# The Silent Continuum: ADHD as a Precursor to Alzheimer's Disease

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#### **Abstract**

Attention-Deficit/Hyperactivity Disorder (ADHD) has traditionally been seen as a childhood neurodevelopmental disorder. Alzheimer's disease (ALZ), on the other hand, is viewed as a neurodegenerative disorder of old age. These two conditions have been treated as clinically and temporally distinct. However, emerging evidence and pattern-based synthesis suggest a possible continuum: that lifelong untreated or unrecognized ADHD may wear down neural systems in a way that increases susceptibility to Alzheimer's later in life. This paper explores the biochemical, behavioral, and generational blind spots that have masked this connection—and proposes that the current Alzheimer's epidemic may, in part, be a long-delayed consequence of the ADHD epidemic that went undiagnosed for much of the 20th century.

## 1. Historical Blind Spot: ADHD Wasn't a Diagnosis When ALZ Was Discovered

Alzheimer's disease was first described in 1906 by Dr. Alois Alzheimer after observing progressive memory loss and cognitive decline in a 50-year-old woman named Auguste D. The clinical world accepted this as a form of **senile dementia**, a mysterious ailment tied to aging.

But what was not available in 1906—or even by the mid-20th century—was a **robust** understanding of ADHD. The first clinical definitions of ADHD-like symptoms appeared only in the 1950s and 60s, and formal diagnostic criteria did not solidify until the DSM-III in 1980.

For decades, people born before the 1970s—especially women—lived without the language, frameworks, or medical support to recognize the signs of ADHD. Traits like distractibility, impulsive speech, or emotional hypersensitivity were often written off as "personality quirks," "nervousness," or simply **being high-strung**.

That meant tens of millions of people born between 1900 and 1970 may have had **undiagnosed lifelong ADHD**—untreated, unregulated, and unaccounted for in any long-term dementia studies.

### 2. The ADHD-Alzheimer's Continuum: A Working Model

We propose a continuum hypothesis:

ADHD is not merely a childhood disorder—it may be the first phase of a lifelong cognitive phenotype that, under sustained metabolic stress and neural wear, transitions into late-life neurodegeneration that presents as Alzheimer's disease.

This progression involves multiple shared pathways:

Mechanism	In ADHD	In Alzheimer's
Dopaminergic dysregulation	Low dopamine tone in prefrontal cortex	Dopamine loss in early ALZ impairs attention, motivation
Sleep disruption	Chronic insomnia, delayed sleep onset	Glymphatic failure leads to amyloid buildup
Elevated stress hormones	Chronic cortisol elevations from ADHD-related life stress	Cortisol accelerates hippocampal atrophy in ALZ
Inflammation	ADHD brains show elevated microglial activation	Neuroinflammation is central to ALZ progression
Cognitive noise	Rapid, interruptive thoughts	Early ALZ shows "noisy" brain activity compensating for loss
Social disconnection	ADHD can lead to strained relationships, isolation	Social isolation is a known ALZ risk factor
Executive function burnout	Impaired task switching, memory recall	Global executive breakdown in later ALZ stages

This model does not claim that ADHD always leads to ALZ, but that untreated ADHD may increase long-term risk, especially when combined with genetic risk factors like APOE-4, chronic sleep loss, poor diet, and trauma.

## 3. Gender Bias and Beauty Trauma: An Overlooked Subgroup

One of the least discussed aspects of the ADHD-ALZ connection is **gender bias in diagnosis**.

For decades, ADHD was perceived as a disorder of **hyperactive boys**. Girls, who were often more **inattentive than impulsive**, slipped through the cracks. In adulthood, they were mislabeled as anxious, depressed, or simply emotional. When those women were also **attractive**, they faced a second layer of psychological stress: **persistent**, **unwanted male attention**.

These women developed advanced **emotional shielding mechanisms**:

- Forgetting unpleasant encounters
- Dissociating from daily overload
- Performing perfectionism as self-defense
- Avoiding vulnerable memory recall as protection

In hindsight, these behaviors may have *looked* like grace under pressure—but they came at a neurological cost. The **practice of forgetting**—as self-care—may have set the stage for later-life **neurological pruning** that veered into **pathological forgetting**.

### 4. The Modern Epidemic: A Perfect Cognitive Storm

Today, over **6.5 million Americans are living with Alzheimer's**, and that number is expected to double by 2050. Standard explanations focus on:

- Aging populations
- Genetics
- Poor diet and sedentary lifestyles
- Environmental toxins

But there is something missing in the equation.

Consider this: the **first generation of children born into the ADHD diagnosis era (post-1980)** are now entering their 40s and 50s. And the **previous generation**—those **never diagnosed**—are now the bulk of Alzheimer's patients. We may be witnessing the **long tail** of an unrecognized national ADHD epidemic. And because the **DSM-defined ADHD cohort is new**, we have not yet seen how *modern*, *treated ADHD patients* will age.

What if **lifelong ADHD**, particularly in its untreated form, is a **precursor state** to neurodegeneration?

### 5. Early Interventions, Late-Stage Impacts

The idea of ADHD evolving into Alzheimer's opens a door to **early interventions** that may significantly delay or even prevent neurodegeneration:

Intervention	Known ADHD Benefit	Potential ALZ Impact
Omega-3s	Improve attention, reduce inflammation	Neuroprotection, reduced amyloid load
Magnesium	Calms neural overactivity	Improves sleep and slows cognitive decline

Intervention	Known ADHD Benefit	Potential ALZ Impact
L-Theanine	Smooths hyperactivity	Reduces anxiety and stress-driven damage
Meditation	Improves executive control	Slows cortical thinning, boosts default mode network integrity
Low-carb/high-fat diets	Stabilize blood sugar in ADHD	Improve mitochondrial function, lower tau pathology
Stimulants (low dose)	Improve working memory	May protect executive circuits (controversial)

We need **cross-disciplinary trials**—studying ADHD therapeutics in at-risk older adults **before** symptoms emerge.

### 6. Redefining the Arc of the Aging Mind

If this theory holds—even in part—it would rewrite much of what we believe about cognitive aging:

- That Alzheimer's isn't always a separate disease, but in some cases, the cumulative endpoint of a life lived in neurological overdrive.
- That modern medicine's fragmentation—where psychiatry ends and neurology begins—has blinded us to continuity of brain patterns across decades.
- That prevention may not mean solving Alzheimer's at 70, but calming ADHD at 35.

### 7. Urgent Calls for Research

This hypothesis is testable. Here are concrete steps for the research community:

#### 1. Retrospective Cohort Analysis

Examine historical ADHD symptomatology (via self-reports or family interviews) in Alzheimer's patients versus controls.

#### 2. Neuroimaging Comparison Studies

Look for shared brain patterns in frontal and parietal networks across ADHD and early ALZ.

#### 3. Longitudinal ADHD Aging Studies

Follow aging ADHD patients who have been treated since youth versus those untreated.

#### 4. Medication Repositioning Trials

Test whether ADHD medications or nutraceuticals delay cognitive decline in APOE-4 carriers.

## **Conclusion: From Disorder to Pattern Recognition**

If we can reframe ADHD not as a childhood disease but as a **lifelong cognitive rhythm**—one that must be modulated, calmed, and nourished—we may find that **Alzheimer's is not a bolt from the blue**, but the final crescendo of a life played in too many keys at once.

This is not blame. This is recognition.

Recognition that **attention is energy**, and that energy must be guided, not just endured.

The Alzheimer's crisis may be a warning siren not just for aging brains—but for **overstimulated minds** that have never been taught how to rest.

If we want a world with fewer endings like Alzheimer's, we must build a world where the high-octane minds of the sensitive, the brilliant, and the beautiful are cared for—early, gently, and thoroughly.

We may yet change the ending by rewriting the beginning.

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## Research Appendix 1:

### **Historical Figures Likely to Have Exhibited ADHD Traits**

While ADHD was only formally recognized in the late 20th century (DSM, 1980), many notable individuals throughout history displayed patterns of impulsivity, restlessness, high energy, distractibility, or hyperfocus—hallmark traits of what we now consider ADHD. This list does not serve as retrospective diagnosis, but rather as **pattern recognition** to support the broader theory that **neurodivergence has always existed**, often fueling creative genius and innovation while exacting a long-term cognitive toll.

#### 1. Leonardo da Vinci (1452–1519)

- Frequently left projects unfinished
- Noted for extreme curiosity and constant multitasking
- Sketched engineering plans, human anatomy, military devices—all at once
- Easily bored by formal education or structure

#### 2. Thomas Edison (1847–1931)

- Expelled from school; considered "difficult"
- Slept only a few hours per day; mind constantly racing
- Held over 1,000 patents—worked on dozens of experiments simultaneously

#### 3. Benjamin Franklin (1706–1790)

- Juggled careers as printer, inventor, diplomat, scientist, and philosopher
- Known for impulsive decisions, erratic sleeping, and intense bursts of productivity
- Noted as being socially distractible but deeply insightful

#### 4. Nikola Tesla (1856–1943)

- Hyperfocused on inventions, often to the point of neglecting basic needs
- Reclusive and eccentric with obsessive attention to sensory input
- Claimed to "see" inventions in his mind before building them

#### 5. Winston Churchill (1874–1965)

- Reported school difficulties and behavior issues
- Demonstrated impulsivity and emotional extremes
- Creative writer, wartime strategist, and orator—often working under intense pressure and deadlines

#### 6. Mozart (1756–1791)

- Wrote music prolifically but was prone to social and behavioral outbursts
- Often distracted during performances
- Hyperactivity and impulsiveness documented in letters and anecdotes

#### 7. Ernest Hemingway (1899–1961)

- Rapid swings between intense creative bursts and erratic behavior
- Engaged in thrill-seeking (bullfighting, war correspondence)
- Impulsivity, restlessness, and poor long-term planning

#### 8. Albert Einstein (1879–1955)

- Didn't speak fluently until age 5
- Poor performance in traditional schooling
- Highly distractible in social settings, but laser-focused on physics and math

#### 9. Joan of Arc (1412–1431)

- Hyperfocused on visions and missions
- Defied authority impulsively, took command roles young
- Displayed driven, almost obsessive attention to singular goals

#### 10. Theodore Roosevelt (1858–1919)

- Physically hyperactive, even as a sickly child
- Engaged in multiple simultaneous pursuits: politics, naturalism, writing, war
- Known for impulsive speeches and bold leadership

### Why This Appendix Matters

These figures represent a historical throughline: people whose **restless**, **high-speed cognition** powered genius, leadership, or invention—but who often **struggled with social norms**, **consistency**, **and long-term peace of mind**. Some lived short lives. Others burned through marriages, friends, or their health.

In a world that had no language for ADHD, their behaviors were labeled as eccentric, brilliant, difficult, or unstable.

This context is critical for modern ADHD/ALZ research:

- It shows that ADHD is not a new phenomenon—just newly named.
- It reinforces that neurodivergent minds have **shaped human history**.

• It suggests that **brain wear**—from relentless cognitive engagement—may have long-term effects, particularly in those lacking supportive environments or coping structures.

As we reframe the potential ADHD–Alzheimer's continuum, these figures serve as both **beacons of potential** and **cautionary tales**. Their lives may offer blueprints—not just of success—but of what happens when brilliance burns too hot for too long.

## Appendix 2: Potential Research Modalities

### **Nutritional Convergence in ADHD and Alzheimer's Disease**

As we deepen our exploration into the possible continuum between Attention-Deficit/Hyperactivity Disorder (ADHD) and Alzheimer's disease (ALZ)—including vascular dementia (VD)—a compelling intersection emerges in the domain of nutrition and metabolic health.

Decades of siloed research have independently advanced dietary strategies for these conditions. What has remained underappreciated until recently is that the same nutritional protocols used to stabilize ADHD symptoms also show promise in slowing or reversing cognitive decline in ALZ and VD.

This convergence is not incidental—it suggests a **shared metabolic vulnerability** that spans the lifespan. Most importantly, it opens the door to **cross-pollinated research** and unified clinical approaches that could transform outcomes for millions.

## 1. Honoring the Work of Dr. Dale Bredesen and Metabolic Reframing of ALZ

Dr. Dale Bredesen and colleagues have done **groundbreaking work** in reframing Alzheimer's disease not merely as an inevitable neurodegeneration but as a **metabolically reversible condition**, at least in early stages. His team's **ReCODE protocol** emphasizes:

- Low-glycemic, ketogenic-style diets
- Fasting intervals to restore insulin sensitivity
- Reduction of inflammatory inputs
- Support for mitochondrial function and detoxification pathways

In short, Bredesen proposes that ALZ is often a form of "type 3 diabetes"—a disease of glucose mismanagement in the brain.

The results are compelling. Clinical trials of Bredesen's protocols have shown **reversals of cognitive decline** in a subset of patients, especially when applied early and holistically.

But this concept—of dietary regulation as cognitive medicine—also mirrors recent advances in **ADHD dietary treatment**.

### 2. ADHD and the Sugar Roller Coaster: Nutritional Insights

For ADHD, nutrition has long been considered **adjunctive** to pharmacological therapy. But research increasingly supports the idea that **blood sugar regulation plays a central role** in symptom management.

#### **Key Findings:**

#### • High-Glycemic Foods and ADHD:

Diets high in refined sugars and processed carbohydrates are associated with worsened ADHD symptoms, including irritability, impulsivity, and inattention. A 2011 study in *The Lancet* found that food additives and high sugar intake **significantly worsened behavior** in children with ADHD.

- High-Fructose Corn Syrup (HFCS):
  - A 2016 study in *Nutritional Neuroscience* linked **HFCS consumption** to **altered dopamine signaling**—a core dysfunction in ADHD. Similar findings in rodent models showed that HFCS impaired working memory and increased hyperactivity.
- Ketogenic and Low-Carb Diets for ADHD:

  Emerging protocols suggest that reducing sugar spikes and stabilizing energy via

  protein- and fat-forward meals may reduce ADHD symptoms by improving glucose
  transport across the blood-brain barrier, increasing brain-derived neurotrophic
  factor (BDNF), and lowering neuroinflammation.

## 3. Shared Nutritional Therapeutics: A Cross-Condition Matrix

Below is a table of **nutritional interventions** that show benefit across ADHD, ALZ, and VD:

Nutritional Component	ADHD Impact	ALZ/VD Impact
Omega-3 Fatty Acids (EPA/DHA)	Improves attention, reduces impulsivity	Supports synaptic integrity, lowers brain inflammation
Magnesium (esp. glycinate/threonate)	Calms hyperactivity, improves sleep	Enhances memory and neuroplasticity
Ketogenic or Low-Carb Diets	Reduces glycemic swings, stabilizes mood	Improves mitochondrial function, reduces amyloid burden
Intermittent Fasting	Enhances dopamine regulation	Increases autophagy, reduces insulin resistance
B Vitamins (B6, B12, Folate)	Supports neurotransmitter synthesis	Reduces homocysteine, a vascular risk factor in dementia
Zinc	Modulates dopamine, reduces impulsivity	Essential for memory and synaptic health

Nutritional Component Polyphenols (Resveratrol, Curcumin) ADHD Impact Anti-inflammatory, brain protective ALZ/VD Impact
Inhibit plaque formation, support vascular function

## 4. A New Research Pathway: The Metabolic-Neurocognitive Axis

The parallel therapeutic strategies across ADHD and ALZ suggest an underlying **metabolic-neurocognitive axis**—a physiological pathway wherein:

- Blood sugar regulation
- Insulin sensitivity
- Inflammatory tone
- Mitochondrial resilience

...are shared determinants of brain function across the lifespan.

In this view, ADHD is a **hyper-reactive state** of the axis, while Alzheimer's is its **long-term collapse**.

We propose that future research initiatives be designed to integrate these conditions into a unified framework. This would include:

#### a. Shared Longitudinal Cohorts

Track diagnosed ADHD patients into older age with periodic assessments of memory, glucose metabolism, and neuroimaging.

#### **b.** Nutritional Intervention Trials

Test ketogenic or low-glycemic interventions across both ADHD and early-stage cognitive decline groups, measuring not just behavioral changes but **biomarkers of neurodegeneration**.

#### c. Brain Energy Mapping Studies

Use functional MRI and PET imaging to observe brain fuel utilization (glucose vs. ketones) in both hyperactive and degenerative brains.

#### d. Prevention Clinics

Develop **cross-specialty clinics** (psychiatry, neurology, endocrinology) focused on **early metabolic correction** for at-risk individuals with ADHD traits and genetic ALZ risk factors.

## 5. Policy Implications: Reducing Burden, Costs, and Suffering

Bringing ADHD, Alzheimer's, and metabolic disorders into one **integrated care model** would have immense public health value.

#### Benefits Include:

- Reduced medical costs through early dietary and lifestyle interventions
- Lower caregiver burden through slower disease progression
- Recognition and treatment of underdiagnosed adults who were missed in childhood
- **Greater continuity of care**, connecting pediatric ADHD treatment with geriatric memory care

Most of all, this would **humanize treatment** for those whose cognitive journeys defy tidy diagnostic labels.

### Conclusion: Toward a Lifespan Model of Cognitive Care

It's time to rethink our silos.

- What we now call "ADHD" may be the brain shouting for **fuel stability** and **focus** scaffolding.
- What we call "Alzheimer's" may be the **silent collapse** of that same brain after decades of metabolic strain.
- What we call "diabetes" may be the **bloodstream's response** to a lifetime of mismatched energy input and neural demand.

We propose a **lifespan-based**, **systems biology approach**—where cognition is seen not as separate disorders of childhood or aging, but as an **interwoven trajectory** of energy, inflammation, and plasticity.

Let this be the beginning of a **new chapter in cognitive health**—one that recognizes the quiet suffering of the overlooked, the misunderstood, and the undiagnosed, while offering real pathways to healing.

## Research Starting Points

## Theme 1: Shared Pathways (Dopaminergic Dysregulation, Sleep Disruption, Cortisol/Stress)

- Title: Attention-Deficit/Hyperactivity Disorder as a Potential Risk Factor for Dementia Disorders: A Systematic Review and Meta-Analysis (2024).
  - Link: https://pubmed.ncbi.nlm.nih.gov/38461502/
  - Description: Meta-analysis of 7 studies showing positive associations between ADHD and all-cause dementia/AD; highlights shared dopaminergic pathways and executive function deficits as mediators, with odds ratios for increased risk.
- Title: Hypothalamic-Pituitary-Adrenal (HPA) Axis: Unveiling the Potential Link
  Between Stress-Induced Pathways and Alzheimer's Disease Pathogenesis (2024).
  Link: <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC11416836/">https://pmc.ncbi.nlm.nih.gov/articles/PMC11416836/</a>
  Description: Reviews HPA axis dysregulation linking chronic stress (elevated cortisol) to
  AD; discusses how sustained glucocorticoid exposure accelerates amyloid-beta
  accumulation and tau pathology, paralleling ADHD-related life stress.
- Title: Circadian Rhythms and Attention Deficit Hyperactivity Disorder: The What, the When and the Why (2016, updated review).
  Link: <a href="https://www.sciencedirect.com/science/article/abs/pii/S0278584616300082">https://www.sciencedirect.com/science/article/abs/pii/S0278584616300082</a>
  Description: Examines sleep/circadian disturbances in ADHD, linking delayed melatonin onset and dopamine dysregulation to cognitive impairments; proposes mechanistic ties to later neurodegenerative risks like AD.
- Title: What Is the Link Between Attention-Deficit/Hyperactivity Disorder Symptoms and Sleep Disturbances? The Role of Polysomnography and Actigraphy in Research (2020). Link: <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC7445427/">https://pmc.ncbi.nlm.nih.gov/articles/PMC7445427/</a>
  Description: Analyzes shared neural correlates (e.g., prefrontal dopamine circuits) between ADHD symptoms and sleep issues; uses fMRI/EEG data to show how chronic disruption may predispose to AD-like memory decline.
- Title: Targeting Psychologic Stress Signaling Pathways in Alzheimer's Disease (2017).
   Link: <a href="https://molecularneurodegeneration.biomedcentral.com/articles/10.1186/s13024-017-0190-z">https://molecularneurodegeneration.biomedcentral.com/articles/10.1186/s13024-017-0190-z</a>
  - Description: Summarizes stress-AD links via cortisol-mediated neuroinflammation; suggests early stress modulation (relevant to ADHD) could prevent hippocampal atrophy.
- Title: High Cortisol and the Risk of Dementia and Alzheimer's Disease: A Review of the Literature (2019).
  - Link: <a href="https://www.frontiersin.org/journals/aging-neuroscience/articles/10.3389/fnagi.2019.00043/full">https://www.frontiersin.org/journals/aging-neuroscience/articles/10.3389/fnagi.2019.00043/full</a>
  - Description: Links elevated cortisol to AD risk via sleep deprivation and personality factors; discusses lifestyle/sleep as mediators, aligning with your ADHD stress model.
- Title: Catecholamines in Alzheimer's Disease: A Systematic Review and Meta-Analysis (2020).

Link: <a href="https://www.frontiersin.org/journals/aging-neuroscience/articles/10.3389/fnagi.2020.00184/full">https://www.frontiersin.org/journals/aging-neuroscience/articles/10.3389/fnagi.2020.00184/full</a>

Description: Meta-analysis on dopamine/norepinephrine deficits in AD; finds inconsistencies but supports early catecholamine dysfunction (as in ADHD) as a precursor.

• Title: The Bidirectional Relationship between Sleep and Neurodegeneration (2024). Link: https://www.mdpi.com/2514-183X/8/1/11

Description: Explores how sleep disruptions exacerbate neurodegeneration; highlights dopamine-melatonin interactions, relevant to ADHD-AD progression.

## Theme 2: ADHD as Risk Factor for AD (Untreated ADHD, Longitudinal Evidence)

• Title: Attention-Deficit/Hyperactivity Disorder as a Risk Factor for Dementia Disorders: Findings Based on Swedish National Registers (2022).

Link: <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC8792867/">https://pmc.ncbi.nlm.nih.gov/articles/PMC8792867/</a>

Description: Population-based study showing ADHD increases dementia/MCI risk, attenuated by psychiatric controls; supports untreated ADHD as a precursor.

• Title: Impact of the Polygenic Risk Scores for Attention-Deficit/Hyperactivity Disorder on Cognitive Decline and Conversion to Alzheimer's Disease in Cognitively Unimpaired Older Adults (2025).

Link: <a href="https://alz-journals.onlinelibrary.wiley.com/doi/10.1002/alz.70003">https://alz-journals.onlinelibrary.wiley.com/doi/10.1002/alz.70003</a>

Description: Longitudinal analysis linking ADHD polygenic risk to faster cognitive decline and AD conversion in older adults.

• Title: ADHD and Neurodegenerative Disease Risk: A Critical Examination of Longitudinal Studies (2021).

Link: <a href="https://www.frontiersin.org/journals/aging-neuroscience/articles/10.3389/fnagi.2021.826213/full">https://www.frontiersin.org/journals/aging-neuroscience/articles/10.3389/fnagi.2021.826213/full</a>

Description: Critiques studies on ADHD-dementia links, focusing on Lewy body dementia; strengths include large cohorts, weaknesses in confounders.

• Title: Genetic Vulnerability to ADHD Signals Risk of Alzheimer's Disease in Old Age (2022).

Link: <a href="https://www.upmc.com/media/news/120722-genetic-vulnerability-to-adhd-signals-risk">https://www.upmc.com/media/news/120722-genetic-vulnerability-to-adhd-signals-risk</a>

Description: Genetic predisposition to ADHD predicts AD pathology in cognitively unimpaired elderly; uses ADNI data for biomarkers.

• Title: Adult ADHD: Risk Factor for Dementia or Phenotypic Mimic? (2017). Link: https://www.frontiersin.org/journals/aging-

neuroscience/articles/10.3389/fnagi.2017.00260/full

Description: Explores ADHD as AD risk via lifestyle mediators; suggests untreated cases mimic early MCI.

• Title: Genetic Risk for Attention-Deficit/Hyperactivity Disorder Predicts Cognitive Decline and Development of Alzheimer's Disease Pathophysiology in Cognitively

Unimpaired Older Adults (2022).

Link: https://www.medrxiv.org/content/10.1101/2022.04.05.22273464.full

Description: Longitudinal ADNI study linking ADHD genetics to amyloid/tau buildup.

• Title: Adult Attention-Deficit/Hyperactivity Disorder and the Risk of Dementia (2023).

Link: <a href="https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2810766">https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2810766</a>

Description: Cohort study showing ADHD triples dementia risk, but psychostimulants

mitigate it.

## Theme 3: Generational and Historical Blind Spots (Undiagnosed ADHD, Cross-Generational Risks)

• Title: Attention-Deficit/Hyperactivity Disorder and Alzheimer's Disease and Any Dementia: Family and Genetic Associations (2021).

Link: https://pubmed.ncbi.nlm.nih.gov/34498801/

Description: Swedish registry study showing ADHD-AD associations across generations, attenuating with genetic distance; suggests shared familial risks.

• Title: Attention-Deficit/Hyperactivity Disorder in Childhood Is Associated with Cognitive Test Profiles in the Geriatric Population but Not with Mild Cognitive Impairment or Alzheimer's Disease (2011, but foundational).

Link: <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC3142705/">https://pmc.ncbi.nlm.nih.gov/articles/PMC3142705/</a>

Description: Examines ADHD stability across generations; no direct MCI/AD link but notes undiagnosed historical cases.

• Title: Link Between ADHD and Dementia Across Generations (2021). Link: https://alz-journals.onlinelibrary.wiley.com/doi/10.1002/alz.12462

Description: Familial study with 34% higher dementia risk in parents of ADHD

individuals; emphasizes generational underdiagnosis.

## Theme 4: Early Interventions (Nutritional, e.g., Omega-3s, Ketogenic Diets, Bredesen Protocol)

• Title: Observed Improvement in Cognition During a Personalized Lifestyle Intervention in People with Cognitive Decline (2023).

Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC10473097/

Description: Bredesen-inspired trial with ketogenic diet showing cognitive gains; focuses on metabolism optimization.

• Title: Dietary and Supplemental Long-Chain Omega-3 Fatty Acids as Moderators of Cognitive Impairment and Alzheimer's Disease (2022).

Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC8854294/

Description: Review of 33 studies on omega-3s protecting against cognitive impairment; anti-inflammatory effects relevant to ADHD-AD.

• Title: The Ketogenic Diet as a Potential Treatment and Prevention Strategy for Alzheimer's Disease (2019).

Link:

https://www.researchgate.net/publication/328205494 The Ketogenic Diet as a Potential Treatment and Prevention Strategy for Alzheimer%27s Disease

Description: Hypothesizes ketogenic diets for AD prevention via ketone production; ties to glucose mismanagement in brain.

• Title: Effect of Nutrition in Alzheimer's Disease: A Systematic Review (2023). Link:

 $\underline{https://www.frontiersin.org/journals/neuroscience/articles/10.3389/fnins.2023.1147177/p} \ df$ 

Description: Mediterranean/ketogenic diets and omega-3s as protective; contrasts with high-glycemic risks.

• Title: Diet and Alzheimer's Dementia – Nutritional Approach to Modulate Inflammation (2019).

Link:

https://www.researchgate.net/publication/334698449\_Diet\_and\_Alzheimer%27s\_dement ia - Nutritional approach to modulate inflammation

Description: Omega-3 supplementation trial reducing inflammation; links to ADHD symptom management.

#### Theme 5: ADHD Medications and AD Prevention

• Title: Noradrenergic Drugs for ADHD and Potential Benefits in Alzheimer's Disease: A Systematic Review (2022).

Link: <a href="https://theconversation.com/adhd-drug-shows-promise-in-treating-some-symptoms-of-alzheimers-disease-new-research-186245">https://theconversation.com/adhd-drug-shows-promise-in-treating-some-symptoms-of-alzheimers-disease-new-research-186245</a> (full study linked).

Description: Review showing noradrenergic ADHD drugs (e.g., atomoxetine) improve AD symptoms like apathy.

• Title: Association Between CNS-Active Drugs and Risk of Alzheimer's and Age-Related Neurodegenerative Diseases (2024).

Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC10937406/

Description: CNS drugs (including ADHD stimulants) reduce AD risk; longitudinal data on neuroprotection.

• Title: Alternative Strategy for Stalling Alzheimer's Neurodegeneration (2021). Link: <a href="https://news.emory.edu/stories/2022/01/hs">https://news.emory.edu/stories/2022/01/hs</a> atomoxetine alzheimers study 01-01-2022/story.html

Description: Atomoxetine (ADHD drug) stalls AD neurodegeneration via norepinephrine boost.

• Title: Ritalin Reduced Apathy in NIA-Funded Alzheimer's Clinical Trial (2021). Link: <a href="https://www.nia.nih.gov/news/ritalin-reduced-apathy-nia-funded-alzheimers-clinical-trial">https://www.nia.nih.gov/news/ritalin-reduced-apathy-nia-funded-alzheimers-clinical-trial</a>

Description: Methylphenidate (ADHD stimulant) safely reduces AD apathy in 6-month trial.