



# Designing Memory Care Facilities



THE ULTIMATE  
FLOORING EXPERIENCE

Johnsonite Tandus Centiva **DESSO**



# Designing Memory Care Facilities



Tarkett  
30000 Aurora Road  
Solon, OH 44139

Tarkett is a Registered Provider with the American Institute of Architects Continuing Education Systems. Credit earned on completion of this program will be reported to CES Records for AIA members. Certificates of Completion for non-AIA members available on request.

Provider Number: J168  
Course Number: MEMCARE14  
Continuing Education Hour: 1.00 LU



This program is registered with AIA/CES for continuing professional registration. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material or construction or any method or manner of handling, using, distributing or dealing in any material or product. Questions related to specific materials, methods and services should be directed to the program instructor.



# Designing Memory Care Facilities



Tarkett's Designing Memory Care Facilities CEU is registered with the Interior Design Continuing Education Council (IDCEC) for continuing education credits. This credit will be accepted by the American Society of Interior Designers (ASID), International Interior Designers Association (IIDA) and Interior Designers of Canada (IDC).

The content included is not deemed or construed to be an approval or endorsement by IDCEC of any material or construction or any method or manner of handling, using, distributing or dealing in any material of product.

Questions related to specific materials, methods and services should be directed to the instructor or provider of this CEU.

## IDCEC Course Details:

CEU Credit: 0.1

Designation: Health, Safety, Welfare

Subject Code: 4.11

Classification: Basic

Class Code: CC-103671-XXXX\*



*\*IDCEC Class Codes are event specific and will be distributed on site at the end of your course presentation. This unique class code will also appear on final Certificates of Completion.*

*This CEU will be reported on your behalf to IDCEC and you will receive an email notification. Please log in and complete the electronic survey for this CEU. Certificates of Completion will be automatically issued once you have submitted the online survey for this CEU. Attendees who do not belong to ASID, IIDA or IDC and do not have a unique IDCEC number will be provided with a Certificate of Completion after this CEU.*

# + Copyright Materials



This presentation is protected by U.S. and International copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.

# + Learning Objectives

- Explain how design can better accommodate the memory loss, cognitive decline and behaviors commonly caused by Alzheimer's disease and dementia and improve overall quality of life for residents with these conditions.
- Equip interiors to manage potential environmental triggers, such as light and sound, to reduce agitation and aggressive episodes experienced by those with Alzheimer's disease and dementia.
- Design spaces so that they are more easily seen and understood by residents with Alzheimer's disease and dementia.
- Create interior environments that promote safe ambulation and exploration.

# Alzheimer's Statistics



- 5.2 million are living with Alzheimer's in America
  - 200,000 under the age of 65
  - 16 million estimated by 2050
- Sixth leading cause of death in the US
- Of Americans aged 65 or older, 1 in 9 has Alzheimer's.
  - One person every 67 seconds
  - By 2050, this ratio will grow to 1 in 3 people, or one person every three 3 seconds
- 1 in 3 seniors die from dementia (500,000 per year)
- $\frac{2}{3}$  of Alzheimer's patients are women
- For a woman at age 60, the risk of breast cancer is 1 in 11, for Alzheimer's it is 1 in 6

# Cost of Alzheimer's Care



- In 2013, 15.5 million family and friends provided 17.7 billion hours of unpaid care to those with Alzheimer's and other dementias
  - Care was valued at \$220.2 billion, which is nearly eight times the total revenue of McDonalds in 2012
- Alzheimer's is the most expensive disease to treat in the nation
  - In 2014 the direct cost to the American society for caring for those with Alzheimer's will total an estimated \$214 billion, including \$150 billion in cost to Medicare and Medicaid
    - By 2050 the cost will reach an estimated \$1.4 trillion

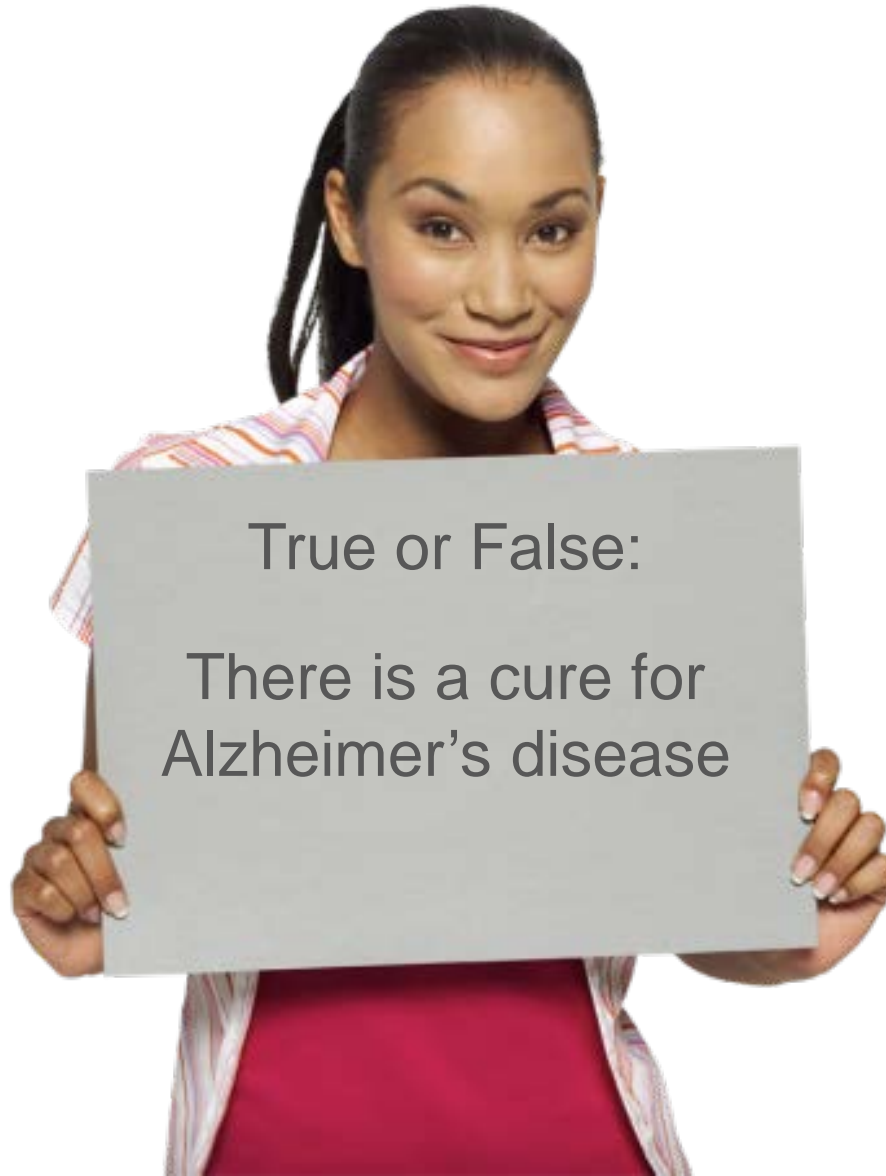
# Cost of Alzheimer's Care

- Nearly \$1 in \$5 of Medicare spending is spent on people with Alzheimer's and other dementias
- Average per-person Medicaid spending for those with Alzheimer's and other dementias is 19 times higher than the average per-person spending for all other seniors
- Unless something is done to curb the rapid growth of this disease Alzheimer's will cost an estimated \$1.2 trillion dollars in 2050 – Costs to Medicare and Medicaid will increase 500 percent.
- For caregivers: Due to the physical and emotional toll of Alzheimer's on caregivers had \$9.3 billion dollars in additional healthcare costs of their own in 2013





Quiz Time!

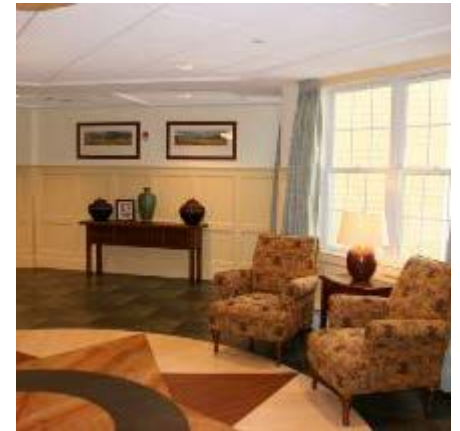
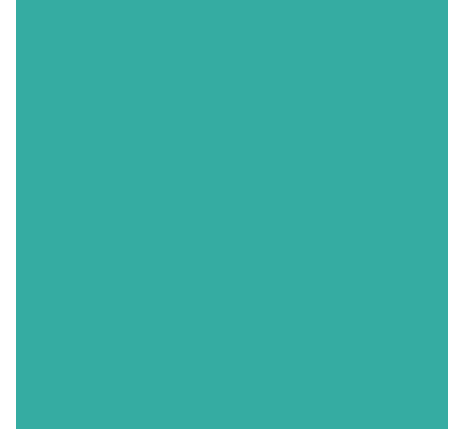


True or False:

There is a cure for  
Alzheimer's disease



FALSE





# Dementia & Alzheimer's Disease

# What is dementia?

- Decline in mental functioning
- Interferes with everyday activities
- Affects the ability to:
  - Think
  - Remember
  - Reason
  - Control or modify behavior



# Causes of Dementia

- Various diseases
- Strokes
- Head injuries
- Drugs
- Nutritional deficiencies

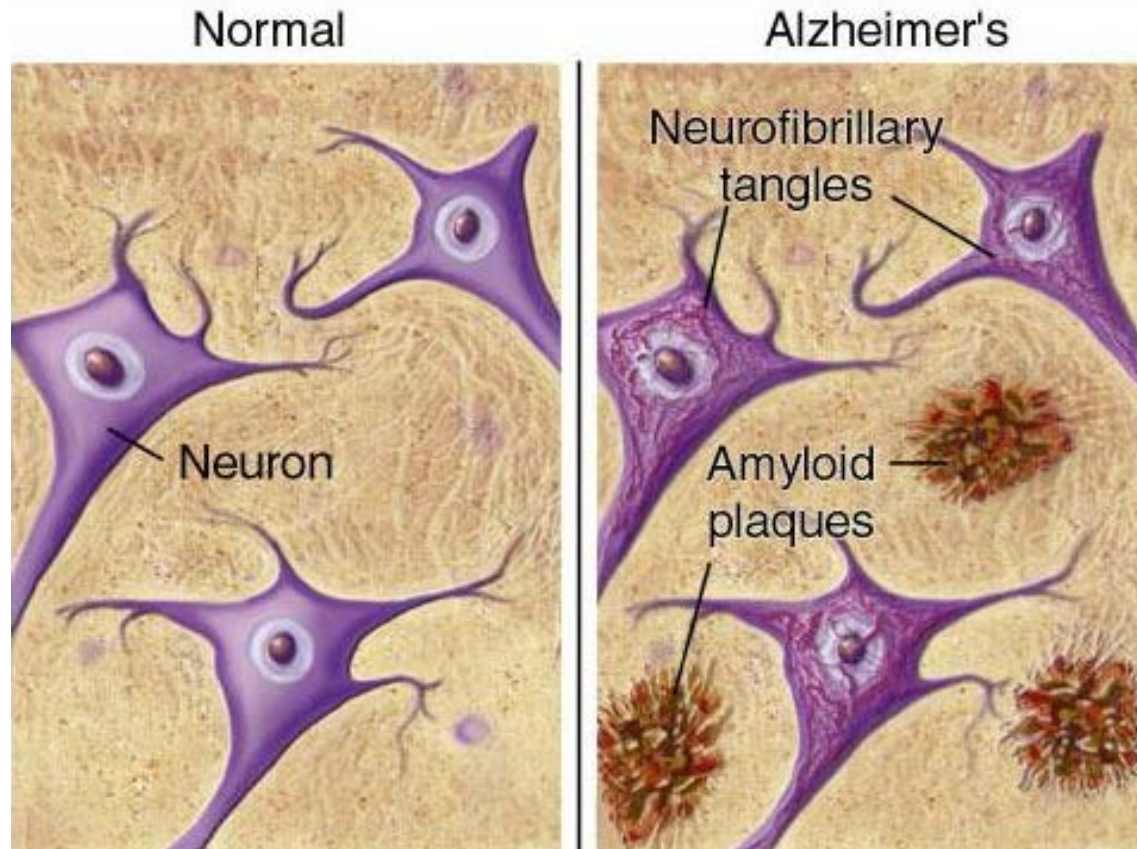


# What is Alzheimer's Disease?

- Defined as: A chronic progressive loss of cerebral function that leads to irreversible cognitive decline
- Affects everyday behavior
  - Memory
  - Thinking
  - Behavior



# The Aging Brain





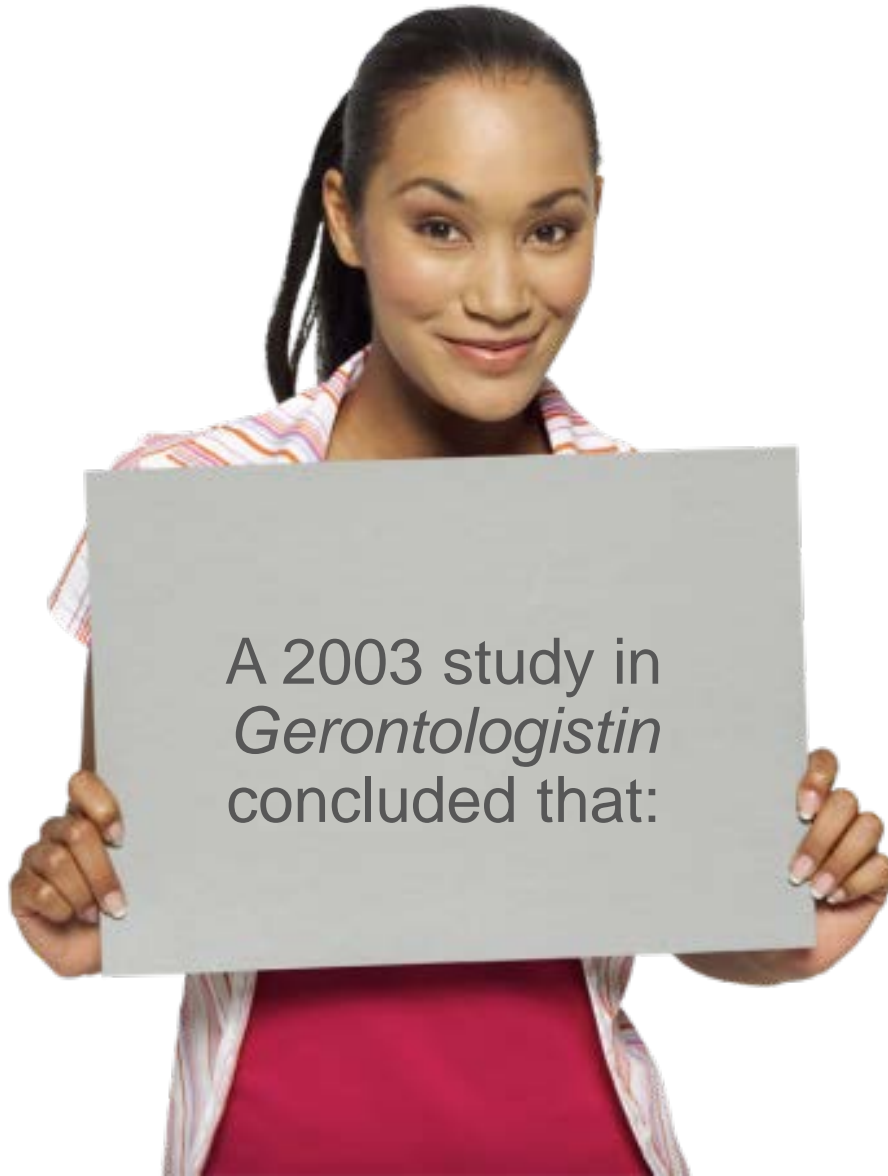
# Recognizing Alzheimer's Disease

- Progresses through multiple stages
- Not everyone experiences same symptoms
- Can cause:
  - Memory loss
  - Depression
  - Anxiety
  - Spatiotemporal disorientation (lack of awareness of levels, dates, places)
  - Problems with language and recognizing familiar objects
  - Mood and behavior problems
  - Problems executing coordinated movements
  - Problems with executive functions (planning and organizing daily activities)





Quiz Time!



A 2003 study in  
*Gerontologist*  
concluded that:



- A. Good design could reduce the anxiety, depression, social withdrawal, hallucinations, and agitation experienced by residents living with Alzheimer's disease.
- B. Design of the facility did not impact the daily experiences of residents living with Alzheimer's.
- C. Design of the facility did not impact the experiences of the staff.
- D. None of the above





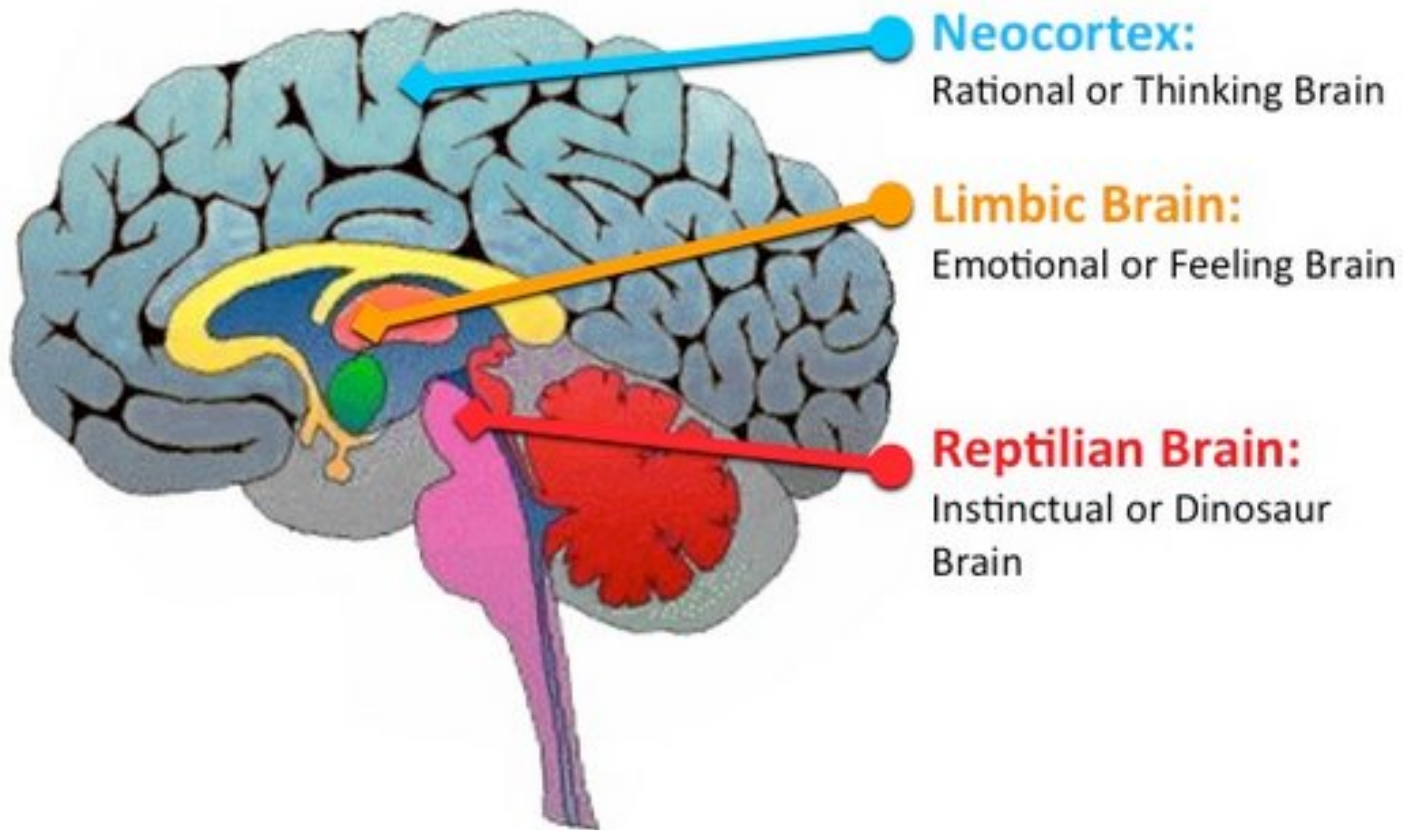
# Alzheimer's Disease and Memory Loss

# Crucial Role of Memory

- Help anchor a person in a time or place
- Help a person feel comfortable – a memory makes it familiar
- New experience every day
- Resident's rely on their ability to process their surroundings in real time



# Parts of the Brain



# Decline in Cognitive Function



- Dependence upon the primitive brain to make sense of the world limits a person's ability to process environmental stimuli beyond initial impressions
- Dark colors – or dimly lit areas – can seem foreboding and dangerous
- Loud noises can incite panic
- Even ambient noise can create an unsettling and constant sense of anxiety





# Alzheimer's Disease Behaviors



- Variety of behaviors:
  - Aggression
  - Anxiety
  - Depression
  - Hallucination
  - Confusion
  - Wandering
  
- Good design allows environmental triggers to be better managed



# Overstimulation Triggers

- Overstimulation can trigger aggressive behaviors
- Designing the interior to limit the causes of overstimulation such as:
  - Loud noises
  - Bright lights
  - Clutter
  - Crowding





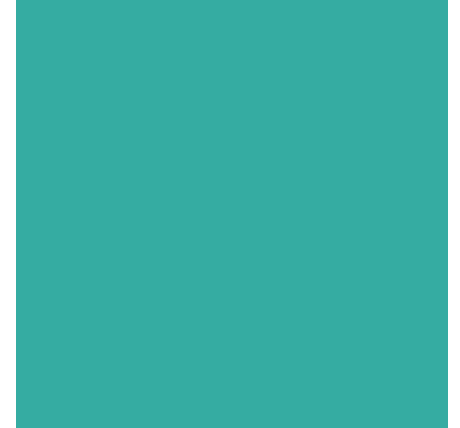
Quiz Time!



People with  
Alzheimer's disease  
can suffer from:



- A. Memory loss
- B. Decline in cognitive function
- C. Aggression, anxiety, depression, hallucinations and wandering
- D. All of the above





+ Introducing Memory Care  
Design

# Long-Term Care Environments

- Same environments for patients with wide variety of other medical conditions
- Facilities have evolved to offer different levels of assisted care
  - However, not specialized in design of the interiors to suite the specific needs of residents
- Same style of rooms, same common areas and same hallways as those who had suffered strokes, and those afflicted with emphysema, diabetes and other chronic ailments



# Memory Care

- Designing long-term senior living spaces specifically tailored to Alzheimer's and dementia residents is gaining momentum
- The name for dementia-centric design is memory care
- Specifically designed and staffed to support people with Alzheimer's disease and other forms of dementia





# Memory Care Facilities are in Demand

- Fastest growing segment of the senior care market
  - 23% growth since 2006
- Growth rate of memory care facilities is two times higher than the growth rate for other types of senior housing



23% growth  
since 2006

# Design Objectives for Memory Care Facilities

- Memory care facilities provide an environment for the unique needs of residents living with Alzheimer's and dementia
- Goal of the facility is to improve the quality of life
- Design of the facility can make a material difference in quality of life by:
  - Reducing anxiety
  - Depression
  - Social withdrawal
  - Hallucinations
  - Agitations



# Four Unique Design Objectives



Making the space feel more residential and familiar



Managing environmental triggers that can cause discomfort or agitation



Helping patients see and understand their surroundings



Aiding in safe ambulation

# More Residential and Familiar Feel

- It can be difficult for people with mid-level Alzheimer's disease and dementia to process new surroundings and new experiences
- Stark and institutional aesthetics could exacerbate this condition
- Memories of home make the facility more familiar
- Some facilities encourage residents to bring favorite pieces of furniture and fill with personal mementos



# Manage Environmental Triggers

- Good memory care design effectively manages environmental triggers that can generate:
  - Anxiety
  - Confusion
  - Agitation
  - Create discomfort
- Important to protect the interior environment from:
  - Overly bright light
  - Glare
  - Excessively loud noise
  - Particular colors and patterns



# See and Understand Surroundings

- Multiple challenges can be faced by those with Alzheimer's disease
- Designers can accommodate compromised vision by:
  - Ensuring the interior is properly illuminated
  - By using contrasting colors on walls and floors



# Aid Safe Ambulation and Encourage Movement

- Risk for wandering
- Very dangerous and emotionally stressful for residents
- Physical activity and movement is critical
- Designers challenged to create interiors that:
  - Encourage ambulation
  - Protect residents from wandering
- Creating visual interest and visual cues with light and color
- Flooring
  - Flooring patterns and colors can be used to encourage residents to walk in certain areas and can discourage them from walking into restricted areas or accessing exits or elevators.





Quiz Time!





Which of the following  
are design objectives for  
memory care facilities?





- A. Create a residential and familiar look and feel
- B. Manage environmental triggers
- C. Help patients see and understand their surroundings
- D. All of the above





# Designing for Dementia

Color, Lighting, Daylight and Flooring

# Color and Pattern Best Practices



- Little evidence to support a universal best practice palette
- Colors should be well balanced in hue, value and saturations
- Incorporate sufficient color contrast on walls and floors
  - Helps brain differentiate between horizontal and vertical planes





# Creating a Comfortable and Familiar Space



- Can use color to invoke memories
  - Create more comfortable atmosphere
- Moving away from stark white, medical blue-green and sterile gray
- Can include neutrals and natural colors
  - Regional or cultural significance
- Wood trim, accents of wood aesthetic, brick and stone



# Colors Linked to Confusion and Agitation

- Acid and electric colors
  - Agitate
- Bright red
  - Over stimulate – can trigger aggression
- Somber colors – dark brown, black, grey
  - Fear of falling
  - Perception of formidable obstacle
- Grass green or turquoise blue on the floor
  - Should be avoided – outdoor space or water could create confusion



# Patterns Linked to Confusion and Agitation

- Patterns to avoid:
  - Large stripes
  - Repetitive geometric patterns
  - Flakes of strongly contrasting color
  - Typographical motifs
  - Patterns that imitate nature
    - Grass
    - Leaves
    - Pebbles





# Adequate Color Contrast



- Spatial disorientation: difficulty distinguishing how spaces are organized in terms of vertical and horizontal spaces
- Result of diseased brain unable to make sense of the visual stimuli
- Specify contrasting colors on walls and floors



# The Aging Eye



- Age changes the way older people see color
- Lens gradually yellows – affects perception of color
- More difficult to distinguish shades of blue, green and violet
- Colors seem duller
- Eggshell and beige tones routinely used in elder care spaces
  - Increasingly more difficult as lens continues to yellow
- Adequate and even illumination helps residents see and understand their surroundings



# Specifying Appropriate Lighting Best Practices

- Essential in memory care design
  - Helps facility achieve design objectives
- Too dim or overly bright can cause resident discomfort
  - May trigger unpleasant behavioral episodes
- Visual interest
  - Encourage residents to explore facility
  - Discourage ambulation into high risk areas
  - Camouflage facility exit points
- Greater contrast and more saturated colors are key



# Illuminating Engineering Society of North America (IES)



- Recognized authority for determining the appropriate lighting levels
- IES first published guide outlining lighting level needs in senior living facilities in 1998
- Guide has since been approved by the American National Standards Institute (ANSI)
  - Revised in 2001 and in 2007



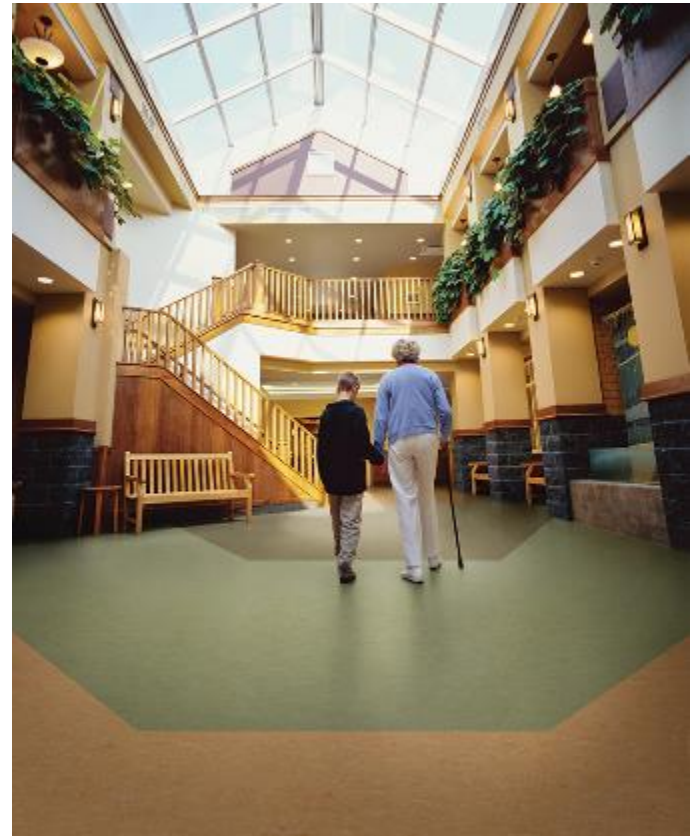
# ANSI/IESNA Guide

- Details minimum levels of illuminance that are recommended for ambient and task lighting
- Minimum 30 footcandles (fc) for resident room
- 75 fc task lighting in living room and bedroom
- At least 60 fc task lighting for areas used for shaving or applying makeup
- Hallways at 30 fc during the day and 10 fc during sleeping hours



# Create Visual Interest

- Lighting can direct attention of residents
- Visual interest around art or sculptures, highlight game or activity areas, approved outdoor or garden areas.
- Lower levels can discourage ambulation into certain areas
- May camouflage doors and door knobs



# Incorporating Daylight Best Practices

- Daylight exposure can have therapeutic benefits
- Access to daylight and views can contribute toward reducing:
  - Agitation
  - Easing pain
  - Resetting circadian rhythms
- Designers now make daylight readily available:
  - Tall windows
  - Skylights
  - Clerestory windows
- More sensitive to environmental factors such as glare
  - Include ample fenestration
  - Adequate daylight control



# Control Glare

- Occurs when an excessively bright light source disrupts the visual environment
- Daylight levels can range from a few footcandles on an overcast day to 8,000 fc on a bright, sunny day
- Tools to effectively manage sunlight
  - Light shelves and louvers
  - Manual or automated shading systems





# Flooring Selection Best Practices

- Residents are constantly in contact with the floor, unlike the walls and ceiling
- Helps residents see and understand surroundings
- Controls background noise
- Sanitary surface for safe ambulation



# No Dazzling or Distraction



- Color on the floor should reflect some light
  - Should not reflect overhead lights or daylight so proficiently that it could create glaring hot spots or a dazzling effect that could distract residents

## LIGHT REFLECTION INDEX



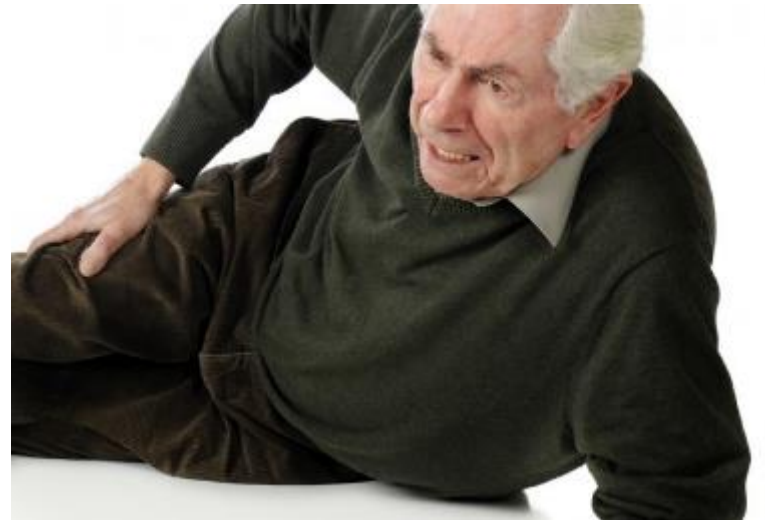
# Sound-Absorbing Flooring

- Goal is to keep noise levels comfortable and eliminate background noise as much as possible
- Reduces level of both impact and ambient noise created by falling objects and foot falls
- More options than carpet to achieve sound control
- Rubber, linoleum and vinyl resilient flooring are all solutions that have been engineered to offer better noise management



# Fall Statistics

- More than 2.1 million adults 65+ treated for nonfatal fall injuries in 2008
- Falls are the number one cause of death among 65 and older
- Most common injury is broken hip
- Number of fall deaths is 4 times as much as any other age group



# Low- or No-Wax Flooring Solutions

- Can reduce potential for falls
- Waxing a floor makes it more slippery
- Flooring solutions that do not depend on a waxing element for maintenance eliminates the possibility that a resident will slip and fall as a result of a freshly waxed surface
- Compromised visibility is another potential danger and waxed surfaces can host a glare or sheen that can distract a resident while walking and cause missteps and falls



# Easy to Sanitize

- Urinary and fecal incontinence
- Flooring must be practical
- Easy to sanitize
- Environment should remain hygienic and safe for residents and staff





Quiz Time!



The age, mobility issues, and urinary incontinence commonly found in people with Alzheimer's disease makes the space a great fit for flooring that:





- A. Is low-wax or no-wax and easy to sanitize
- B. Has a reflective value over 50
- C. Has complex geometric patterns
- D. Is dark gray or black





Putting It All Together

# In Summary – Color

- Resident rooms consist of areas for sleeping and socializing, a closet and a bathroom
- Bedroom and socializing area are painted in a warm color
- Bathroom painted in a slightly different but warm color
- Flooring selected in a contrasting color or pattern
- Popular hexagonal or wood finish may even stoke memories of home
- The layout should resemble a residence not a hotel or institution



# In Summary – Lighting

- Lighting designed to provide a minimum of 30fc throughout the bedroom, living area, closet and bathroom
- Brighter task lighting available in the bedroom and living room for reading
- Should be used to help orient residents in a space
- Help remind them what a space is used for
  - Ex: Bathroom – lighting could be used to draw attention to the hand basin and toilet



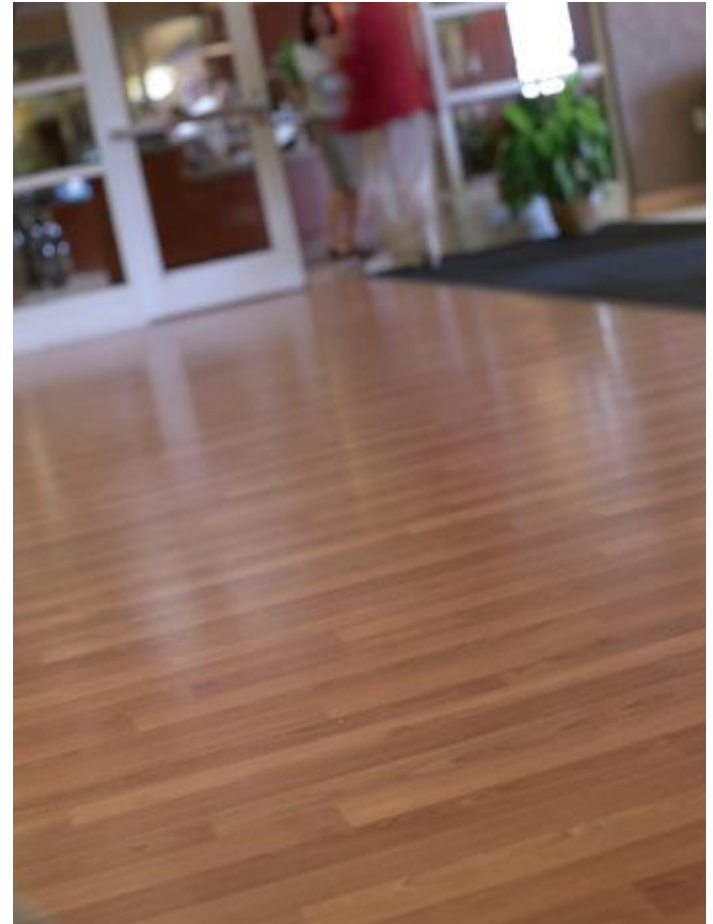
# In Summary - Daylight

- Windows and shades should be available
- Should prevent glare-causing daylight from making the space uncomfortable



# In Summary - Flooring

- Flooring will have reflective value between 30 and 40
- Does not pose risk for becoming a glaring or dazzling surface
- Low or no-wax and easy to clean
- Resident's room needs to be a safe and sanitary place to move, sleep and socialize



# + Learning Objectives

- Explain how design can better accommodate the memory loss, cognitive decline and behaviors commonly caused by Alzheimer's disease and dementia and improve overall quality of life for residents with these conditions.
- Equip interiors to manage potential environmental triggers, such as light and sound, to reduce agitation and aggressive episodes experienced by those with Alzheimer's disease and dementia.
- Design spaces so that they are more easily seen and understood by residents with Alzheimer's disease and dementia.
- Create interior environments that promote safe ambulation and exploration.



Thank you for attending!



THE ULTIMATE  
FLOORING EXPERIENCE

Johnsonite Tandus Centiva **DESSO**