Evaluating and Treating the Adult Patient Complaining of ADHD

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Disclosure

I have no financial interests or relationships to disclose.

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Learning Objectives

- Recognize how the manifestations of adult-onset ADHD differ from those of childhood-onset ADHD
- Plan a treatment for Adult ADHD that includes both pharmacological and psychological components
- Appreciate the prominent role of comorbidity with other psychiatric diagnoses

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Outline

1) Divisive, Controversial Diagnosis
2) Manifestations of Adult ADHD
3) Diagnosis
4) Treatment

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Divisive & Controversial Diagnosis

- One extreme
  - Biological brain condition
    - Genetic correlates
    - Neuroimaging findings
    - Environmental causes
    - Cognitive dysfunctions
    - Pharmacological treatments

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Divisive & Controversial Diagnosis

- The other extreme
  - Psychological variant
    - Label for difficult children
    - Result of societal intolerance
    - One end of normal behavior spectrum
    - Something to grow out of

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Middle Ground

- Many aberrant biological findings, but…
  - No set of consistent findings support unique dx
    - syndrome, not disorder
  - No single cause
    - Diverse biological, environmental, social contributors associated with inattention
  - (In)attention itself is inexact concept
    - Complex neuroanatomy
  - ADHD patients suffer consequences
    - Work, home, relationships impacted
  - Society, not science defines what is, isn't disease
    - Impairment, disability occur against cultural expectations

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Succinct Criteria

- Core sx of inattention, hyperactivity, distractibility, impulsivity
  - Neurodevelopmental basis
  - Two broad domains
    - Hyperactivity/impulsivity
    - Inattention
  - Impairments present in multiple public, personal life arenas

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DSM5 – ADHD Criteria

- Persistent pattern occurring in multiple settings (i.e. 2 or more)
- Symptoms must interfere with functioning or development
- Symptoms must manifest before the age of 12
- Symptoms can't be better explained by another psychiatric condition
- Symptoms can be either inattention and/or hyperactivity-impulsivity
  - Inattention: >6 symptoms up to age 16, **>5 symptoms for age 17 and older (i.e. adults);** must be present at least six months
  - Hyperactivity and Impulsivity: Six or more symptoms up to age 16, **>5 symptoms for age 17 and older (i.e. adults);** must be present at least 6 months

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DSM 5 ADHD Criteria

Hyperactive/Impulsive	Inattentive
Often fidgets	Inattention to details or careless mistakes
Leaves seat frequently	Difficulty sustaining attention
Feels restless/runs about	Doesn't seem to listen
Unable to engage in leisure quietly	Doesn't follow through
Uncomfortable being still	Difficulty organizing tasks
Talks excessively	Avoids tasks requiring sustained mental effort
Blurts out answers	Frequently loses things
Difficulty waiting turn	Easily distracted
Interrupts/intrudes on others	Often forgetful

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ADHD: A Neurodevelopmental Disorder

Multiple Possible Etiologies

1. Biederman J, Faraone SV. Attention-deficit hyperactivity disorder. *Lancet.* 2005;366:237-248.
2. Pearl PL, Weiss RE, Stein MA. Medical mimics. *Ann N Y Acad Sci.* 2001;931:97-112.

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DSM-IV-TR vs. DSM-5

- Broad domains
  - Hyperactivity
  - Impulsivity
- Unchanged, but subtypes replaced with presentation specifiers
- Core symptoms
- Unchanged, but examples of distinctive adult manifestations added acknowledging different settings in which adults operate
- Age of onset
- Changed from before age 7 to before age 12
- Adaptations for adults
- Dx moved from child-based to neurodevelopmentally based chapter; adults need only five symptoms (vs six in children) to meet criteria

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Adult Onset ADHD Is Real

England/Wales Cohort

- N = 2,040
  - 359 (17.5%) ADHD
  - 247 (12.1%) childhood
  - 54 (21.9%) persistent
  - 166 (8.1%) adult
    - 112 (67.5%) new onset

Agnew-Blais 2016

Pelotas, Brazil Cohort

- N = 4,267
  - 809 (18.9%) ADHD
  - 393 (8.9%) childhood
  - 60 (12.2%) persistent
  - 492 (11.5%) adult
    - 416 (84.6%) new onset
    - 256 (52.0%) no comorbid psych dx

Caye 2016

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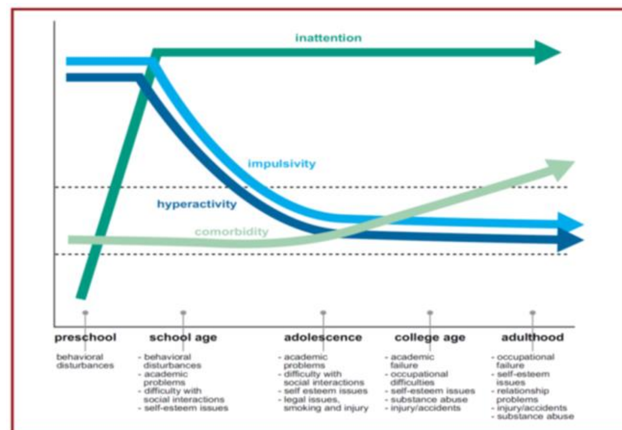
Typical Symptom Progression in ADHD



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Challenges of Diagnosing ADHD in Adulthood

- Limited accuracy of retrospective recall of patients and informants
- Subtypes shifting with aging; gender differences in subtype dx
- Differences in tasks expected of children vs adults with ADHD
- Gradual skills development in coping and/or negative consequences
- Concerns about malingering and diversion
- BROAD differential and significant psychiatric comorbidity (40-50%) in established ADHD
- Empiric tx does not establish/refute diagnosis
- NB: Only 17% children persist into adulthood, but 90% adults lack child hx

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Consequences of Undiagnosed ADHD

- Higher rates of mood disorders, substance use, anxiety, antisocial behaviors, attempted and completed suicide
- Relationship problems and self-esteem issues
- Lower school achievement, higher dropout rates, lower occupational attainment
- 4x more car accidents, 3x more speeding tickets

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Consequences of Adult Inattention

- Characteristics
  - Poor planning
  - Poor follow-through
  - Poor organization and time management
- Consequences: difficulties with
  - School attendance; assignment completion; paperwork
  - Future planning; keeping appointments
  - Household organization; prioritizing
  - Health maintenance
  - Relationship nurturance
  - Budgeting, spending, bill payment

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Comorbidity

- High rates with other psych d/o's
  - ADHD may be overlooked because it overlaps with anxiety including PTSD (47%), mood (38%), substance use (15%), personality d/o's, sleep d/o's
  - Common comorbid psych sx
    - sleep-onset insomnia
    - emotional dysregulation
    - excessive mind-wandering
    - executive function difficulties
      - *Asherson 2016*
  - 107 ADHD clinic pts
    - 8% no comorbidity; 10% one dx; 14% two; 15% three; 53% ≥four
    - 7% mild impairment; 53% moderate; 40% severe
      - *Wilens 2009*

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Not Your Kid's ADHD:

- Context-sensitive sx emergence
  - Presence/absence
    - Structured environment
    - Coping strategies
    - Psychiatric comorbidity
- More heterogenous, subtle sx
  - Only 1/3rd adults meet full criteria
  - Functional impairment still common
- Higher-stakes consequences
  - Little people, little problems; big people, big problems

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Distinguishing Adult ADHD from Mimics

- Confounders
  - Seemingly unrelated complaints mask ADHD, which is missed
  - No childhood ADHD by hx, no consideration given to Adult ADHD
- Characteristics
  - Early onset
  - Trait-like symptom persistence
    - NOT episodic/transient
    - NOT a change from baseline
  - How someone is!

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Adult Hyperactivity/Impulsivity

Manifestations

- Restless, driven activity; inability to relax
- Racing, scattered thoughts
- Irritability; compromised emotional regulation
- Impulsive Aggression; sexual impulsivity
- Boredom, procrastination, indecisiveness, distraction

Consequences

- Sexual impulsivity
  - Early/unplanned pregnancy; STDs
- Reckless driving
  - Speeding tickets; MVAs
- Quitting jobs; dropping out of school
- Binge drinking; substance abuse

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Adult Inattention

- Characteristics
  - Poor planning
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  - Poor organization and time management
- Consequences: difficulties with
  - School attendance; assignment completion; paperwork
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  - Relationship nurturance
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Suggested Diagnostic Approach

- Clarify time course through clinical interview
    - No objective text, therefore, history & exam critical
    - Screening tools for ADHD, comorbid diagnoses
    - Early, longstanding problems with attention, self-control
    - Collateral informants, where possible
    - Educational history: **Failure, underachievement**
- Clarify current impairment (Work, relationships)through rating scales from patient and key informants (significant other, supervisor)

Reference: Ask Mayo Expert ADHD Care Process Model

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Suggested Diagnostic Approach

- Screen for common mimics or comorbidities
    - Consider treating these first if present
        - Psychiatric conditions
        - Thyroid d/o, seizure d/o, migraines, TBI, OSA, etc
        - Medication side effects, recreational substances
- Consider specialty referral for "red flag" issues
    - violent outbursts or suicidal ideation
    - substance abuse
    - trauma

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Suspect the Diagnosis When…

- Core symptoms present but not reaching full dx
  - Adults frequently don't meet full ADHD criteria
  - Residual sx cause serious functional impairments
  - SUDs, mood/anxiety d/o combine with core sx
- Long h/o psychosocial dysfunction
  - Disrupted education, employment, relationships
- High intelligence/potential, low achievement
  - High-IQ may fxn only avg range because of ADHD toll

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Rating Scales

- Adult ADHD Self-Report Scale ASRS-v 1.1
  (https://add.org/wp-content/uploads/2015/03/adhd-questionnaire-ASRS111.pdf)
- ADHD Rating Scale – ADHD-RS
- Connors' Adult ADHD Rating Scale – CAARS
- Wender-Reimherr Adult ADHD Rating Scale
- Brown Adult ADHD Rating Scale

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Table 1. Questions in the Optimal RiskSLIM *DSM-5* ASRS Screening Scale[a]

1. How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly? (*DSM-5* A1c)
2. How often do you leave your seat in meetings or other situations in which you are expected to remain seated? (*DSM-5* A2b)
3. How often do you have difficulty unwinding and relaxing when you have time to yourself? (*DSM-5* A2d)
4. When you're in a conversation, how often do you find yourself finishing the sentences of the people you are talking to before they can finish them themselves? (*DSM-5* A2g)
5. How often do you put things off until the last minute? (Non-*DSM*)
6. How often do you depend on others to keep your life in order and attend to details? (Non-*DSM*)

Abbreviations: ADHD, attention-deficit/hyperactivity; ASRS, Adult ADHD Clinical Diagnostic Scale; RiskSLIM, Risk-Calibrated Superspare Linear Integer Model.

[a] Response categories are never, rarely, sometimes, often, and very often. The never response option is scored 0 for all questions; the highest scores are 5 for questions 1 and 2, 4 for question 5, 3 for question 6, and 2 for question 4, resulting in a scale with scores in the range 0 of 24.

JAMA Psychiatry. 2017;74(5):520-526. doi:10.1001/jamapsychiatry.2017.0298

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Five-Item Discrimination

ADHD adults from community controls with 99% accuracy

1) Making impulsive decisions
2) Having trouble stopping activities, behaviors despite knowing one should
3) Being prone to daydream when one should be concentrating
4) Having difficulty preparing or planning ahead
5) Failing to persist at necessary but boring tasks

Antshel 2009

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Comorbidity Screening Tools

PATIENT QUESTIONNAIRE – PHQ-9

Patient Name: ____________________ **MRN** __________
Physician: ____________________ **Date:** __________

Over the last **2 weeks**, how often have you been bothered by any of the following problems?

	Not at all 0	Several days 1	More than half the days 2	Nearly every day 3
1. Little interest or pleasure in doing things.	☐	☐	☐	☐
2. Feeling down, depressed, or hopeless.	☐	☐	☐	☐
3. Trouble falling/staying asleep, sleep too much.	☐	☐	☐	☐
4. Feeling tired or having little energy.	☐	☐	☐	☐
5. Poor appetite or overeating.	☐	☐	☐	☐
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down.	☐	☐	☐	☐
7. Trouble concentrating on things, such as reading the newspaper or watching television.	☐	☐	☐	☐
8. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual.	☐	☐	☐	☐
9. Thoughts that you would be better off dead or of hurting yourself in some way.	☐	☐	☐	☐
	0	____	____	____

A. How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?
☐ Not difficult at all ☐ Somewhat difficult ☐ Very difficult ☐ Extremely difficult

B. In the past **two years** have you felt depressed or sad most days, even if you felt okay sometimes?
☐ Yes ☐ No

Symptoms ________ **Severity Score** ________

IHC DEP-601 / 8-02

Alcohol Use Disorders Identification Test (AUDIT)

Please circle the answer that is correct for you.

1. How often do you have a drink containing alcohol?
   Never | Monthly or Less | Two to four times a month | Two to three times per week | Four or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   1 or 2 | 3 or 4 | 5 or 6 | 7 to 9 | 10 or more
3. How often do you have six or more drinks on one occasion?
   Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week
4. How often during the last year have you found that you were not able to stop drinking once you had started?
   Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week
5. How often during the last year have you failed to do what was normally expected from you because of drinking?
   Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
   Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week
7. How often during the last year have you had a feeling of guilt or remorse after drinking?
   Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
   Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week
9. Have you or someone else been injured as a result of your drinking?
   No | Yes, but not in the last year | Yes, during the last year
10. Has a relative or friend, or a doctor or other health worker, been concerned about your drinking or suggested you cut down?
    No | Yes, but not in the last year | Yes, during the last year

GAD-7

Over the last 2 weeks, how often have you been bothered by the following problems? (Use "✔" to indicate your answer)	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

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Challenges of Adult ADHD Treatment

- Chronic condition without cure
- Lifelong dependence on Schedule II drugs
- “normal” may seek stimulants as performance-enhancement drugs
- Psychiatric comorbidity the rule

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Challenges of Adult ADHD Treatment

- Limited, problematic drug trials in adult pop's
  - Greater variability in outcome; less dosing info
- Inattentive patients expected to attend to own management
  - Poor treatment adherence common
  - No parents/caretakers to monitor, manage
- Meds improve but rarely completely normalize social, behavioral function
- Comorbid dx – when present – also require tx

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Evidence-based Treatment for ADHD

- Evidence comes mainly from work with children****
- Stimulants are first line
- Atomoxetine if stimulants are not tolerated or are contraindicated (eg chemical dependency history)
- Pediatric evidence for central alpha-2 agonists
- Limited data for bupropion, others
- Psychosocial interventions as adjuncts/ for residual symptoms

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Pharmacological Therapy

- Goals
  - Identify impairments amenable to therapy
    - Treat concurrent psychiatric disorders
    - Reduce core ADHD symptoms
- ADHD Targets
  - Fronto-subcortical circuits rich in catecholamines (DA, NE)
  - Stimulants increase inhibition in circuit

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Three FDA-Approved Drugs

- Two dopamine reuptake blockers
  - Methylphenidate
  - Amphetamine
    - NB: Stimulants are first-line tx per NICE (2008)guidelines
- One noradrenergic agent
  - Atomexitine
    - Not classified as a stimulant; not Schedule II

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FDA Approved Stimulant Formulations for ADHD

Formulation	Methylphenidate preparations	Amphetamine preparations
Short-acting	Methylphenidate (Ritalin) Dexmethylphenidate (Focalin) Methylphenidate oral solution (Methylin oral solution) Methylphenidate chewable (Methylin Chewable)	Amphetamine-dextroamphetamine (Adderall) Dextroamphetamine (Dexedrine, ProCentra oral solution, Zenzedi) Methamphetamine (Desoxyn) Amphetamine (Evekeo)
Intermediate-acting	Methylphenidate SR (Ritalin SR) Methylphenidate ER(Metadate ER)	Dextroamphetamine SR (Dexedrine spansule)
Long-acting	Methylphenidate long-acting (Ritalin LA) Methylphenidate controlled-dispense (Metadate CD) Methylphenidate extended release OROS (Concerta) Methylphenidate ER (Aptensio XR) Dexmethylphenidate ER (Focalin XR) Methylphenidate ER oral suspension (Quillivant XR) Methylphenidate ER chewable (QuilliChew ER) Methylphenidate patch (Daytrana) Delayed ER methylphenidate (Jornay PM)	Amphetamine-dextroamphetamine ER (Adderall XR) Lisdexamphetamine (Vyvanse) Amphetamine-dextroamphetamine (Mydayis ER capsule) Amphetamine ER suspension (Adzenys ER) Amphetamine ER suspension (Dyanavel XR) Amphetamine ER ODT(Adzenys XR ODT)

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Treatment Algorithm with Stimulants

- Pick one class (methylphenidate or amphetamine)
- Typically start with long-acting in adolescents/adults
- Start low, increase every 4-7 days until effective
- If side effects or dose limits are reached, switch to the other class

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Tailoring Therapy

- Varied delivery mechanisms
  - Liquid, sprinkle, tablet, capsule, patch
  - Active isomer, prodrug (lisdexamphetamine)
- Varied half-lives
  - Immediate Release: 3-4 hrs
  - Intermediate Release: 6-8 hrs
  - Extended Release: 8-12 hrs
- Tailor duration of efficacy to pt's needs
- Mitigate abuse potential

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Abuse Potential

- Abuse potential/concern for use in patients w/a h/o SUD
- 16-23% of school age and 25% of college age youth have been approached to divert
- Males more likely to divert than females
- Friends; family most likely to receive
- In SUD patients > chance of diversion -consider treating with non-stimulant; if indicated:
  - IR >abused XR; amphetamines > abuse methylphenidates
  - Use lower risk formulation (e.g. lisdexamfetamine)

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Cardiovascular Risk

- Physiologic effects of stimulants
  - 3-5 mm rise systolic, diastolic BP
  - 5 bpm increase in HR
    - Weakly correlated to dose
    - Incidental for most patients
    - Could be relevant in pt with cardiac disease, HTN
- Prior to initiating stimulant
  - Query family hx early/sudden cardiac death; personal hx syncope, presyncope, palpitations
  - Baseline ECG to r/o hypertrophic cardiomyopathy, long-QT syndrome

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Stimulant Side Effects

Generally Mild to Moderate
Increased NE, DA Tone Can Cause

- Dry mouth
- Insomnia
- Edginess
- Decreased appetite
- Weight loss
- Dysphoria
- Tics
- Headaches
- Nausea
- Constipation
- Decreased libido
- Dizziness
- Sweating

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Central Alpha-2 agonists

- Unclear mechanism – activation of presynaptic inhibitory neurons
- More effective for hyperactive/impulsive symptoms
- FDA indication of long acting forms in children. Limited data for adults
- Can cause hypotension, orthostasis
- Sedation common - tend to start at hs or use long-acting
- **Intuniv (guanfacine ER) –** ***FDA approved in patients age 6-17***
- ***Kapvay (clonidine ER) – FDA approved in patients age 6-17***

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Bupropion (Wellbutrin)

- Limited data suggests some efficacy, off-label use in both children and adults for ADHD
- Increases synaptic dopamine and norepinephrine
- FDA indication for depression and smoking cessation
- Dosing 150-450 mg/day, XL formulation allows once daily dosing (improves compliance)
- Needs 4-6 weeks to be effective
- Risk for seizures, worsening suicidality, mania, hypertension
- ***Not FDA approved for ADHD***

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Integrated Treatment Plan

- Elements include
  - Psychoeducation
    - Identify strengths, weaknesses
    - Focus on self-esteem
  - Med trial with titration to ideal dose
  - Assessment of residual symptoms
  - Behavior management/modification
    - Time management therapy
    - Cognitive Behavioral therapy
  - Family involvement

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Compensate!

- Get practical! Build skills and compensatory strategies
  - Lists, notepads for ideas
  - Appointment books, calendars
  - Dictaphone/PDA for recording ideas
  - Bulletin boards for key messages
  - Reminders from family members
  - Help with finances
  - Short-term goals
  - Daily routines
  - Sense of humor

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Conclusions

- Adult ADHD
  - (at least) two distinct syndromes
    - childhood onset
    - adult onset
  - Heterogeneous, variable syndrome
  - Frontal lobe focus, but diffuse brain pathology
  - Distinct manifestations adult versus children
  - Clinical diagnosis without objective tests
  - Stimulants most effective med, not "cure-all"
  - Psychotherapy based in compensatory skill-building

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