychology 66(5):729–737. doi 10.1111/sjop.13117.

> **Design:** Online survey, N = 132; mediation analysis. **Finding:** Higher ADHD symptoms correlated with more procrastination and lower quality of life; indirect path via procrastination. **Limits:** Cross-sectional, self-report, small. **Verification:** Fetched

R5 — Altgassen M, Scheres A, Edel M-A (2019). Prospective memory (partially) mediates the link between ADHD symptoms and procrastination. ADHD Attention Deficit and Hyperactivity Disorders 11(1):59–71. doi 10.1007/s12402-018-0273-x.

Design: 29 adults with ADHD vs 24 controls. **Finding:** Clear everyday prospective-memory deficits; performance mediated the ADHD–procrastination link. **Limits:** Very small sample. **Verification:** Fetched

R6 — Pievsky MA, McGrath RE (2018). The neurocognitive profile of ADHD: a review of meta-analyses. Archives of Clinical Neuropsychology 33(2):143–157. doi 10.1093/arclin/acx055.

Design: Review of 34 meta-analyses; 253 comparisons; all ages. **Finding:** 96% of comparisons favoured controls; mean effect 0.45; domain means from 0.35 (set shifting) to 0.54 (working memory); RT variability 0.66, vigilance 0.56, inhibition 0.52. **Limits:** Mixed ages; group averages. **Verification:** Fetched

R7 — King JA, Colla M, Brass M, Heuser I, von Cramon D (2007). Inefficient cognitive control in adult ADHD. Behavioral and Brain Functions 3:42. PMID 17708762.

Design: 22 adults with ADHD vs 22 controls. **Finding:** Inefficient interference control and task-set coordination; differences depended on preparation time. **Limits:** Tiny sample; lab tasks. **Verification:** Fetched

R8 — Ashinoff BK, Abu-Akel A (2021). Hyperfocus: the forgotten frontier of attention. Psychological Research 85(1):1–19. doi 10.1007/s00426-019-01245-8.

Design: Narrative review. **Finding:** Defines hyperfocus; research on its effects is limited; calls for investigation. **Limits:** No consensus definition. **Verification:** Fetched

R9 — Hupfeld KE, Abagis TR, Shah P (2019). Living "in the zone": hyperfocus in adult ADHD. ADHD Attention Deficit and Hyperactivity Disorders 11:191–208. doi 10.1007/s12402-018-0272-y.

Design: Pilot n = 251 + preregistered replication n = 372. **Finding:** Higher ADHD symptoms □ more frequent hyperfocus across school, hobbies, screen time. **Limits:** Self-report; symptom-based grouping; productivity not tested. **Verification:** Fetched

R10 — Wynchank D, Bijlenga D, Beekman AT, Kooij JJS, Penninx BW (2017). Adult ADHD and insomnia: an update of the literature. Current Psychiatry Reports 19:98. doi 10.1007/s11920-017-0860-0.

Design: Literature review. **Finding:** Insomnia prevalence in ADHD adults 43–80% across three studies; longitudinal evidence mixed. **Limits:** Narrative; general-population insomnia also common. **Verification:** Fetched

R11 — Van Veen MM, Kooij JJS, Boonstra AM, Gordijn MCM, Van Someren EJW (2010). Delayed circadian rhythm in adults with ADHD and chronic sleep-onset insomnia. Biological Psychiatry 67(11):1091–1096. PMID 20163790.

Design: 40 adults with ADHD + controls; actigraphy + melatonin. **Finding:** Longer sleep-onset latency, lower efficiency; delayed sleep window and melatonin onset in those with insomnia. **Limits:** Small; single clinic. **Verification:** Fetched

R12 — Díaz-Román A, Mitchell R, Cortese S (2018). Sleep in adults with ADHD: systematic review and meta-analysis. Neuroscience & Biobehavioral Reviews 89:61–71. doi 10.1016/j.neubiorev.2018.02.014.

Design: Pre-registered meta-analysis; 13 studies. **Finding:** Differences on 7/9 subjective measures (SMD 0.56–1.55) and 2/5 actigraphic (onset latency 0.80; efficiency −0.68); no polysomnography differences. **Limits:** Few studies. **Verification:** Fetched

R13 — Hvolby A (2015). Associations of sleep disturbance with ADHD: implications for treatment. ADHD Attention Deficit and Hyperactivity Disorders 7(1):1–18. doi 10.1007/s12402-014-0151-0.

Design: Narrative review. **Finding:** Relationship complex and multidirectional; healthy sleep practices are first-line. **Limits:** Largely paediatric evidence. **Verification:** Fetched

R14 — Kroese FM, De Ridder DT, Evers C, Adriaanse MA (2014). Bedtime procrastination: introducing a new area of procrastination. Frontiers in Psychology 5:611. PMID 24994989.

Design: Community survey, N = 177 (general population). **Finding:** Defines bedtime procrastination; linked to lower self-regulation and insufficient sleep. **Limits:** Not an ADHD sample; cross-sectional. **Verification:** Fetched

R15 — Van Dongen HPA, Maislin G, Mullington JM, Dinges DF (2003). The cumulative cost of additional wakefulness. Sleep 26(2):117–126. doi 10.1093/sleep/26.2.117.

Design: Randomised lab experiment, n = 48 healthy adults, 14 nights. **Finding:** 4 h or 6 h in bed produced cumulative, dose-dependent deficits equal to up to two nights of total sleep loss; subjects largely unaware. **Limits:** Healthy young adults; lab. **Verification:** Fetched

R16 — Ptacek R, Weissenberger S, Braaten E, et al. (2019). Clinical implications of the perception of time in ADHD: a review. Medical Science Monitor 25:3918–3924. doi 10.12659/MSM.914225.

Design: Narrative review. **Finding:** Difficulties estimating and discriminating time; proposes time perception as a diagnostic characteristic. **Limits:** Narrative; mixes child and adult studies. **Verification:** Fetched

R17 — Zheng Q, Wang X, Chiu KY, Shum KK (2022). Time perception deficits in children and adolescents with ADHD: a meta-analysis. Journal of Attention Disorders 26(2):267–281. PMID 33302769.

Design: Meta-analysis; 27 studies; 1,620 ADHD vs 1,249 controls. **Finding:** Less accurate ($g > 0.40$) and less precise ($g = 0.66$) time perception; tendency to overestimate. **Limits:** Children/adolescents only. **Verification:** Fetched

R18 — Alderson RM, Kasper LJ, Hudec KL, Patros CHG (2013). ADHD and working memory in adults: a meta-analytic review. Neuropsychology 27(3):287–302. doi 10.1037/a0032371.

Design: Meta-analysis of 38 studies. **Finding:** Moderate deficits in phonological and visuospatial working memory; persist into adulthood. **Limits:** Pooled values not in abstract (not confirmed). **Verification:** Fetched

R19 — Shaw P, Stringaris A, Nigg J, Leibenluft E (2014). Emotion dysregulation in ADHD. American Journal of Psychiatry 171(3):276–293. doi 10.1176/appi.ajp.2013.13070966.

Design: Systematic narrative review. **Finding:** Emotion dysregulation prevalent across the lifespan; 30–70% of adults in clinic-based studies. **Limits:** Clinic samples inflate rates; not a DSM criterion. **Verification:** Fetched

R20 — Ginapp CM, Greenberg NR, MacDonald-Gagnon G, Angarita GA, Bold KW, Potenza MN (2023). "Dysregulated not deficit": a qualitative study on symptomatology of ADHD in young adults. PLoS One 18(10):e0292721.

Design: 9 focus groups; N = 43 adults 18–35; 84% female. **Finding:** Attention and emotional dysregulation including hyperfocus and rejection sensitivity described; some did not experience RSD. **Limits:** Qualitative; self-selected. **Verification:** Fetched

R21 — Rowney-Smith A, Sutton B, Quadt L, Eccles JA (2024). The lived experience of rejection sensitivity in ADHD: a qualitative exploration. medRxiv preprint doi 10.1101/2024.11.16.24317418.

Design: Two focus groups; N = 5. **Finding:** Themes of withdrawal, masking, bodily sensations; authors note few studies exist and the RSD concept traces to magazine articles. **Limits:** Five participants; not peer reviewed. **Verification:** Fetched

R22 — Almudayfir I, Abdulkarim L, Rosenstein R, Yuen HK (2026). Daily routines and habits in individuals with ADHD: a scoping review. Behavioral Sciences 16(6):1000. doi 10.3390/bs16061000.

Design: Scoping review; 31 studies. **Finding:** Difficulties cluster in sleep hygiene, feeding, activity, sedentary behaviour; no validated routines measure; mostly paediatric. **Limits:** Scoping; adult evidence thin. **Verification:** Fetched

R23 — Bijlenga D, Tjon-Ka-Jie JYM, Schuijers F, Kooij JJS (2017). Atypical sensory profiles as core features of adult ADHD, irrespective of autistic symptoms. European Psychiatry 43:51–57. PMID 28371743.

Design: 116 adults with ADHD vs norms. **Finding:** More hyper- and hyposensitivity, especially auditory and activity level; dose-response with ADHD score; 43% of women, 22% of men. **Limits:** Self-report; single clinic; norm comparison. **Verification:** Fetched

R24 — Faraone SV, Banaschewski T, Coghill D, et al. (2021). The World Federation of ADHD International Consensus Statement: 208 evidence-based conclusions. Neuroscience & Biobehavioral Reviews 128:789–818. doi 10.1016/j.neubiorev.2021.01.022.

Design: Consensus; only studies > 2,000 participants or meta-analyses of 5+ studies. **Finding:** Increased risk for low quality of life, substance use, injury, underachievement, unemployment, gambling, social difficulty, suicide, premature death; polysomnography shows no sleep differences. **Limits:** Associations. **Verification:** Fetched

R25 — Dalsgaard S, Østergaard SD, Leckman JF, Mortensen PB, Pedersen MG (2015). Mortality in children, adolescents, and adults with ADHD: a nationwide cohort study. Lancet 385(9983):2190–2196. PMID 25726514.

Design: Danish registers; 1.92 million; 32,061 with ADHD. **Finding:** Adjusted mortality rate ratio 2.07 (1.70–2.50); accidents most common cause; 4.25 for adult-diagnosed; 1.50 after excluding conduct/substance conditions. **Limits:** Low absolute rates; diagnosed cases only. **Verification:** Fetched

R26 — Chang Z, Lichtenstein P, D'Onofrio BM, Sjölander A, Larsson H (2014). Serious transport accidents in adults with ADHD and the effect of medication. JAMA Psychiatry. PMID 24477798.

Design: Swedish registers; 17,408 adults with ADHD. **Finding:** Hazard ratio about 1.47 (men) and 1.45 (women) for serious transport accidents. **Limits:** Registry outcome; medication finding is context only. **Verification:** Fetched

R27 — Attoe DE, Climie EA (2023). Miss. Diagnosis: a systematic review of ADHD in adult women. Journal of Attention Disorders 27(7):645–657. doi 10.1177/10870547231161533.

Design: Systematic review; 8 articles. **Finding:** Themes: social-emotional impact, difficult relationships, lack of control, self-acceptance after diagnosis; child sex ratio about 3:1 vs about 1:1 in adults; masking. **Limits:** Few, mostly qualitative studies. **Verification:** Fetched

R28 — Young S, Adamo N, Ásgeirsdóttir BB, et al. (2020). Females with ADHD: an expert consensus statement taking a lifespan approach. BMC Psychiatry 20:404. doi 10.1186/s12888-020-02707-9.

Design: UK expert consensus. **Finding:** Symptom differences, gender bias, comorbidity and compensatory strategies mask ADHD in females; clinic referral ratios 3:1 to 16:1. **Limits:** Consensus opinion. **Verification:** Fetched

R29 — Song P, Zha M, Yang Q, Zhang Y, Li X, Rudan I (2021). The prevalence of adult ADHD: a global systematic review and meta-analysis. Journal of Global Health 11:04009. doi 10.7189/jogh.11.04009.

Design: 40 articles; 30 countries; PROSPERO-registered. **Finding:** Persistent adult ADHD 2.58% (1.51–4.45) and symptomatic 6.76% (4.31–10.61) adjusted to 2020 demographics; declines with age. **Limits:** Very high heterogeneity; screening tools in many studies. **Verification:** Fetched

R30 — Fayyad J, Sampson NA, Hwang I, et al. (2017). The descriptive epidemiology of DSM-IV adult ADHD in the WHO World Mental Health Surveys. ADHD Attention Deficit and Hyperactivity Disorders 9:47–65. doi 10.1007/s12402-016-0208-3.

Design: 20 surveys; 26,744 respondents. **Finding:** Current adult ADHD 2.8% on average; highly comorbid; associated with role impairment; treatment-seeking low. **Limits:** DSM-IV; retrospective onset. **Verification:** Fetched

R31 — Knouse LE, Teller J, Brooks MA (2017). Meta-analysis of cognitive-behavioral treatments for adult ADHD. Journal of Consulting and Clinical Psychology 85(7):737–750. doi 10.1037/ccp0000216.

Design: 32 studies; up to 896 participants. **Finding:** Versus control: symptoms g = 0.65 (0.44–0.86), functioning g = 0.51; smaller vs active controls; longer treatment not better. **Limits:** Heterogeneous; a published correction revised some values, interpretation unchanged. **Verification:** Fetched

R32 — Lopez PL, Torrente FM, Ciapponi A, et al. (2018). Cognitive-behavioural interventions for ADHD in adults. Cochrane Database of Systematic Reviews 3:CD010840. doi 10.1002/14651858.CD010840.pub2.

Design: 14 RCTs; 700 adults. **Finding:** CBT vs waiting list SMD −0.84 (moderate quality); vs supportive therapy −0.16 (not significant, low quality); evidence very low to moderate quality. **Limits:** Small trials; figures taken from NIHR Evidence and cochrane.org summaries. **Verification:** Fetched

R33 — Cairncross M, Miller CJ (2020). The effectiveness of mindfulness-based therapies for ADHD: a meta-analytic review. Journal of Attention Disorders 24(5):627–643. doi 10.1177/1087054715625301.

Design: 10 studies (inattention), 9 (hyperactivity); mixed ages. **Finding:** Inattention d = −0.66; hyperactivity/impulsivity d = −0.53. **Limits:** Small, mostly uncontrolled early studies. **Verification:** Fetched

R34 — Poissant H, Moreno A, Potvin S, Mendrek A (2020). A meta-analysis of mindfulness-based interventions in adults with ADHD. Mindfulness 11:2643–2659. doi 10.1007/s12671-020-01458-8.

> **Design:** 14 studies; 834 adults. **Finding:** Effective for ADHD symptoms, depression and dysexecutive problems post-intervention. **Limits:** Pooled sizes not in abstract; many single-arm. **Verification:** Fetched

R35 — Xu S, Zhao C, Hu L (2026). The effects of acute and chronic exercise on executive functions and core symptoms in adults with ADHD: systematic review and meta-analysis. Psychology of Sport and Exercise 84:103088. PMID 41638541.

> **Design:** 14 studies reviewed; 8 in meta-analysis. **Finding:** Acute exercise: inhibitory control g = 0.55 (0.32–0.79); core symptoms g = 0.23; chronic exercise mixed. **Limits:** Very small literature; short-lived effects. **Verification:** Fetched

R36 — Ahmann E, Saviet M, Otto M (2026). Coaching for adults with ADHD: a prospective study. American Journal of Lifestyle Medicine. doi 10.1177/15598276261432960.

> **Design:** Single-arm pre-post; 12 sessions; N not in abstract. **Finding:** Medium-to-large improvements in symptoms, executive function, impairment. **Limits:** No control group; homogeneous sample. **Verification:** Fetched

R37 — Gawrilow C, Gollwitzer PM (2008). Implementation intentions facilitate response inhibition in children with ADHD. Cognitive Therapy and Research 32:261–280; and Gawrilow, Gollwitzer & Oettingen (2011), Journal of Social and Clinical Psychology 30(6):616–646.

> **Design:** Lab experiments; children with ADHD. **Finding:** If-then plans improved go/no-go inhibition to the level of children without ADHD and reduced shifting errors. **Limits:** Children; lab; no adult ADHD trial located. **Verification:** Search-result

R38 — NICE (2018, updated 2019). Attention deficit hyperactivity disorder: diagnosis and management. NG87. nice.org.uk/guidance/ng87.

> **Design:** Clinical guideline. **Finding:** Defines environmental modifications (lighting, noise, headphones, shorter focus periods with movement breaks, written instructions); offer medication to adults only after modifications are implemented and reviewed; minimum non-drug offer is a structured supportive psychological intervention. **Limits:** UK guideline; examples expert-derived. **Verification:** Fetched

R39 — Gabarron E, Denecke K, Lopez-Campos G (2025). Evaluating the evidence: a systematic review of reviews of the effectiveness and safety of digital interventions for ADHD. BMC Psychiatry. doi 10.1186/s12888-025-06825-0.

> **Design:** 26 systematic reviews; 34,442 participants; mostly children. **Finding:** Improvements in inattention and executive function but low-quality evidence; effectiveness inconclusive; adverse effects reported in 8/26 reviews. **Limits:** Mostly paediatric; games/cognitive training dominate. **Verification:** Fetched

R40 — Tan V, Jost L, Gerken J, Pascher M (2026). Preliminary results of a scoping review on assistive technologies for adults with ADHD. arXiv:2601.21791.

> **Design:** Scoping review; 46 papers. **Finding:** Most work takes a treatment rather than support perspective; rapid growth in papers. **Limits:** Not peer reviewed; work in progress. **Verification:** Fetched

R41 — Dahò M, Caci B (2025). Exploring AI-assisted design of executive function rehabilitation programs for individuals with ADHD: evaluation of ChatGPT outputs. BMC Psychology 14(1):25. doi 10.1186/s40359-025-03729-2.

> **Design:** 27 neuropsychologists rated AI-generated plans. **Finding:** Theoretically consistent; concerns about feasibility, personalisation, unvalidated techniques; no users with ADHD treated. **Limits:** Expert-rating only. **Verification:** Fetched

R42 — Tan V, Hegemann K, Gerken J (2026). A roadmap of mixed reality body doubling for adults with ADHD. arXiv:2605.07851.

> **Design:** Framework paper. **Finding:** Identifies the need for empirical studies of body doubling. **Limits:** No data; not a journal article. **Verification:** Fetched

R43 — Hoogman M, Stolte M, Baas M, Kroesbergen E (2020). Creativity and ADHD: a review of behavioral studies, the effect of psychostimulants and neural underpinnings. Neuroscience & Biobehavioral Reviews 119:66–85. PMID 33035524.

> **Design:** Review of 31 behavioural studies. **Finding:** Higher divergent thinking mainly in subclinical high-symptom groups; high creative achievement in both; no evidence of better convergent thinking. **Limits:** Mixed designs; positive-aspects research limited. **Verification:** Fetched

R44 — White HA, Shah P (2006; 2011). Uninhibited imaginations: creativity in adults with ADHD; Creative style and achievement in adults with ADHD. Personality and Individual Differences 40:1121–1131; 50:673–677.

> **Design:** Small university-student comparisons. **Finding:** Better unusual-uses (divergent) performance; higher verbal originality and self-reported creative achievement; preference for idea generation. **Limits:** Small samples; self-report. **Verification:** Search-result

R45 — Sedgwick JA, Merwood A, Asherson P (2019). The positive aspects of ADHD: a qualitative investigation of successful adults with ADHD. ADHD Attention Deficit and Hyperactivity Disorders 11:241–253. doi 10.1007/s12402-018-0277-6.

> **Design:** In-depth interviews; six successful adult men. **Finding:** Themes: cognitive dynamism, courage, energy, humanity, resilience, transcendence. **Limits:** N = 6; all male; selected for success. **Verification:** Fetched

Also consulted and set aside: Yang X et al. (2025), Frontiers in Psychiatry 16:1516878, a network meta-analysis of non-drug treatments for adults with ADHD — its reported effect

sizes (SMD −4 to −7) are implausibly large for behavioural trials and are not cited here. Eagle T et al. (2023), ASSETS '23, on body doubling — the publisher page could not be opened, so only its existence is confirmed.