

Chemobrain:

Cancer and Cognition in Adolescents and Young Adults

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Making Cancer History[®]



Outline

- What is cancer-related cognitive impairment/dysfunction?
 - CRCI, CRCD
- What causes cancer-related cognitive dysfunction?
- What can you do to manage?
 - Strategies for managing cognitive difficulties post cancer treatment
 - Educational and Workplace supports and accommodations

Cognitive Changes That Patients May Experience During and After Chemotherapy



Difficulty with new learning



Taking longer
to complete tasks

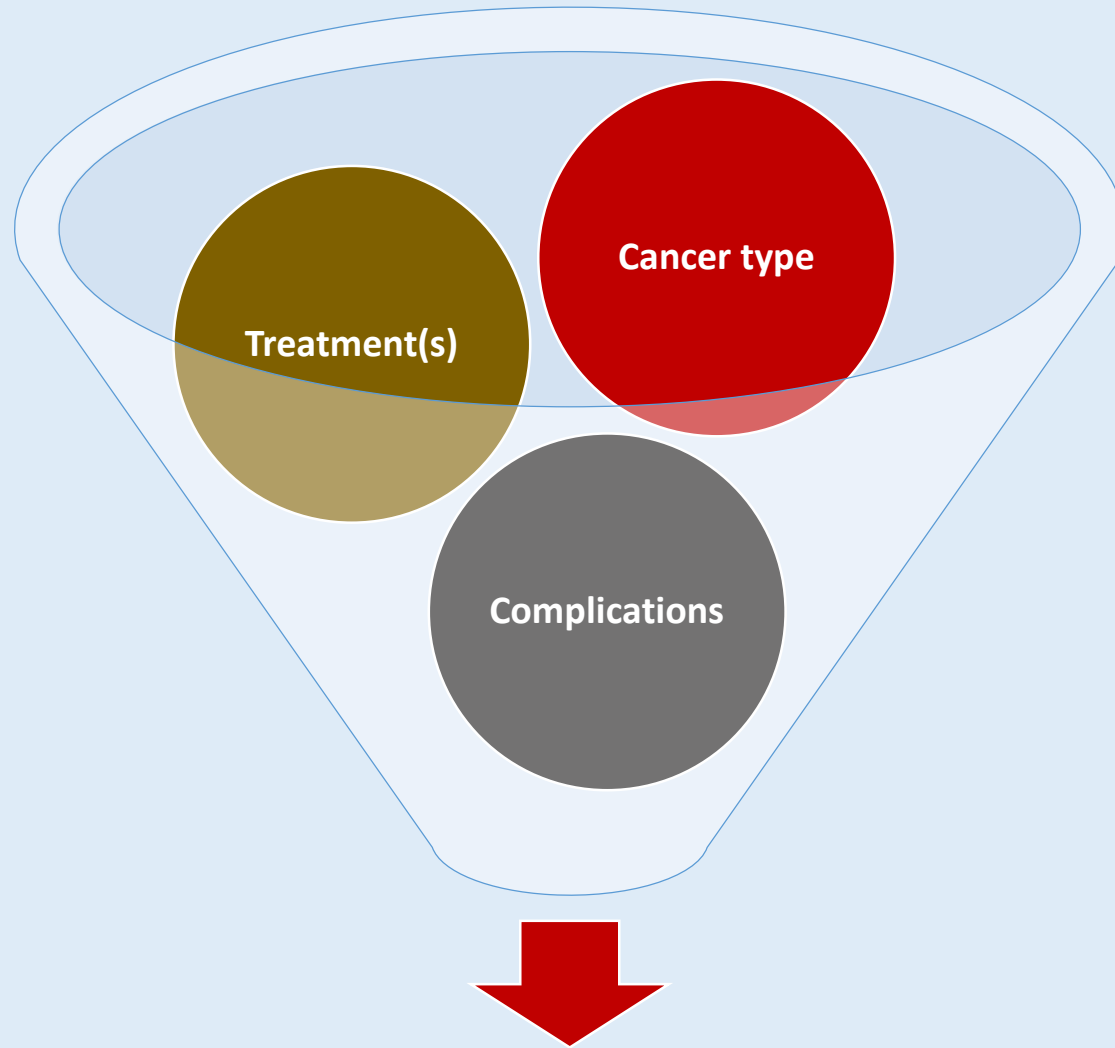


Trouble multitasking



Difficulty finding
the right word

Cancer-related factors to consider



Cognitive Dysfunction

Cognitive Domains Commonly Affected

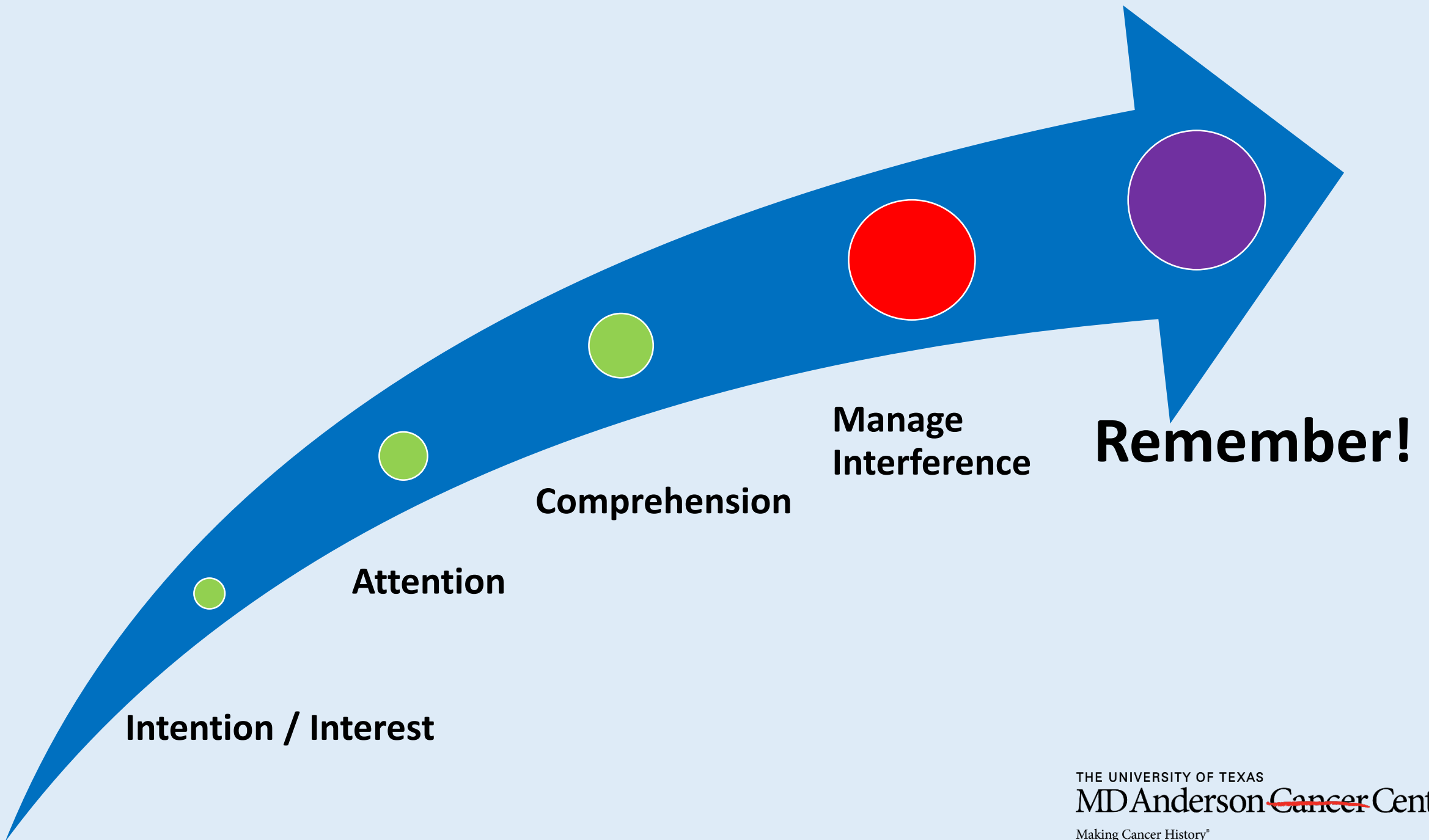
- Attention
- Memory
- Processing speed
- Executive functioning



Attention

- Easily distracted
- Forgetful
- Losing things
- Careless mistakes
- Poor organization
- Can't concentrate
- Easily bored, lacking interest





Intention / Interest

Attention

Comprehension

**Manage
Interference**

Remember!

Processing Speed

- Slower thinking
- Feeling foggy
- More effort/energy to complete simple things
- Gets worse with more complex tasks, many distractions



Executive Functions

- Doing/saying things without thinking
- Trouble with decision making
- Hard time starting things, knowing where to start
- Losing track of what you're doing
- Trouble multi-tasking
- Trouble with persistence and follow-through
- Trouble planning, goal setting, being prepared
- Easily frustrated
- Difficulty thinking up alternative solutions to a problem
- Feeling easily overwhelmed
- Difficulty finding (retrieving) information from memory





What Causes Cancer Related Cognitive Dysfunction?

- Cancer itself
- Chemotherapy, radiation therapy, hormone therapy
- Transplant treatment and side effects
- Low Blood Counts
- Steroids, anti-nausea therapy, pain medications
- Anxiety, Stress, Depression, and worry from cancer and cancer-related therapy
- Fatigue



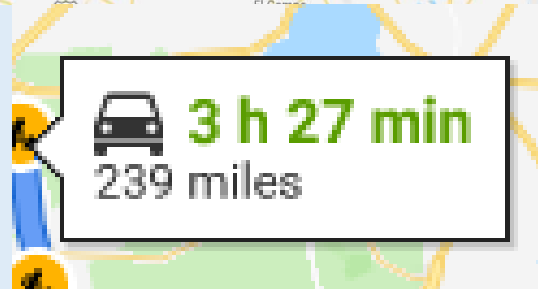
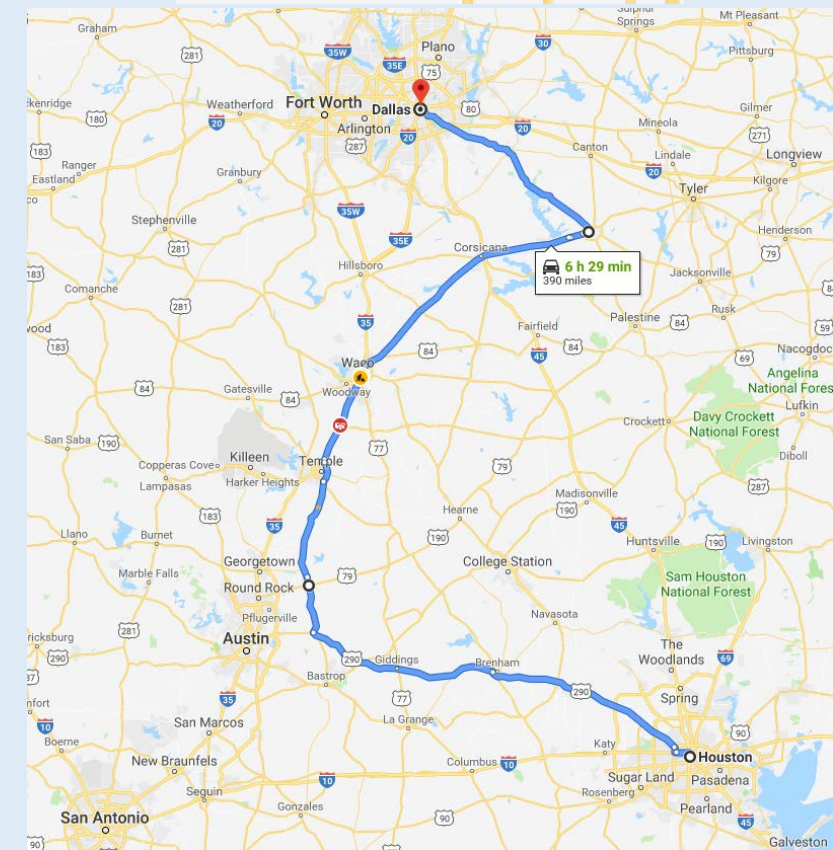
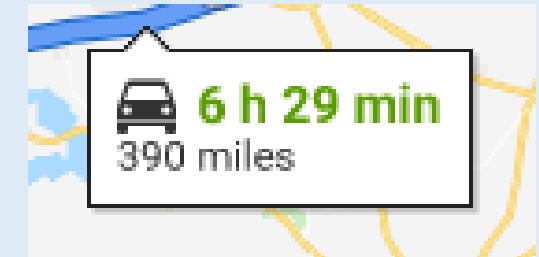
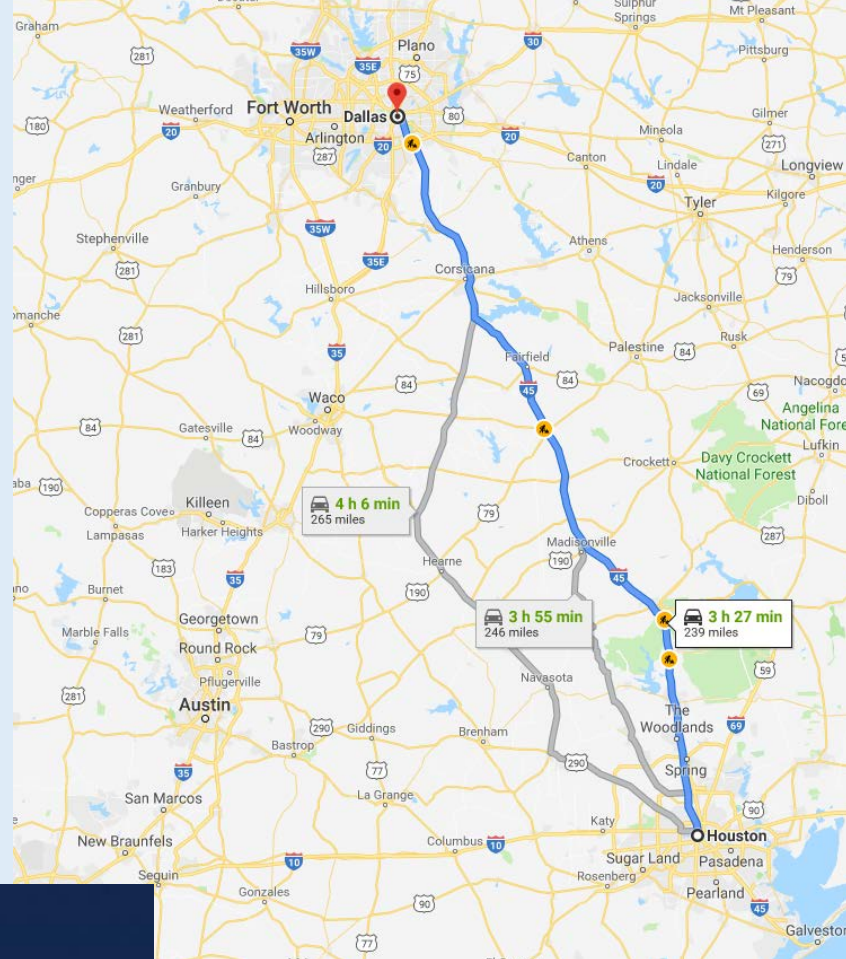
Why Does Cancer-Related Cognitive Dysfunction Occur?

- Cognition is highly dependent on **connections and communication** between neurons
- Connections are facilitated by cooperative activity of glial cells
 - Myelin formation, synapse formation
- Changes in myelin and synapses can result in significant changes in neural impulse conduction

Southwest

✈ Depart: HOU → DAL

Duration
1h 5m

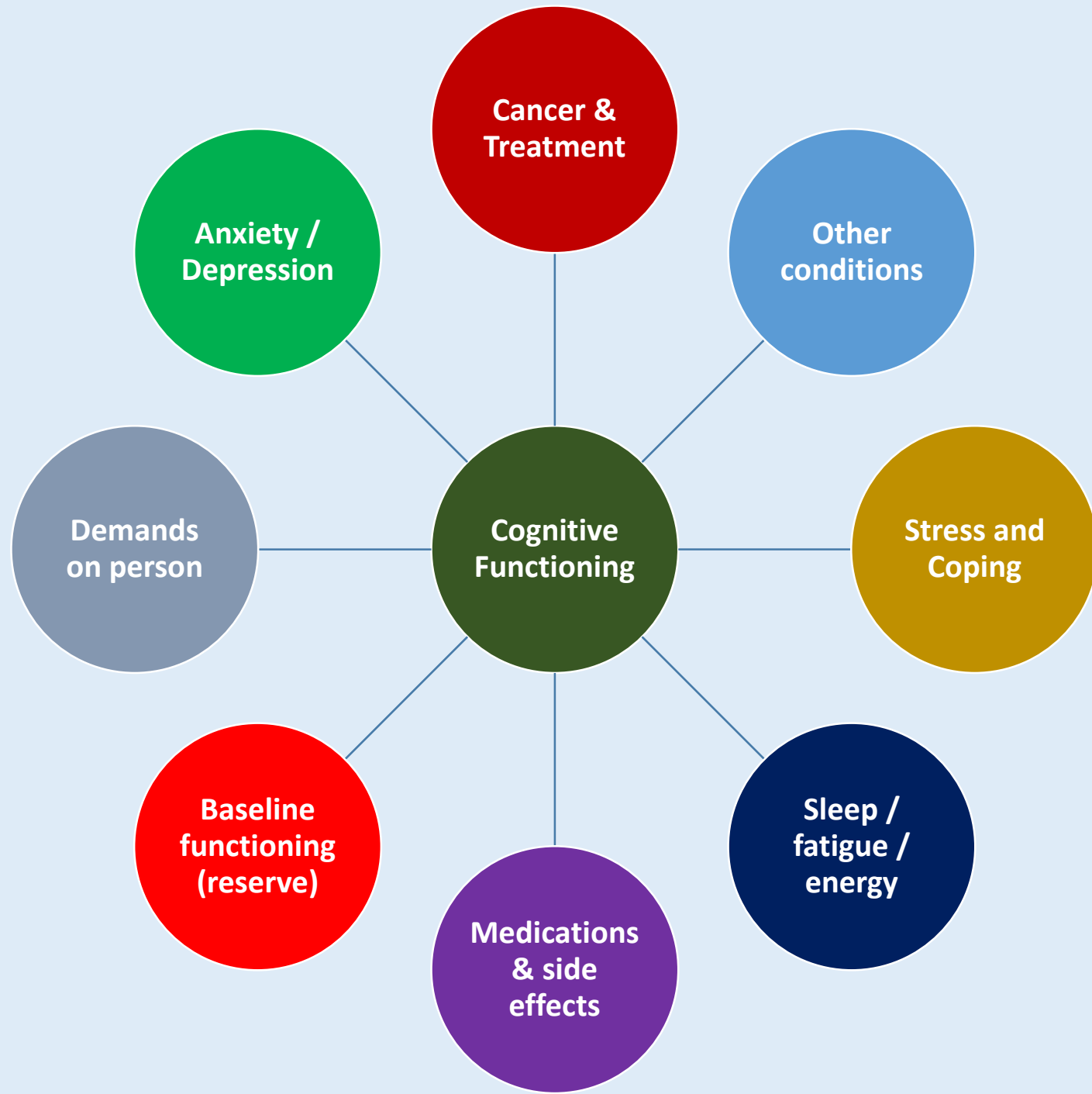


Possible Mechanisms

- Direct compromise to the brain caused by cancer and/or treatment
- Inflammatory Reactions
 - Immune system reaction
 - Treatment induced
- Disruption of blood-brain barrier
- DNA damage and associated deficits of DNA repair
- Hormone deficiencies

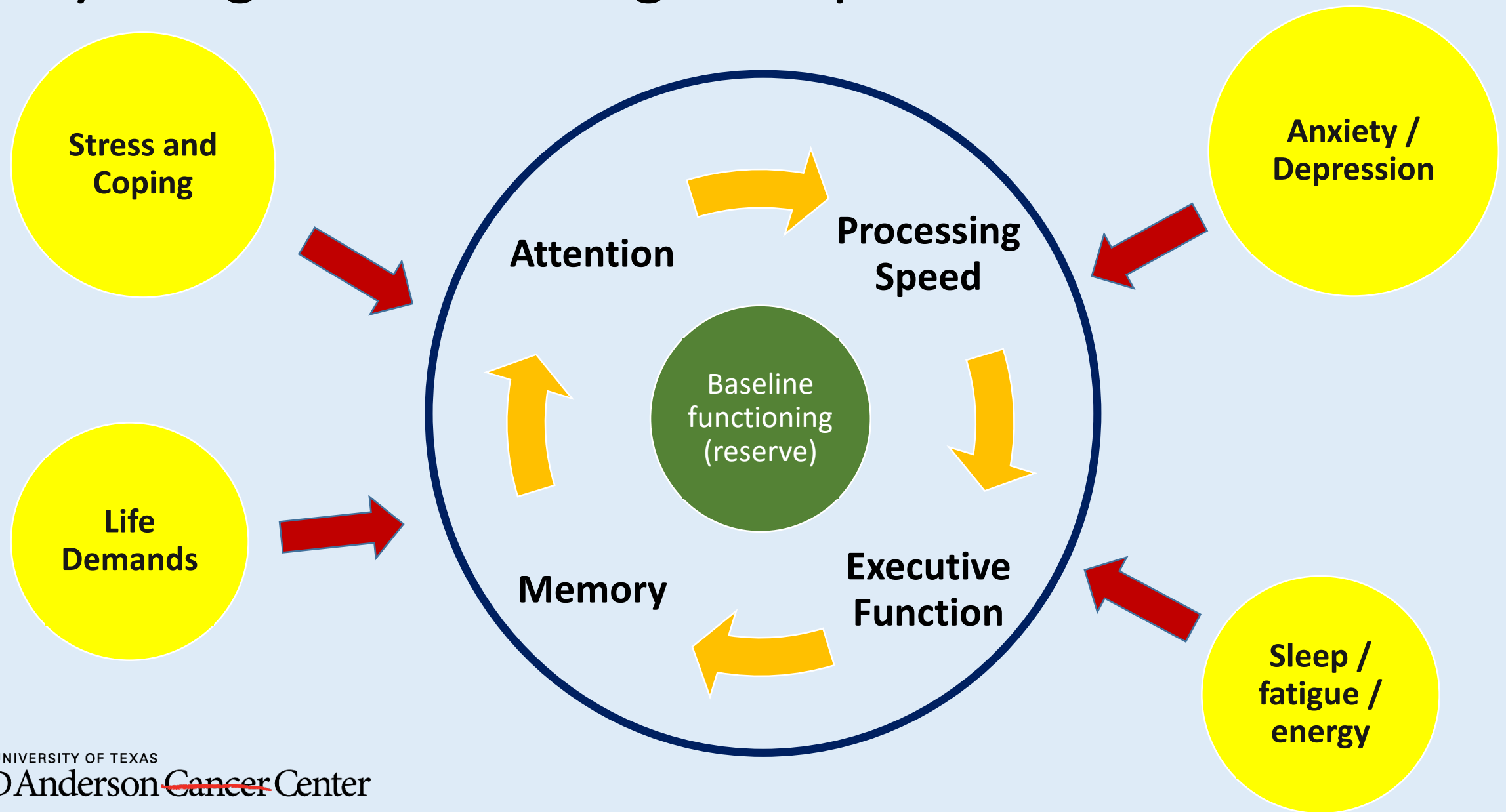


It's more than
just cancer and
treatment...



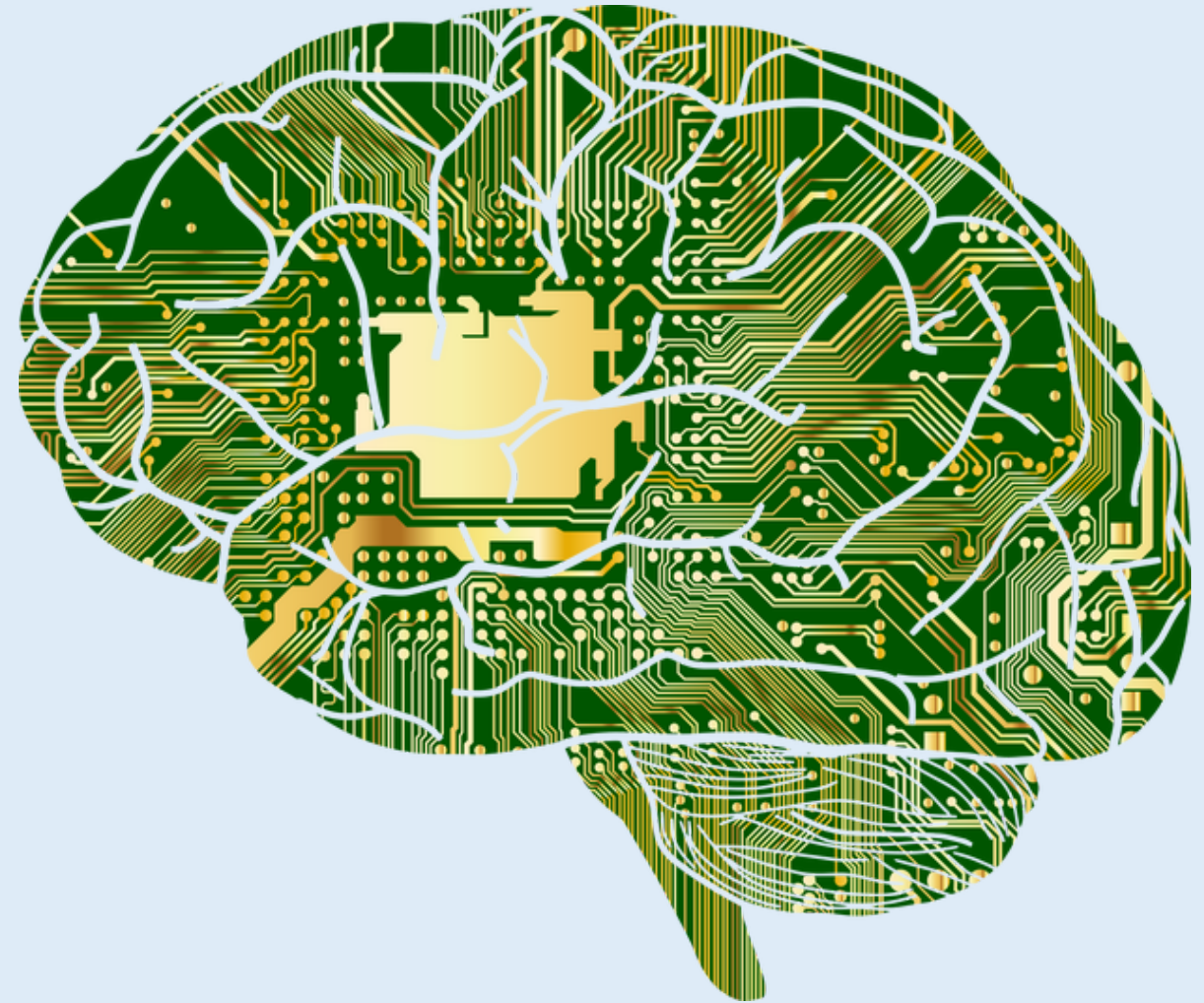


Many things influence cognitive performance



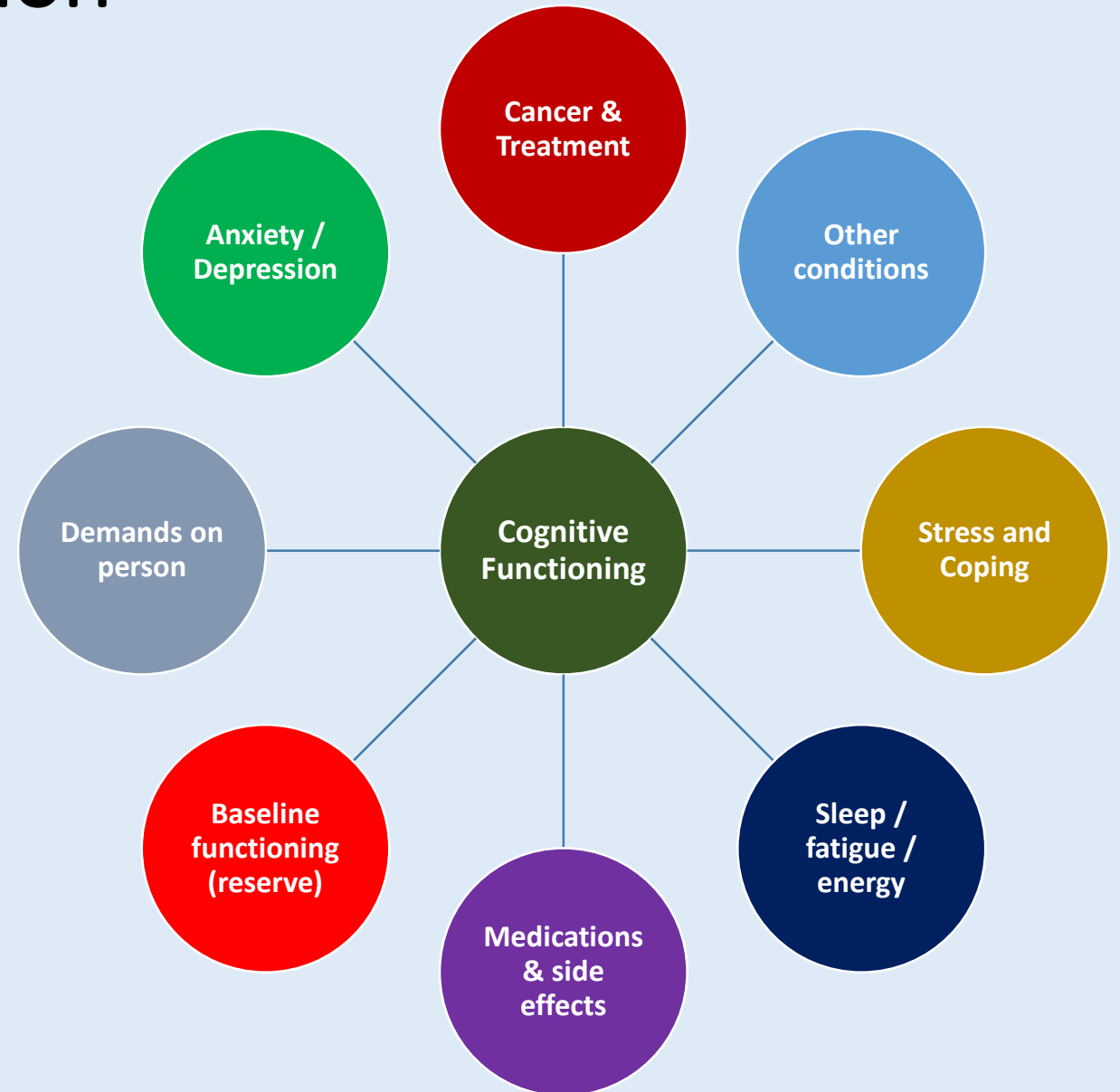
Management of Cancer Related Cognitive Dysfunction

- First, understand the problem
- Engage with your medical team
- Engage in healthy habits
- Specific interventions to manage prominent problems



Neuropsychological Evaluation

- Structured “tests” of cognitive function
- Considers possible contributing factors
- Understand the contributors, demystify experience of cognitive dysfunction
- Identifies priority targets for intervention, management
- Formulate plan to manage (remediate, compensate, accommodate) difficulties



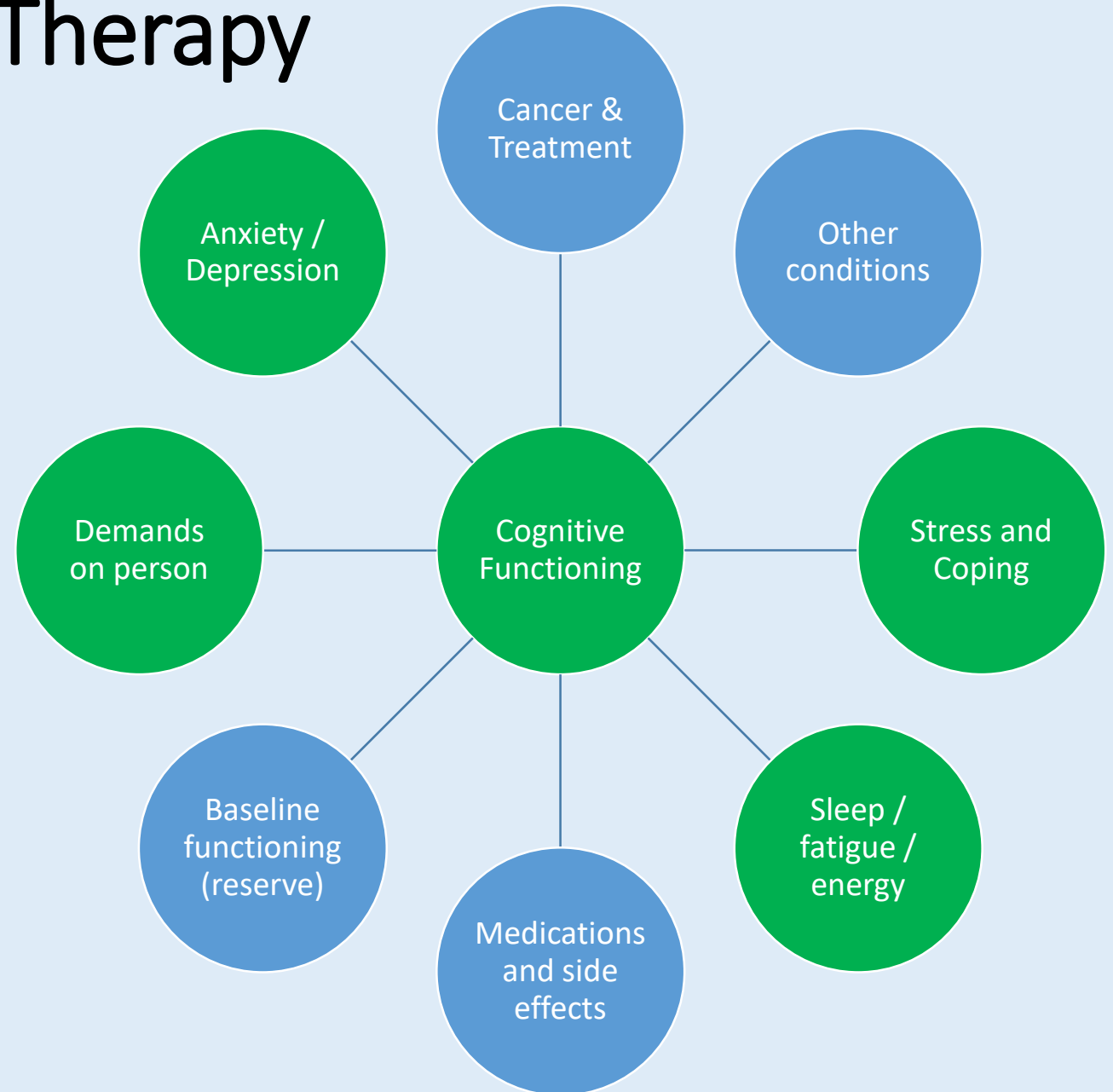
Healthy Habits

- Sleep
- Fatigue management
- Exercise (physical and mental)
- Nutrition
- Self-care, social engagement



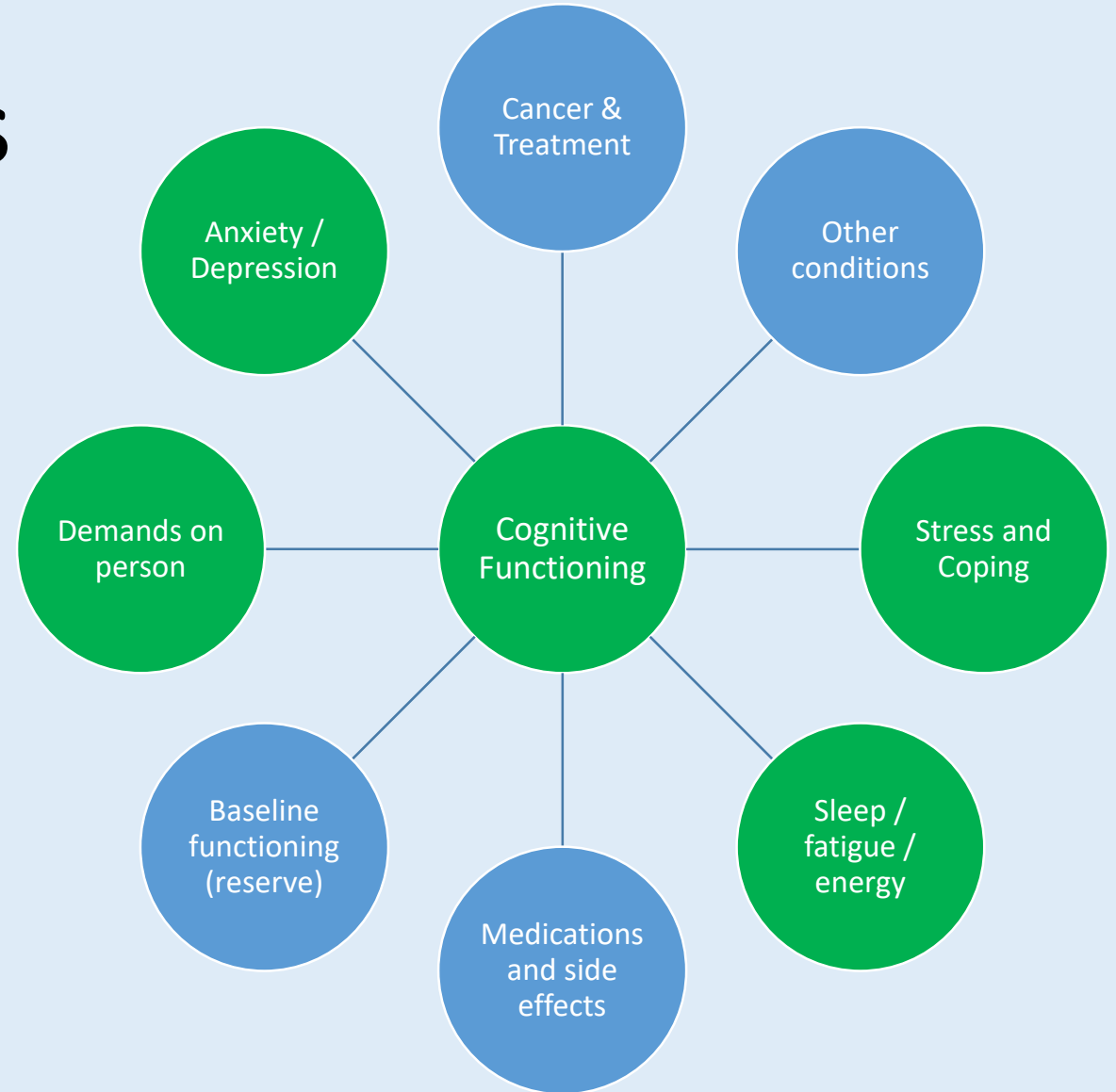
Cognitive-Behavioral Therapy

- Focus on thoughts and behavior
- Anxiety
- Depression
- Stress management
- Strategic decision-making



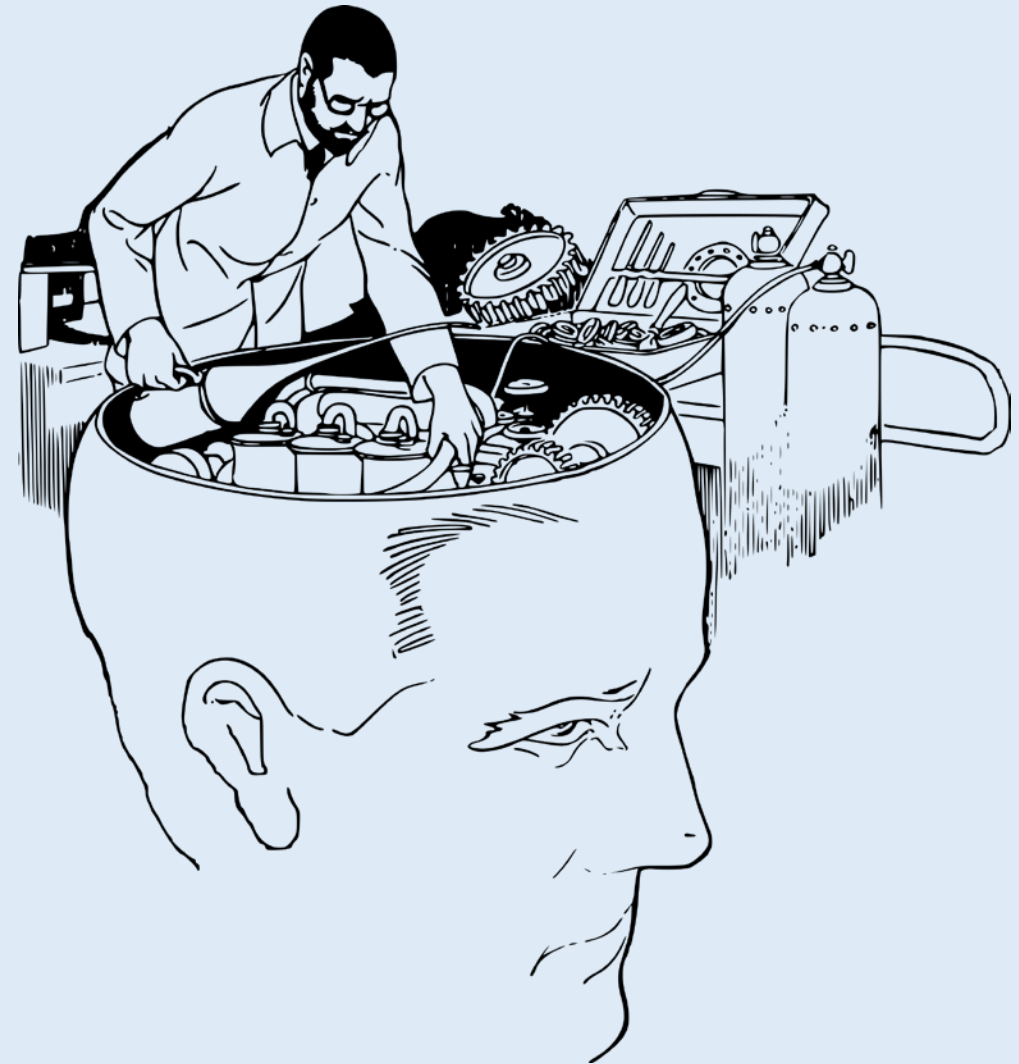
Mindfulness Activities

- Meditation
- Yoga
- Music therapy
- Spiritual engagement
- Relaxation and breathing exercises



Cognitive Rehabilitation

- Direct training of cognitive functions
 - Working memory
 - Attention
- Training skills and strategies to manage life demands
 - Scheduling and routine, optimizing smart phone and other technology, etc.
- May be in-person, computer based, usually involves homework



Medical Management

- Optimize medications
 - Consider treatments, side effects, and alternatives
- Medication management
 - Attention
 - Fatigue
 - Depression/anxiety
 - Sleep

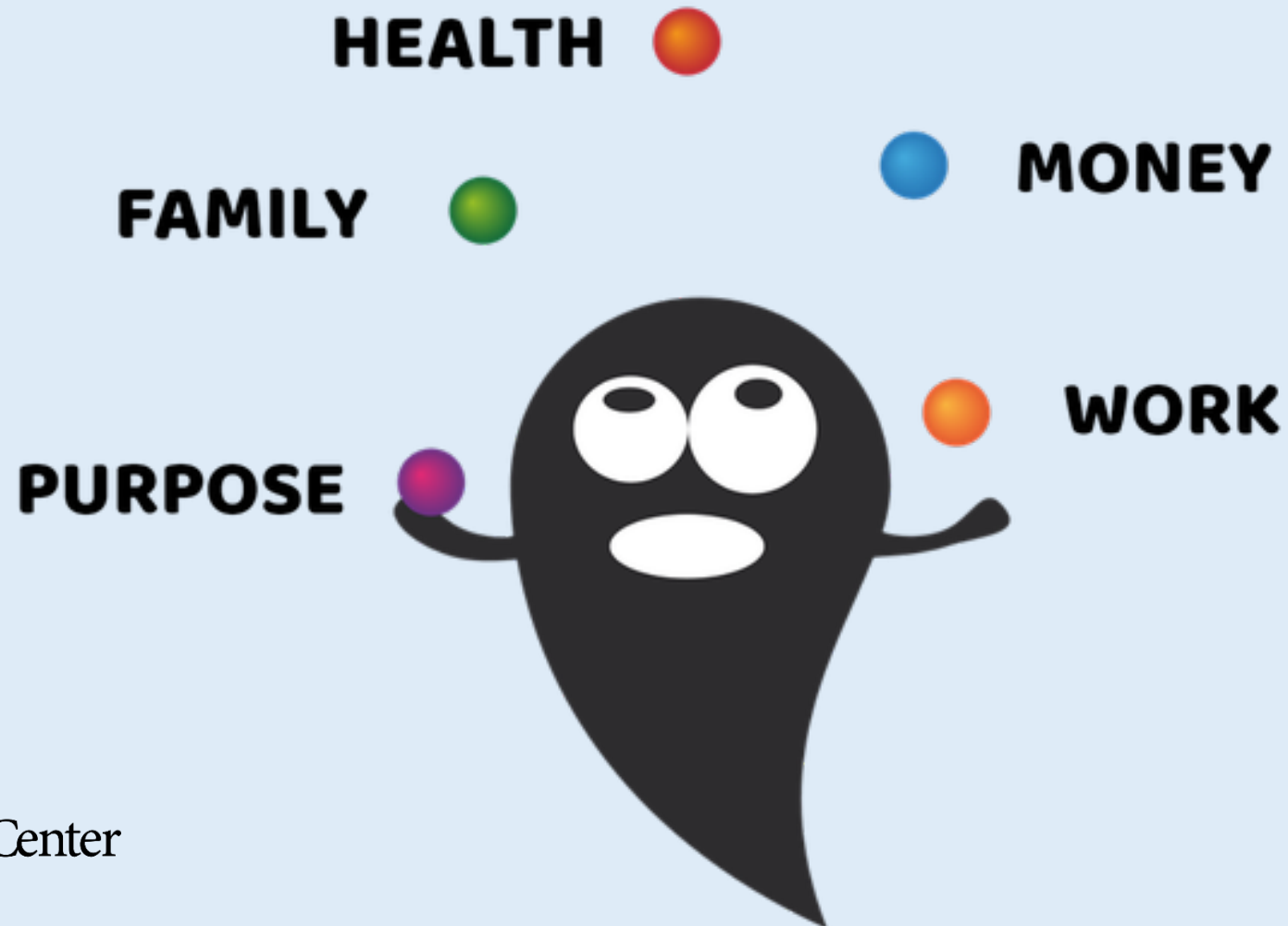


Healthy Habits

- Sleep
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Supports for School and Work



ADA Accommodations for Students With Disabilities In College

Federal regulations under Section 504 of the Rehabilitation Act of 1973 requires that colleges provide reasonable accommodations to ensure that their courses do not discriminate on the basis of disability. A disability is defined as:

- has a physical or mental impairment which substantially limits one or more major life activities,
- has a “record of” such impairment, or
- is regarded as having such an impairment.

Common Disabilities Served by a University Office of Disability Services

- Attention Deficit Hyperactivity Disorder
- Psychological Disabilities
- Learning Disabilities
- Chronic Illnesses
- Mobility/Physical Disabilities
- Autism Spectrum Disorder
- Blind and Visually Impaired
- Deaf and Hard of Hearing
- Acquired Brain Injury and Traumatic Brain Injury Accommodations

When can you ask for accommodations?

- a) Prior to enrollment
- b) During your enrollment period
- c) During the course of study
- d) After being diagnosed
- e) Never
- f) All of the above



Steps in Requesting Accommodations

- No other individual, including parents, case managers, etc. can request accommodations on a student's behalf
- Contact the University's Student Disability Services Office to schedule a meeting
- Provide counselor with current disability related documentation before meeting
- During meeting provide information about disability and requests
- Upon approval of accommodation you may need to request accommodations each semester

Common College Accommodations

- Breaks as needed
- Extended testing time
- Note-taking accommodations
- No more than one exam per day
- Reduced Course Load
- Sign language interpreters
- Textbooks in alternate format



Medical Withdrawal from University

- Medical withdrawal (all courses removed) will be approved only for severe illnesses or injuries of an acute emergency nature that incapacitates the student.
- Contact Dean of Studies for your college
- Fill out medical withdrawal form
- Must provide appropriate medical documentation
- Financial aid and scholarships are affected
- Medical clearance letter from physician is required to return to university
- May have to reapply to university



AMERICANS WITH DISABILITIES ACT (ADA)

The ADA is a civil rights law passed in 1990 and amended by Congress in 2008. Under the ADA, you have a disability if you have a physical or mental impairment that substantially limits a major life activity. It prohibits all types of discrimination based on:

- An actual disability
- A history of a disability
- A perceived disability (i.e. being regarded as having a disability)
- An association with a person with a disability

Title I of American Disabilities Act (ADA) of 1990:

- Seeks to ensure equal employment opportunities based on merit
- Makes it unlawful to discriminate in employment against a qualified individual with a disability

AMERICAN'S WITH DISABILTY ACT (ADA)

If an eligible person has or has had cancer, Title I of the ADA law:

- Protects him/her from discrimination in all phases of employment (hiring, firing, benefits, etc.)
- May entitle him/her to reasonable accommodations

What Questions Can Job Applicants With Disabilities Be Asked?

- Applicants can be asked questions about ability to perform job-related functions
- Applicants can be asked to describe or to demonstrate how, with or without reasonable accommodations they would perform job – related functions.
- The questions asked should focus on the applicant’s ability to perform the job, not on a disability.

Can't Be Asked in Application or Interview:


- Have you ever been treated for any of the following conditions or disease?
- Please list any conditions or disease for which you have been treated in the past 3 years.
- Have you ever been hospitalized? If so for what condition?
- Have you ever been treated for any mental condition?
- Is there any health-related reason you may not be able to perform the job for which you are applying?
- Have you a had a major illness in the last 5 years?
- How many days were you absent from work because of illness last year?

Can't Be Asked in Applications or Interview:

- Do you have any physical defects that preclude you from performing certain kinds of work? If yes, describe such defects and specific work limitations.
- Do you have any disabilities or impairments, which may affect your performance in the position for which you are applying?
- Are you taking any prescribed drugs?
- Have you ever been treated for drug addiction or alcoholism?
- Have you ever filed for workers' compensation insurance?

REASONABLE ACCOMMODATIONS

Employers with 15 or more employees must provide ***“reasonable accommodations”*** for qualified employees with disabilities to allow them **equal opportunity** to participate in the job application process, perform the essential functions of the job, or enjoy the benefits and privileges of **employment if this does not present an undue burden to employer or other employees.**



Factors to be considered in determining undue hardship

- Nature and cost of the accommodation
- Overall financial resources of the facility or facilities involved in the provision of the reasonable accommodation
- Number of persons employed at the facility and the effect on expenses and resources
- Overall size of the business of a covered entity with respect to the number of its employees

Reasonable Accommodations

- Making existing facilities accessible
- Providing readers and interpreters
- Adjusting or modifying examinations, training materials, or policies
- Altering a work schedule
- Purchasing assistive technology products
- Job reassignment or restructuring; including part-time or modified work schedule

Specific Examples of Reasonable Accommodations

- Removing deep pile carpeting in a work area (or placing a usable surface over the carpet) so an individual can propel a manual wheelchair.
- Reassigning an employee who loses her sight to a vacant position that does not require driving.
- Permitting use of accrued paid leave or unpaid leave for necessary treatment.
- Providing reserved parking for a person with a mobility impairment.




Best Ways to Identify a Reasonable Accommodation

- Contact EEOC
- State or local rehabilitation agencies (Texas Workforce Solution) and other organizations providing services to individuals with disabilities.
- The Job Accommodation Network (JAN) is a program of the U.S. Department of Labor for person with a disability who is unsure which adjustment may work for him/her. 1-800-526-7234
- Searchable Online Accommodation Resource (SOAR) is a system that allows people to explore various accommodation options for different types of medical conditions in particular workplace settings.

Return to Work

- Check to see if your company has a return to work program
- Employee Assistance Programs
- Human Resource
- Talk to supervisor



What To do If You Think You Have Been Discriminated On the Basis of Disability

- Contact the U.S. Equal Employment Opportunity Commission (EEOC). For information and instructions on reaching your local office call 1-(800)-669-4000
- A charge of discrimination generally must be filed within 180 days of the alleged discrimination.
- EEOC field offices can refer you to agencies that enforce those laws. It is also unlawful for an employer to retaliate against you for asserting your rights.

Organizations & Laws for Work Protection

Family and Medical Leave Act (FMLA) <http://www.dol.gov/whd/fmla/>

This law allows an ill person or a family member caring for an ill person to take up to 12 weeks off from work – without pay but with no loss of benefits and job protection.

American's with disabilities Act (ADA) <http://www.ada.gov/>

Under the ADA, anyone who has had cancer is considered disabled and is entitled to reasonable accommodations to continue working. Employers with 15 or more employees must adhere to the ADA. Only applies if you are able to perform essential functions of your job with reasonable accommodations.



Organizations & Laws for Work Protection

- **Vocational Rehabilitation Act of 1973**
 - Under this law, people with cancer may be eligible for job retraining if they seek a different kind of work than they did before cancer.
 - State Government employment agencies can help with this process.
- **Texas Workforce Solutions (TWS)**
 - <http://www.TexasWorkforce.Org>
- **Southwest ADA Center (SWADA)**
swbdtac@ilru.org

Thank you!!!

