Adapting to Sensory Changes in Dementia:

Maximizing Positive Outcomes

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Objectives for this session:

- Describe common sensory changes associated with dementia and their effects on perception, behavior, and daily functioning.
- Analyze the impact of sensory changes on care interactions and environmental experiences.
- Implement evidence-based, person-centered strategies to adapt care approaches and environments that promote safety, engagement, and quality of life.

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Understanding Sensory Processing

Senses: a way to take in data from the environment

What senses have you used today?

- Vision
- Hearing
- Touch
- Smell
- Taste

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Understanding Sensory Processing: Vision

Most powerful sensory input to the brain

2 Types:

- Peripheral- "safety" vision
- Central- "curiosity" vision

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Understanding Sensory Processing: Vision

How vision works:

1. See an image
2. Image travels via wiring in the brain to the occipital lobe
3. Occipital lobe processes image
4. Image is sent via dorsal and and ventral pathways through the brain for location and recognition

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Understanding Sensory Processing: Hearing

How hearing works:

1. Hear a sound
2. Sound travels through the ear to the temporal lobe
3. Temporal lobe processes sound
4. Sound is sent to Wernicke's and Broaca's area for comprehension

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Understanding Sensory Processing: Touch

Most touch is done using skin- largest organ of the body

2 Types:

- Light touch- alerting, arousing; signals danger
- Touch with pressure- comforting, signals security

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Understanding Sensory Processing: Touch

How touch works:

1. Touch receptors, usually in your skin, detect sensation
2. The message travels along nerve pathways until it reaches the thalamus, which acts as a hub, sending signals to other parts of the brain
3. Signals are processed via the somatosensory cortex, which translates the touch into a perception

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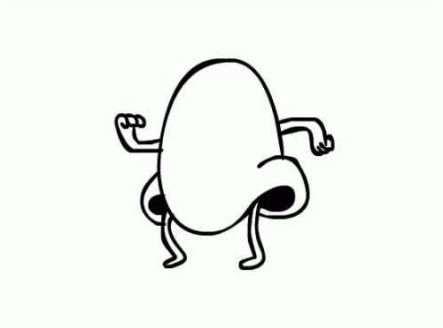
Understanding Sensory Processing: Smell

How smell works:

1. Scent detected by olfactory sensory neurons in the nose
2. The olfactory bulb receives scent and identifies it
3. The limbic system connects scent with emotion



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Understanding Sensory Processing: Taste

How taste works:

1. Gustatory cells in the mouth detect molecules released when eating drinking.
   a. These cells are in taste buds and other areas of the mouth
2. The taste travels along nerve pathways to the thalamus
3. Thalamus sends taste to frontal lobe where it is identified

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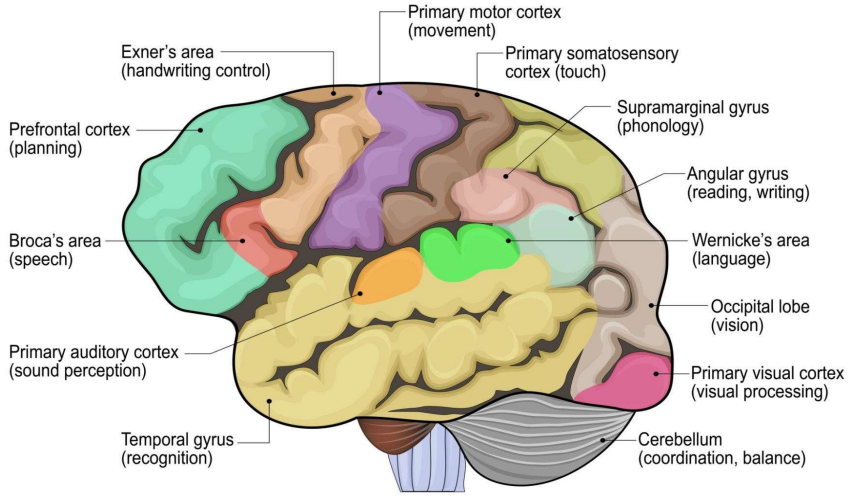
FUNCTIONAL AREAS OF HUMAN BRAIN



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Thalamus

- Anterior view
- Lateral view

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How Dementia Affects the Senses

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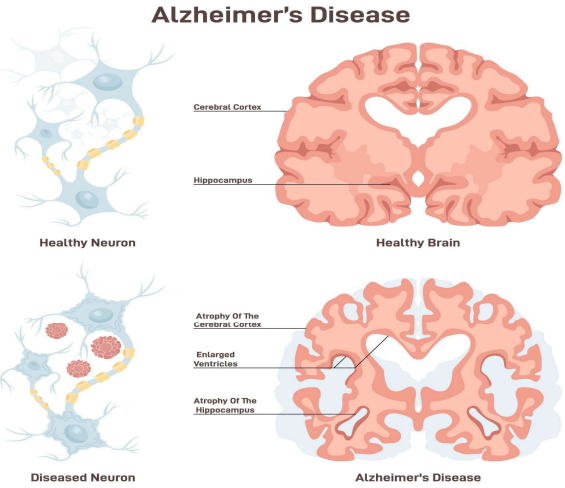

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Vision Changes in Dementia

- Peripheral vision loss
  - With aging alone
  - With dementia
    - Scuba vision
    - Binocular vision
- Depth perception
- Contrast

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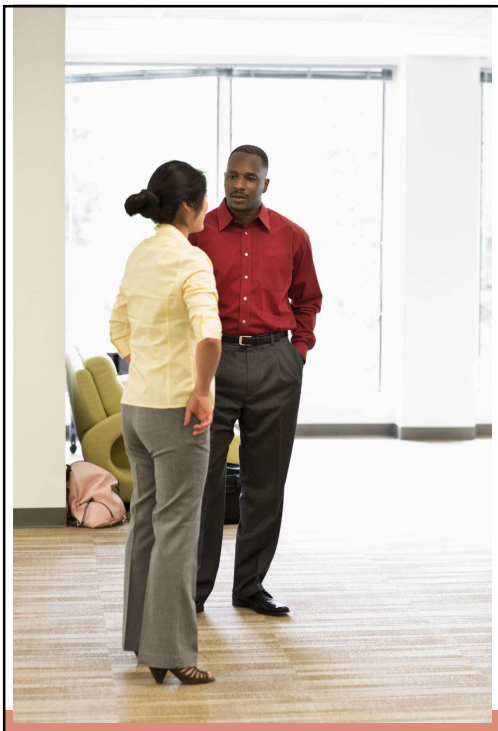

Confrontational vs. Supportive Stance

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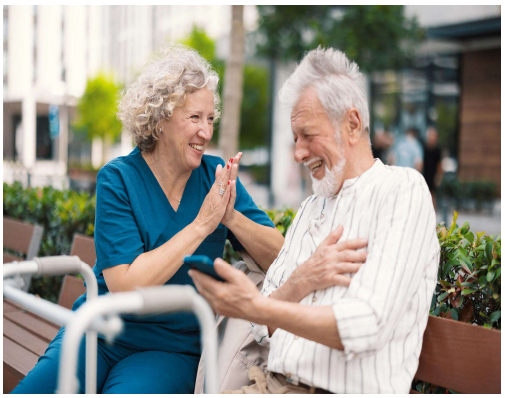
Benefits of Supportive Stance

- Decreases aggression
- Decreases startle response
- Decreases risk for falls
- Allows the PLWD a "way out"



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Order of Approach:

1. Visual
2. Verbal
3. Physical

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Vision Changes in Dementia

- Depth Perception/Contrast
  - Flooring
    - Changes may mimic changes in elevation
    - Dark areas may appear as holes
    - Shiny surfaces may appear wet
    - Busy flooring patterns may cause the PLWD to confuse it with objects which they may try to pick up
      - May cause the PLWD to hesitate or refuse to advance

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Vision Changes in Dementia

- Depth Perception/Contrast
  - Lighting
    - Changes in lighting from room to room can cause increased confusion
  - Color
    - Monochromatic themes can cause difficulty when looking for toilet seats, faucets, etc.

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Dementia Friendly Design

- Choose consistent, matte flooring. Changes in flooring should have similar LRV
- Pick contrasting floor/wall colors (important to delineate junctions)
- Choose fixtures that contrast with color of item (example: colored toilet seat)

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Dementia Friendly Design

- Keep lighting consistent
- Consider "in-bowl" toilet lights
- Utilize signage with symbols
  - Place at eye level

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Hearing Changes in Dementia

- Hearing loss is a risk factor for dementia (Lancet, 2020)
  - Brain must work harder to figure out what is being said
  - May cause aging brain to shrink
  - Contributes to social isolation
    - Less intellectual stimulation causes loss of cognition

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Hearing Changes in Dementia

- Dementia affects hearing sooner than vision
  - Temporal lobes more central in the brain
- Verbal cues are best given accompanied by visual cues

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What?

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Engaging Through Sound

- Tone of voice
- Familiarity
- Music
  - Music memory resides on the right side of the brain
  - Neural pathways associated with music thought to be less affected by dementia
    - Dementia tends to progress quicker on the left side of the brain
  - Utilize rhythm with ADLs
  - Music & Memory programs

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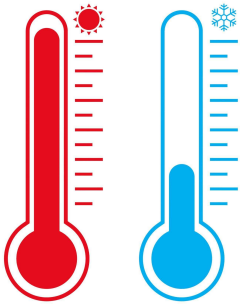
Touch/Feeling Changes in Dementia

- Most touch changes center around temperature
  - Can be dangerous in regards to burns and frostbite
- How we use touch is what changes



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Engaging Through Touch

- Positive Physical Approach™ (PPA)
- Hand-under-Hand™ (HuH)
  - Allows the PLWD to feel supported, not controlled
  - Technique useful for all ADLs
    - Skill vs. strength fingers
  - Can be done with both hands
    - A "pump" in the hand directs attention to you

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Engaging Through Touch

- Touch is a basic human need
  - Absence of touch leads to poor health outcomes, especially regarding mental health
- Touch from HCW may be the only touch a PLWD receives
- Hand massages, hugs, handshakes
  - Only after visual contact has been established

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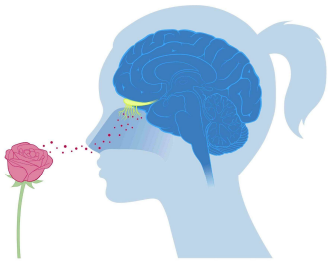
Smell Changes in Dementia

- Often an early sign
- Occurs across multiple forms of dementia, but type determines rate of loss
- Olfactory bulb damaged by dementia
- Acetylcholine deficiency can impede olfactory processing



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Engaging the Sense of Smell

- Scent diffusers
  - Lavender, chamomile- calming
  - Mint, citrus- energizing
- Scent as a way of reminiscing
  - Baking
  - Gardening
  - Vacations
- Scent as a way to stimulate appetite
  - Exposure to meat scents prior to meals increased consumption of meat AND vegetables by 25%

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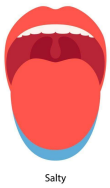
Understanding Taste Changes in Dementia

- Smell and taste are closely connected
- Neural pathways connecting the mouth with the brain are damaged, causing decreased taste sensation
- Dementia pathologies in the thalamus can interfere with its ability to detect and identify taste
- Decrease in taste and smell can lead to poor eating habits



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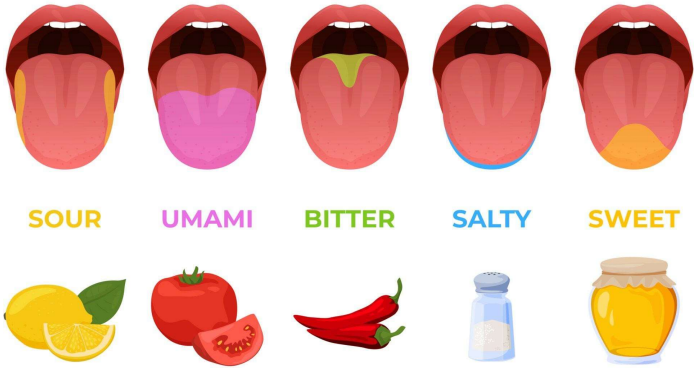

There are five basic taste types

- Salty and sweet are retained the longest

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Supporting Nutrition Through Changing Taste

- Food preferences
  - Vegetarians may want meat
- Meal size
  - A PLWD who used to eat a big breakfast and a small lunch may now want a small breakfast and a big lunch
    - Small portion servings = feeling less overwhelmed
- Meal location
  - Where did the PLWD used to eat?

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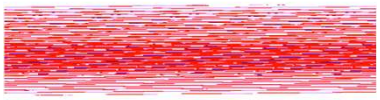
Boosting Appetite Through Flavor

- Sweet foods may be more appealing
  - Adding sugar to meals to initiate
  - Fruit, smoothies, yogurt
- Spicy foods
  - Adding hot sauce or types of pepper
- Offer varieties of foods
  - New foods the PLWD may not have tried
  - Foods the PLWD may not have previously liked



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When we adapt to sensory changes, we don't just provide care —we provide dignity, comfort, and connection.

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Thank You!

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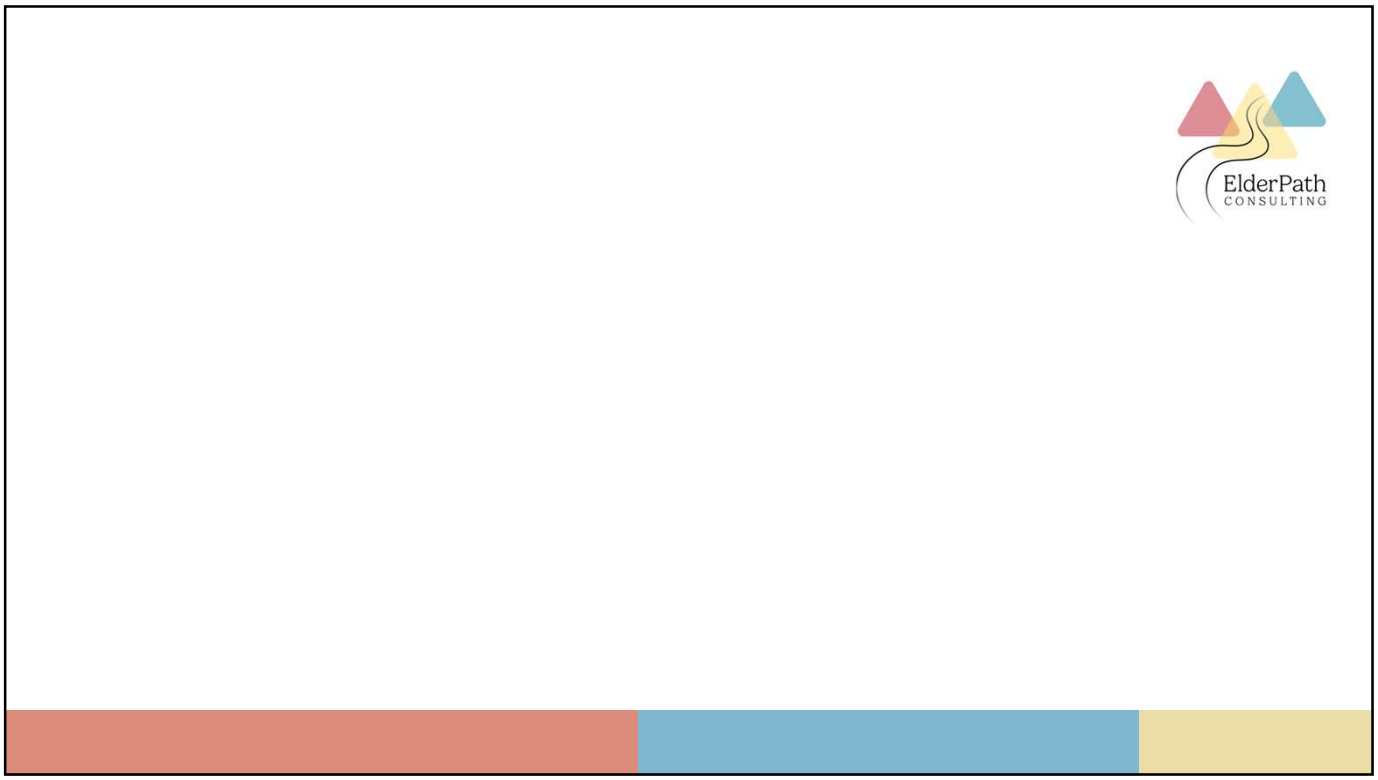

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