The interaction of hormones and ADHD in women in mid-life

Carol Ann Robbins, Ph.D.

Overview

- Women with ADHD in mid-life are often misunderstood, misdiagnosed, or missed.
- Understand the impact of hormonal changes on brain and behavior for women in mid-life. It’s NOT early Alzheimer’s.
- Learn the importance of women understanding their story through the lens of ADHD—redefining themselves by their strengths, not their weaknesses.
- Learn the basics of proper sleep, nutrition, exercise, meditation, and stress management to optimize executive functioning.
- Improve functioning with EF training, cognitive-behavioral strategies, and lifestyle modifications.
WOMEN WITH ADHD ARE ROUTINELY UNDERDIAGNOSED AND UNDERTREATED

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Typical Scenario

- Women report to their physicians that they are very stressed and overwhelmed—that they are “losing it”.
- Physicians interpret these complaints as symptoms of anxiety.
- Women are then prescribed an SSRI to manage their anxiety.
- They then may feel somewhat less anxious, but they still cannot function effectively, making them feel badly about themselves.
- Their underlying executive functioning is still wreaking havoc and continuing to create overwhelm.
- Their underlying ADHD is ultimately often missed or misdiagnosed as stress and anxiety, adding to their shame.

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Misdiagnosis of Women with ADHD

• Common misdiagnoses also include:
  - Bipolar Disorder
  - Borderline Personality Disorder
  - Depression
  - Panic Attacks

Other diagnoses can include eating disorders, substance abuse, and sleep disorders.

ADHD in Mid-Life Women is Real

• Many women find ways to manage when they are younger and may have less on their plate to overwhelm them.
• The structure of raising a family and/or work can help some early on, before the demands increase.
• By mid-life, many women have increased responsibilities at home, for aging parents, for multiple active older children, and possibly also for work/career.
• Hormonal changes begin to effect executive function capacity, making it harder to manage everything on their plate.
• They often become embarrassed and ashamed that they cannot keep up with their responsibilities and suffer in silence.
Missed Earlier in Life

- Often, they are missed earlier in life due to:
  - Differences in their symptom profile (less disruptive).
  - Multiple protective factors (high IQ, good social skills, supportive environment).
  - Their efforts to hide their struggles or compensate for them.
  - Their desire to please teachers and parents.

(Nadeau & Quinn, 2002; Solden, 1995).

Societal Expectations Contribute

Women are often expected to seamlessly manage:

- The household (cooking, cleaning, laundry, grocery shopping)
- The children (school, homework, doctor visits, sports, activities)
- The family social calendar (kid's events, social gatherings, holidays, maintaining friendships and marital relationships)
- Taking care of aging parents on both sides
- Working outside the home
Emotional Fallout for Women with ADHD

- Women with ADHD tend to experience feelings of shame and inadequacy as they struggle to fulfill the gender role expectations of mothers, wives, and homemakers, often exhausting themselves trying to meet these daily demands on their executive functioning—taking on too much.
- The stress and overwhelm of trying to manage it all often leads to anxiety and depression.
- Feelings of failure and guilt follow, as well as relationship stress. Some husbands threaten to leave them as a result.

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Missed and Late ADHD Diagnosis

- The perception of ADHD as a “moral deficit” vs. a neurodevelopmental disorder can dramatically affect how women experience their symptoms and impairments (Hinshaw & Scheffler, 2014). There is often a strong social stigma.
- Women not diagnosed with ADHD until adulthood are more likely to suffer from depressive symptoms, anxiety, sleep disorders, eating disorders, substance use, and low self-esteem (Holthe, 2017; Waite, 2010).
- “A late or missed diagnosis is also associated with difficulties in being consistent as a parent, problems in managing jobs and household, conflicts at home/school/work, reduced quality of life, and an increased risk of divorce and single parenting.” (Holthe, 2017).

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Missed and Late ADHD Diagnosis (Cont’d)

• Prior to a later adult diagnosis, women tend to blame their struggles on perceived personal flaws—laziness, lack of effort and capability—resulting in a negative self-image. (Holthe, 2017).
• “Compensatory work efforts, high IQ, and structured and supportive home and school environments can contribute to keeping ADHD hidden for years, while inconsistent performances are instead attributed to perceived personal flaws, leading to self-blame and low self-esteem.” (Holthe, 2017).
• Women desperately need appropriate medical and psychosocial treatment for ADHD, leading to better self-understanding and improved functioning. The diagnosis itself can be therapeutic as well.

Hormonal Implications

THE ESTROGEN EFFECT ON COGNITIVE FUNCTIONING
Estrogen Effects: IT’s NOT Early Alzheimer’s

- Research results demonstrate that estradiol status impacts working memory function. (Jacobs & Esposito, 2011)
- Minor fluctuations in cortical dopamine (DA) can profoundly alter working memory (Jacobs & Esposito, 2011).
- Estrogen receptors are widely distributed in the brain, but are found to be concentrated in the hippocampus, implicating effects on episodic memory functioning. (Rapp et al, 2003).

Peri-Menopause and Menopause Transitions

- Mid-life onset executive functioning difficulties are common; however, they seem to be far worse in women with pre-existing, or previously subthreshold ADHD.
- Memory complaints during or after the menopause transition are common. Approximately 60% of middle-aged women reported cognitive changes (Sullivan & Woods, 2001).
- 42% of postmenopausal women reported a negative change in cognition in the Study of Women Across the Nation (SWAN) (Bromberger et al., 2011).
**Previous Adverse Life Events May Worsen Problem**

- “...results suggest that early life adversity has lasting impacts on large-scale functional networks underlying executive function. Alterations in functional network connectivity may be one mechanism by which early life adversity increases the risk of cognitive disorders during menopause.” (Shanmugan et al, 2017).
- Many women with ADHD have suffered these adverse events earlier in life, possibly due to their ADHD.

**ADHD at Mid-Life**

- These hormone-related brain changes at mid-life exacerbate and magnify previously more subtle and manageable ADHD symptoms.
- This serves as the tipping point for many women in mid-life, causing them increased distress, which then results in them finally seeking care—although it is the stress that gets medicated.
- They desperately need reassurance, psychoeducation, and support to better understand their neurology and not keep blaming themselves for being inadequate.
ADHD at Mid-Life

- It is so important that physicians recognize and screen for potential underlying ADHD when women come in complaining of being overwhelmed and stressed.
- Too many women in midlife are being made to feel “diseased” and misunderstood, and then only treated for secondary symptoms, such as anxiety and depression.
- Or, they get misdiagnosed and treated for the wrong disorder.

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Optimizing Brain Functioning

WAYS TO IMPROVE EXECUTIVE FUNCTIONING

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Medication Management

- ADHD is fundamentally a chemical problem—lack of dopamine availability (effects emotional regulation as well).
- Most effective treatment is to change the chemistry with medication.
- Unless the problematic chemistry is changed, other interventions are not likely to be as effective.
- Women in mid-life have been found to respond well to medication for ADHD (Epperson et al., 2015; Epperson et al., 2011).

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Synaptic Loading and Reloading

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SPECT Scan of ADHD Brain

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What to Expect Clinically from Stimulant Medication

- Improved attention span.
- Decreased distractibility.
- Improved ability to initiate tasks and complete them—increased productivity.
- Enhanced short-term/working memory.
- Improved efficiency on tasks—faster processing.
- Improved ability to read materials efficiently and retain information.
- Reduced risk taking (safer driving; better choices)

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What to Expect Clinically from Stimulant Medication Cont’d

- Decreased sense of being overwhelmed.
- Decreased lability, sensitivity, irritability, and emotional over-reactivity.
- Increased patience and tolerance.
- Decreased stimulation-seeking, hyperactivity, restlessness, and impulsivity.
- Reduced secondary anxiety/depression.
- Enhanced self-esteem, confidence, and communication skills over time.

Managing Medication

- Active medication management is essential to effective treatment for ADHD.
- Developing the habit of taking medication as prescribed (remembering to take it; keeping it in multiple locations; setting reminders).
- Monitoring response to medication—side effects, timing of doses, attaining adequate coverage, managing rebound effects.
- Communicating all this with medicating physician.
Medication Management Issues

- **Avoid under-medication in adults** — rate of response increases with higher doses. (Adults may need 1mg methylphenidate per kg of body weight). Suggest doctors titrate dose until full clinical efficacy is reached.
- **Women with ADHD may experience variability in the efficacy of stimulants over the course of the menstrual cycle** — due to the effects of estrogen on attention, memory and mood (stress, depression and lack of sleep may also decrease clinical efficacy of stimulant medication for all clients).
- Some clients will need to have their blood pressure evaluated first or be cleared by their cardiologist. Those with certain heart defects should not take them.

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Self-Care is Critical: For Body, Mind and Spirit

FOLLOWING THESE SELF-CARE PRACTICES WILL TRANSFORM YOU

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Prioritizing YOU is Essential: You are worth it!

• Making time and space to engage in important self-care practices will help you significantly.
• Turning off devices and distractions is often the first step—breaking the habit of electronic self-stimulation, especially in the evenings when it often leads to lack of sleep.
• Saying “no” to taking on too much and overcommitting; or trying to be superwoman (delegate more; take on less).
• Plan and schedule the self-care time daily—make appointments with yourself to do these practices.

Key Self-Care Practices

• Sleep management
• Exercise
• Healthful eating
• Meditation
• Body-centered practices
• Grounding in nature
Lifestyle Management

SLEEP, NATURE AND NUTRITION

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Lifestyle Management Issues

- Chronic sleep deprivation is the most significant issue among women with ADHD, followed by stress management, nutrition, and exercise.

- Cognitive functioning is adversely affected by lack of sleep, stress, improper diet and lack of exercise.

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Sleep Issues and Strategies

- Lack of sleep adversely affects executive functioning, energy level, and mood. It compromises the immune system as well.
- Disturbed sleep patterns are common—delayed sleep phase “Night owl” syndrome; difficulty waking; in a fog.
- Racing thoughts can prevent falling asleep (melatonin can help sleep onset)
- Avoid over-stimulation 1-2 hours before bed—television shows, news, internet, videogames, overly engaging books, active physical movement (sports, working out, etc.).

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Sleep Self-Care Management

- Commit to getting 8 hours a night of sleep—more important than TV, movies, internet, FB, games on phone—turn off screens 1 hour before bed. Leave phone in kitchen.
- Create daily routines to support this.
- Make it a top priority.
- Use effective strategies to support good sleep—some may need melatonin or sleep medications, or meditations. White noise or soft background music or nature sounds.
- May need to build in accountability or use coach to help establish new sleep routine.

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Exposure to Nature Helps the Brain

- It is beneficial in managing the symptoms of ADHD.
- Research has demonstrated that green outdoor settings appear to reduce ADHD symptoms in children (Kuo & Taylor, 2004) and improve concentration (Taylor & Kuo, 2009).
- Build in “green breaks” at work or at home and get out in nature as much as possible.
- Nature is calming and grounding.

Garbage In; Garbage Out

- What you eat really does matter!
- Too many of us are rushing and/or lack the energy to prepare healthy food, so we grab junk.
- Our neurotransmitter levels (dopamine, serotonin, etc.) are determined in large part by what we eat, as is our energy level and cognitive functioning.
- Brain fog, sluggishness, and impaired working memory can all be symptoms of poor diet, and/or food sensitivities or malabsorption or toxins (lead, tin, mercury, etc.).
Nutritional Support

- Higher-protein, lower-carbohydrate diet enhances energy and concentration (raises dopamine levels).
- Important to maintain a proper balance between proteins, carbohydrates & fats.
- Eat protein at all meals—especially at breakfast on an empty stomach (10-20 grams per meal is ideal).
- Protein contains the amino acid building blocks for neurotransmitters on the brain—essential to a “concentration” diet.
- Many ADHD individuals have insulin sensitivity and crave sugars and carbs—protein and fiber stabilize.

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Nutritional Guidance

- High sugar/simple carbs cause the pancreas to release more insulin in response to higher blood sugar levels; this paradoxically causes an overproduction of insulin, resulting in low blood sugar—feel tired, sluggish, and inattentive.
- Fiber/complex carbs and protein stabilize blood sugar levels, sustaining energy and focus—raise cerebral dopamine levels.
- Healthy protein choices—chicken, turkey, very lean beef, fish (salmon and tuna), low-fat cottage cheese, low-fat string cheese, milk, yogurt (Greek), kefir, soy, protein powder, eggs, nuts/nut butters, seeds, legumes (lentils, beans), quinoa.

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Eating Challenges for Women with ADHD

- Some women eat for stimulation—out of boredom (to get a dopamine hit).
- Others find comfort in food during a stressful day.
- This can exacerbate the weight gain which already tends to happen at menopause (or perimenopause).
- Treating your ADHD will likely help this tendency to overeat—especially if taking stimulant medication.
- Try preparing small serving sized containers of snack foods which are healthful but tasty and eat them slowly one at a time.

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Omega 3 fatty Acids

- 20% of dry brain weight is Omega 3, mostly DHA, but some EPA and Omega 6.
- Important for brain structure and function.
- Essential for neuronal membrane fluidity—necessary precursor for cell communication and immune regulation.
- Improves cardiovascular health.

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**Omega 3 Supplementation**

- Omega 3 to Omega 6 ratio has changed from 1:1 - 1:5 in hunter gatherer days to 1:50 - 1:100 in modern times.
- We eat too much Omega 6—corn and soy products (chips, soy bean oil, corn-fed beef) rather than grass-fed—blunts Omega 3.
- Recommendation: Increase amount of **Omega-3** fatty acids in your diet (tuna, salmon, walnuts, Brazil nuts) and take a fish oil supplement. 1 gram/day of EPA/DHA (Hg free or “USP”). Three months to see results. There is a small but sig. effect for ADHD symptoms. Eat grass-fed animal products.

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**Optimizing Brain Functioning**

**EXERCISE**

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Exercise Improves Brain Functioning

- Exercise boosts blood flow to the brain and increases serotonin, dopamine and norepinephrine availability, creating new receptors.
- “Exercise is the single most powerful tool you have to optimize your brain function” John Ratey, MD (in Spark, 2008).
- It significantly improves academic performance, test scores, cognitive flexibility, and executive functioning.

Exercise and the Brain

- There is a strong relationship between movement and attention (share overlapping pathways).
- The areas of the brain that control movement also coordinate the flow of information (the cerebellum).
- Best exercises are complex (and structured), such as martial arts, ballet, figure skating, gymnastics—paying attention to learn new movements engages and trains both systems.
- Exercise helps regulate the amygdala and improves the tone of the locus coeruleus, which blunts hair-trigger reactivity, rage reactions and reduces irritability.
Exercise Recommendations

- Recommended exercise is 30-45 minutes at least 3-5 times per week (Ratey recommends 6 hrs per week).
- Goal is to achieve fitness—normal body mass index and robust cardiovascular system optimizes your brain.
- Ways to enhance compliance: exercise buddy or personal trainer, regularly scheduled class (pre-paid), add movement during day (use stairs, park far away, dance around house to favorite music), take brisk walks, play a fun sport (pickle ball), use a pedometer, or engage in group activities.

Optimizing Brain Functioning

MINDFULNESS MEDITATION
Meditation Improves Brain Functioning

- Brain scans and other research studies have demonstrated the brain-related benefits of meditation, physiologically and cognitively.
- Physiological brain changes include: modification of attentional networks, changes in dopamine levels, modulation of EEG patterns, and changes in neuronal activity (Daniel Siegel, *The Mindful Brain*, 2007).
- Significant changes in cognitive measures were found even after brief periods of practice (i.e., four days of 20 mins/day) Zeidan et al. 2010.

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Neurophysiology of Meditation

- Produces greater state of neural integration
- Cortisol levels go down and serotonin levels increase
- Progressive, cumulative, and permanent
- Improves emotional self-regulation, working memory and sustained attention
- It benefits your health down to the cellular level!
- Improves sleep and your immune system.
- Meditation allows you to get a better perspective on your negative cognitions and allows wise-mind to emerge.

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Improving Brain Functioning: Meditation (cont’d)

- A study of mindfulness meditation for the treatment of adolescents and adults with ADHD found that 78% of participants reported reductions in total ADHD symptoms, even though most of them were already being treated with medication, and that there were significant improvements on several neuropsychological measures. The adults also reported significant reductions in depression and anxiety symptoms. (Book for adults on it with CD) (Zylowska, 2008)

Defining Mindfulness Meditation

- We become intentionally receptive to our own experience, attuning to ourselves moment by moment.
- Non-judgmental attention is directed to sensations, feelings, and state of mind in the present moment.
- “The repetitive act of directing your attention to only one thing in this one moment” means training your mind to pay attention to what you choose to pay attention to instead of letting your mind hijack you.
- The mental training of attention—voluntarily bringing back a wandering attention, over and over again—not a passive, relaxation process.
Goal of Mindfulness Meditation: Wise Mind

- When your emotions and your thoughts work together so that wise action is easy, even when your life and/or circumstances are really hard. You’re in wise mind.
- When you can meet each moment of life as it is, not as you would have it be, and respond to it skillfully.
- People who practice mindfulness will tell you that they get better at enduring pain, better at solving problems, better at not creating misery for themselves, and better at participating fully in those moments of life that are joyful.

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Developing Meditation Practice

- Mindfulness, Transcendental Meditation, Contemplative prayer are all beneficial.
- Attend meditation classes, workshops, and retreats.
- Obtain auditory guided meditation recordings—Jon Kabat-Zinn, Tara Brach (great website).
- Download phone apps—Headspace, Calm, Insight Timer, Buddhify, Smiling Mind.
- Engage in mindful movement practices—even running or walking, or other physical activities done mindfully.

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Related Beneficial Practices

- Other body-focused meditative practices are also very helpful, such as yoga, tai chi, and Qigong. They calm and center the mind and help ground into the body.
- Breathwork is very therapeutic—lower feelings of stress and overwhelm, promotes relaxation, reduces tension, reduces anxiety and depression, increases energy levels, and reduces emotional reactivity.
- Body scan or progressive muscle relaxation.
- Shifting attention to the body and out of the head.
Cognitive-Behavioral Treatment

TEACHING EXECUTIVE FUNCTIONS, PSYCHOEDUCATION, AND CHANGING BELIEFS

Cognitive-Behavioral Strategies

- Reframing ADHD—as a wiring difference not a deficiency.
- Move from self-blame to self-understanding.
- Focus on habit development/behavior change.
- Identify yourselves by your strengths NOT your weaknesses/deficits.
- Learn specific behavioral strategies to compensate for and/or improve executive functioning.
Enhancing Executive Functions

• Fundamental Strategies for Inattention:
  1. Reduce extraneous stimuli (distractions)—clutter, noise, visual stimuli, phone, email alert—to avoid risk of getting drawn into a distraction without realizing it.
  2. Amplify important stimuli—use visual cues that will grab your attention to tasks you need to remember to do; use a launch pad to collect needed items for the next day. Tuckman (2012).

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Working Memory Strategies

• Do it right away—not “I’ll do it in a minute” or later.
• Use items as their own reminders—put out watering can to visually remind you to water the plants.
• Take a reminder with you—if folding laundry take a sock with you to answer the door or phone.
• Ask for a reminder—ask colleague to email the request rather than tell you in passing; send yourself one.
• Highlight important information—use colorful post-its, mark emails as important, use a red action folder.
• Put up a note—tape up reminders, or pictures. Tuckman (2012).

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Planners and Planning

- Learning to use planners/calendars is essential, as is setting reminders.
- Create a week’s schedule from a to-do list—conducting daily planning sessions for task management.
- Keep master task list and create daily prioritized task lists.
- Use flow charts for planning projects.
- Complex tasks need to be broken down into parts.
- Learn to prioritize—Franklin-Covey’s 1 (critical), 2 (important) 3 (optional) system.

Use Life Management Resources

- ADD coach to develop habits and routines to manage daily life tasks and self-care.
- Professional organizer to clear out and organize home and workspaces.
- Hire a cleaning service.
- Barter services with friends; get a clutter-buddy. Use a body double.
- Use online and automatic bill paying; financial software programs.
Create an ADD-Friendly Lifestyle

- Low-maintenance lifestyle—simplify as much as possible
- Eliminate or delegate “red zone” tasks
- Low stress—delegate tasks/hire or get help
- Optimal constructive sources of stimulation
- Create structure and accountability
- Supportive, informed family & friends
- Structure & support of professionals

Shifting Attention

- What you attend to expands/gets amplified.
- Catch yourself focusing on the negative (putting yourself down, worrying, regretting) and choose to redirect your thoughts to what better serves you.
- For example, turn “I have to_____ (exercise)” into “I get to_____ (exercise).” That shifts everything.
- Consciously shift into the positive—into gratitude, appreciation, joyfulness.
Returning Dignity to Women with ADHD

- Uniqueness (amazingness)—you are so much more than your ADHD; so much greater than your mistakes, brain-fog, forgetfulness, oversights, or disorganization.
- Highly sensitive, creative, and intuitive (these are your gifts)
- Easily bombarded by an overstimulating world—need good self-care to be calm, centered, and present.
- You are worthy and deserving of creating time for self-care; prioritizing you.
- Create daily practices to be more present with yourselves—more tuned to your intuition, gut instincts, inner wisdom, peacefulness.

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Finding Purpose, Passion and Power

- Women with ADHD too often give up their power, lose sight of their purpose and forget to pursue their passions.
- The tendency is to take on too many responsibilities and become overwhelmed with the demands, putting yourself last—further contributing to the depletion of your energy.
- Putting yourself first is the antidote—making time to pursue your passions and self-care is restorative and affirming.
- Even superwomen need recharging to own their true power.
- You owe it to yourself and the world to **Put Yourself First!**

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### Resources

- The Queen of Distraction: How Women with ADHD Can Conquer Chaos, Find Focus, and Get It All Done by Terry Matlen.
- ADD-Friendly Ways to Organize Your Life: Strategies that Work from an Acclaimed Professional Organizer and a Renowned ADD Clinician by Kathleen Nadeau and Judith Kohlberg.

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### More Resources

- [www.flylady.com](http://www.flylady.com) – useful practical tips sent by listserve if you sign up
- ADDitude Magazine – lots of great articles and resources (for all ages); online version
- [www.udotherest.com/getting-organized.aspx](http://www.udotherest.com/getting-organized.aspx). Organizational apps of all kinds
- Wunderlist app
- Todoist app
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