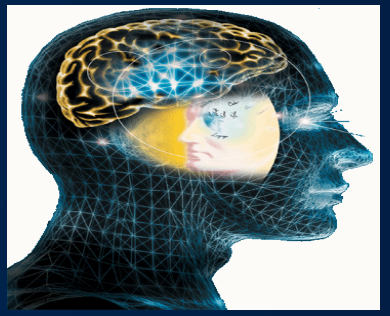
Parallel Symptoms Part II:

Dementia and the Caregiver – *Changes In Thinking for Different Reasons (Caregiving and the stress response)*

Robert E. Cohen, PsyD, ABPP
Neuropsychologist
Board Certified in Rehabilitation Psychology
Orlando City Soccer Medical Team
www.NeurocognitiveConsultants.com



OBJECTIVES:

- Discuss factors that impact thinking such as stress, medicine, hormonal changes, diet, activities
- Discuss how stress/depression mimics and can contribute to cognitive difficulties including memory loss.
- How can we tell the difference between stress/emotionally induced memory loss and genuine organic dementia.
- The use of Neuropsychological evaluation to help differentiate “real” versus “perceived” cognitive loss

Caregiving

- 80-85% of persons with dementia are cared for by family members in their own homes.
- There are similarities in the symptoms of cognitive decline in individuals with dementia and those with normal brains.
- Organic atrophy of the brain in the temporal, frontal, and parietal lobe is correlated/responsible for cognitive symptoms in dementia.
- Most caregivers are older spouses or middle aged grown up children.
- Caring for someone with dementia is associated with a higher level of stress than caring for someone with functional impairment from another type of chronic illness.

Why Do Family Members Decline Help from Resources?

- “Caregiving is a privilege.”
- “No one else can do the job as well as me.”
- “I have more time and energy for the task than anyone else.”
- “Accepting assistance feels like shirking my responsibility – then I feel guilty.”
- “I made a commitment, and making any change would feel like I’m breaking it.”
- Defining yourself solely as a caregiver

NOT ACCEPTING HELP CONTRIBUTES TO ISOLATION AND HIGH LEVELS OF STRESS

Caregiving as a Risk Factor for Mortality: "The Results" – Schulz, 1999 (*JAMA)*

- **392 caregivers and 427 non-caregivers aged 66 to 96 years who were living with their spouses.**
- After 4 year follow up: 56% of the caregiver group reported having "*Caregiver Strain*"
- Participants who were providing care and WERE experiencing caregiver strain had mortality risks that were 63% higher than non-caregiving controls.
- Participants who were providing care but WERE NOT experiencing caregiver strain DID NOT have an increased risk of early death compared to controls.
- **Being a caregiver with mental or emotional strain** is a strong risk factor for earlier death.

TAKE HOME MESSAGE: Minimizing caregiver strain **maximizes** life span.

R. Schulz, SR. Beach, The Caregiver Health Effects Study. JAMA, 1999,vol.282,pp. 2215-2219

Definition of Stress

- Stress: the process of adjusting to circumstances that disrupt, or threaten to disrupt, a person's daily functioning.
  - Stress involves a transaction between people and their environments.

"*Any event that exceeds our perceived resources*."

- Stressors: the events or situations to which people must adjust.

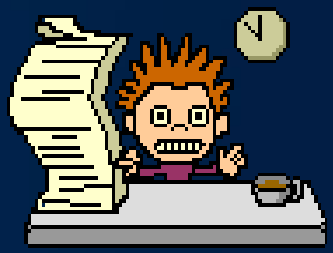
- Stress reactions: physical, psychological, and behavioral responses to stressors.

- Psychological stressors: any event that forces, or threatens a person to change or adapt.

4 Responses to Stress

- Physical Stress Responses: What *happens to your body*
- Emotional Stress Responses: How you *feel about it*
- Cognitive Stress Responses: What you *think about the event*
- Behavioral Stress Responses: What *you do in response*

The difficulty of a task
mediates the stress response

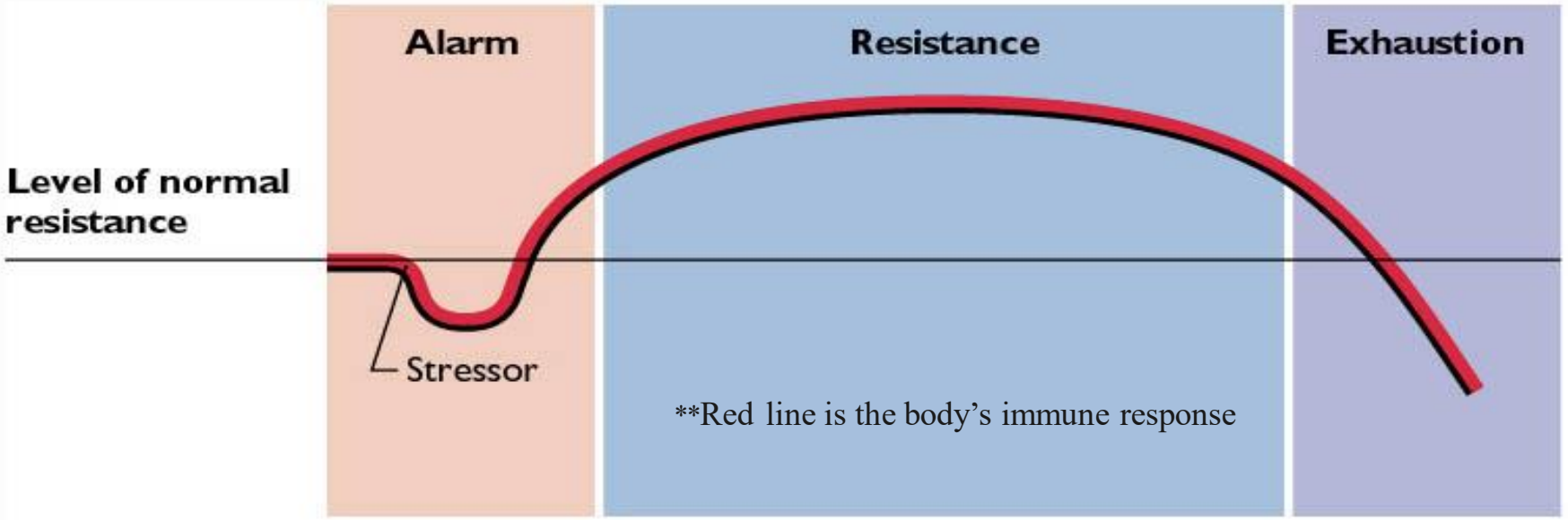


How does stress affect your immune system?

The Immune System, Illness, and Stress

- Chronic stress can impair or suppress the immune system over time.
- Psychoneuroimmunology – Is this field of study
- Many factors can mediate the relationship between stress and immune functioning
  - **Length of time**
  - **Resources to cope**
  - **Maintenance of health during stress period**
  - **Genetics**
- Chronic low level stress is more dangerous to your immune system than acute onset brief duration stress.
- Isn't all stress bad??

The General Adaptation Syndrome (GAS)[1]



During Acute Stress…..

1. **Alarm:** Fight or Flight response. Initial arousal state, body is set into action, adrenaline release stimulates production of epinephrine, norepinephrine, catecholamines (BP, HR, muscle tension etc.)
2. **Resistance:** Release of corticosteroids by the pituitary gland (cortisol,) to fight inflammation, release endorphins, and increase immune response initially.
3. **Exhaustion:** Decreased health behaviors, resources run out, immune system compromised due to lengthy cortisol release, leads to illness.

Effects of Stress and Cholesterol

- Chronic Stress can increase the amount of cholesterol and triglycerides circulating the blood by as much as 20%.
    - I.e. the 1993 Stock Market Crash lead to several brokers to have cardiovascular/cerebrovascular events
- Short term stress may also inhibit processing of fats – slows down digestion.
- Puts people at risk for developing heart disease.
- The bigger the perceived stress, the greater the fluctuations in blood cholesterol levels

Stress and Psychological Disorders:

Burnout:

- An increasingly intense pattern of physical, psychological, and behavioral dysfunction in response to a continuous flow of stressors or to chronic stress.
- Characterized by emotional exhaustion, detachment from others, loss of interest, and physical illness.

Common signs of "Burnout"

- Do you no longer laugh or have fun at work or at home?
- Are you more irritable toward coworkers or family members?
- Do you always see work as a chore?
- Have you developed chronic worry about your job?
- Do you feel lethargic and empty in your work?

Causes/Sources of Caregiver Burnout

- A sense of ongoing and constant fatigue.
- Decreasing interest in work.
- Decrease in work production.
- Withdrawal from social contacts.
- Increase in use of stimulants and alcohol (self-medicating).
- Increasing fear of death/inheriting dementia
- Change in eating and sleeping patterns.
- Feelings of helplessness.
- Financial
- Impacting other relationships
  - This leads to depression……symptoms of depression may mimic symptoms of demential.....

Strategies to ward off or cope with caregiver burnout

- Participate in a support network (hint: you already do this!).
- Consult with professionals to explore burnout issues and treat depression.
- Attend a support group to receive feedback and coping strategies from your peers.
- Vary the focus of caregiving responsibilities if possible (*rotate responsibilities with family members*).
- Exercise daily and try to gain variety/moderation in your diet.
- Establish "quiet time" for yourself to pray/meditate/focus.
- Get a weekly massage (*do something for yourself*)
- Stay involved in hobbies and your friends as much as possible.

Factors that Can Impact Thinking and Memory

There are other factors that can mimic dementia but are reversible:

- Depression/Mood
- Sleep
- Lifestyle Habits – socializing or isolating
- Diet and Exercise
- Hormonal Changes of Menopause
- Medicine Side Effects
- Normal Ageing Process
- Drugs and Alcohol

Depression

- Memory and learning functions are impaired in depressed patients
- Sleep is impaired
- Retrieval deficits are apparent in depressed patients. May be due to poor initial processing (diminished attention/focus)

Depression and Thinking Abilities

- Memory is one of multiple higher cognitive abilities or executive functions **impacted by depression/grief**.
- Not only forgetful, a person suffering from major depression may have trouble initiating tasks, making decisions, planning future actions, or organizing thoughts.
- Related to imbalances in the chemicals, called neurotransmitters (serotonin and norepinephrine) which impact how cells “talk to each other” and how memories are made.
- Happy people tend to remember “happy events”
- Sad people tend to remember “sad events”
- Depression impairs the ability to create long-term memories, primarily due to a **lack of attention and concentration**.

Pseudodementia

- Refers to dementia-like symptoms caused/maintained exclusively by clinical depression.
- Pt demonstrates decreased motivation during the exam. Very poor self-esteem, gives up very easily
- Expresses severe cognitive complaints
- Intact language and motor skills (unlike typical dementia)
- Improves with antidepressant treatment and individual therapy.
- Perception of impairment usually much worse than actual performance.

Sleep and the Brain

- Young mammals need as much as three times the amount of sleep as their adult counterparts.
- A number of studies have shown that animals and humans perform much worse on memory tasks when sleep deprived.
- **Contextual memory** (when things happened and the details therein) is impacted by sleep loss.
- Caffeine (too much) can impair sleep.
- Sleep loss impairs multi-tasking, motor coordination, frustration tolerance, lower immune function.
- Functional MRI (fMRI) scans show less activity in the frontal regions (which regulate attention) without sleep.

Medicine and Thinking Abilities

- Some medications act upon the central nervous system (brain and spinal cord). They can cause drowsiness, poor attention, poor retrieval, coordination
- **Benzodiazepines** – for anxiety/nervousness/sleep (Xanax, Valium, Ativan, Trazadone)
- Antidepressants/Antipsychotics: Remeron, Zyprexa, Zoloft, Paxil etc.
- **Narcotics/Opiates** – pain medicines (Oxycodone, Hydrocodone, Morphine, Codeine etc.)
- **Anticholinergic** (used to treat gastrointestinal disorders, allergies) – nausea, sleep aids (Advil PM, Tricyclics – Amitriptyline)
- Antiemetics – Zofran, Meclazine (Bonine, Antivert)
- **Anti-epileptic drugs** (Dilantin, Keppra, Topamax, Tegretol)
- **Antihistamines -** 1st generation are worse on cognition (Benadryl, Nyquil, Robitussin, Dramamine etc.) vs. 2nd generation antihistamines (Zyrtec, Claritin, Alavert - Loratadine etc.)
- Can effect older patients more so than younger.

Diet and the Brain

- Reduce the overall fat and plaque circulating in our blood stream (cholesterol) = reduction in risk of stroke/heart attack
- Increased cholesterol can increase the level of Amyloid plaque - possibly decreasing our resistance to Alzheimer's disease.
- High fat diets = bad for learning and memory (remember the movie "Supersize Me")
- Low-calorie and intermittent fasting diets = help preserve learning and memory (Society For Neuroscience, 2007).
- Omega 3-fatty acids found in fish oil also appears to have a role in anti-inflammatory processes in the brain.
- Eating fish once per week = reduced the chance of Alzheimer's disease by up to 60%. More than once did not help and could be bad.
- The Mediterranean Diet = diets rich in fish, vegetables, legumes, fruits, cereals and unsaturated fats (olive oil), moderate amounts of wine revealed good impact on blood sugar levels, insulin resistance, and lower markers of inflammation (Mayo Clinic, June 2009, Mediterranean diet: Choose this heart-healthy diet option, 1998-2009 Mayo Foundation for Medical Education and Research (MFMER).

Coffee, Turmeric, and Fish Oil, Oh My!

- Journal Alzheimer's Disease, 2009
- 1409 people were interviewed between 1972 and 1987 abut coffee drinking habits.
- In 1998 (after an average of 21 years) they were tested for Dementia.
- Those who drank 3-5 cups of caffeinated coffee per day reduced their risk of Alzheimer's disease by 65%.
- Suspected role of caffeine reducing beta-amyloid levels in the brain. Antioxidant effects of coffee bean?
- Anti-inflammatory affects of turmeric and fish oil (*Lovaza – 900mg of ethyl esters of omega-3 fatty acids*)

Alcohol

- The role of alcohol and dementia remains controversial despite many studies.
- Modest amounts of alcohol (red wine) may be associated with good health
- Large amounts of alcohol (More than 1-2 drinks per day) increases risk of dementia.
- Alcohol is associated with reduced brain volume, (frontal lobe shrinkage) and functioning
- Stopping excessive consumption returns structural changes after 4 years.

Exercise

- Journal Gerontology, 2008
- Swedish “twin” study looked at 3134 twins.
- Subjects completed surveys in 1967 or 1970 and underwent dementia screening in 1998.
- Those who participated in “light” exercise such as gardening or walking had a significant risk reduction of dementia.
- Those who participated in “active” sports (I.e. tennis) had a lower risk even still.

“Videogames may help stave off cognitive impairment”

- Research has suggested that computer games (along with board games and other stimulating cognitive exercises), may help prevent or delay the onset of cognitive impairment.
- Luminosity/Sudoku - Not magical.
- The key appears to be stimulating the brain.
- Videogames in particular require the user to be a cognitively active participant versus watching movies which is passive.
- This may also be why delaying retirement can also stave off cognitive impairment.

SUMMARY

- There are similarities in the symptoms of cognitive decline in individuals with dementia and those with normal brains
- Organic atrophy of the brain in the temporal, frontal, and parietal lobe is correlated/responsible for cognitive symptoms in dementia.
- Chronic Stress, depression/anxiety, and poor health behaviors are likely responsible for cognitive symptoms in caregivers and can ultimately lead to early death.
- Systematically minimizing the stress response and engaging in coping behaviors will reduce the risk of illness and mental health concerns in caregivers.
- Eliminating other sources of cognitive impairment by maintaining a good sleep cycle, healthy eating habits, engaging in exercise, obtaining social and professional support (this seems cumulative).
- Share the Care is a great first step.

Many Thanks


REMEMBER THE GOOD OLD DAYS WHEN WE PLAYED SPORTS AND NEVER WORRIED IF WE GOT CONCUSSIONS?
NO.
MoRE