

## Designers Light Forum

# Implementing Scientific Research in the Built Environment

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Credit(s) earned on completion of this course will be reported to **AIA CES** for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

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material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

# Learning Objectives

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At the end of the this course, participants will be able to:

1. Identify elements of lighting design that have an impact on health
2. Understand strategies to implement the research in the built environment
3. Understand the impact of daylight on health.
4. Understand the health impact of disrupted circadian rhythms

NICE TO MEET YOU

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CONCEPT LEAD: LIGHT

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# AGENDA

- What are healthy buildings?
- What do we know?
- How do we use this knowledge?



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• THE HEALTHY  
• BUILDINGS MOVEMENT

# COST OF CHRONIC DISEASE

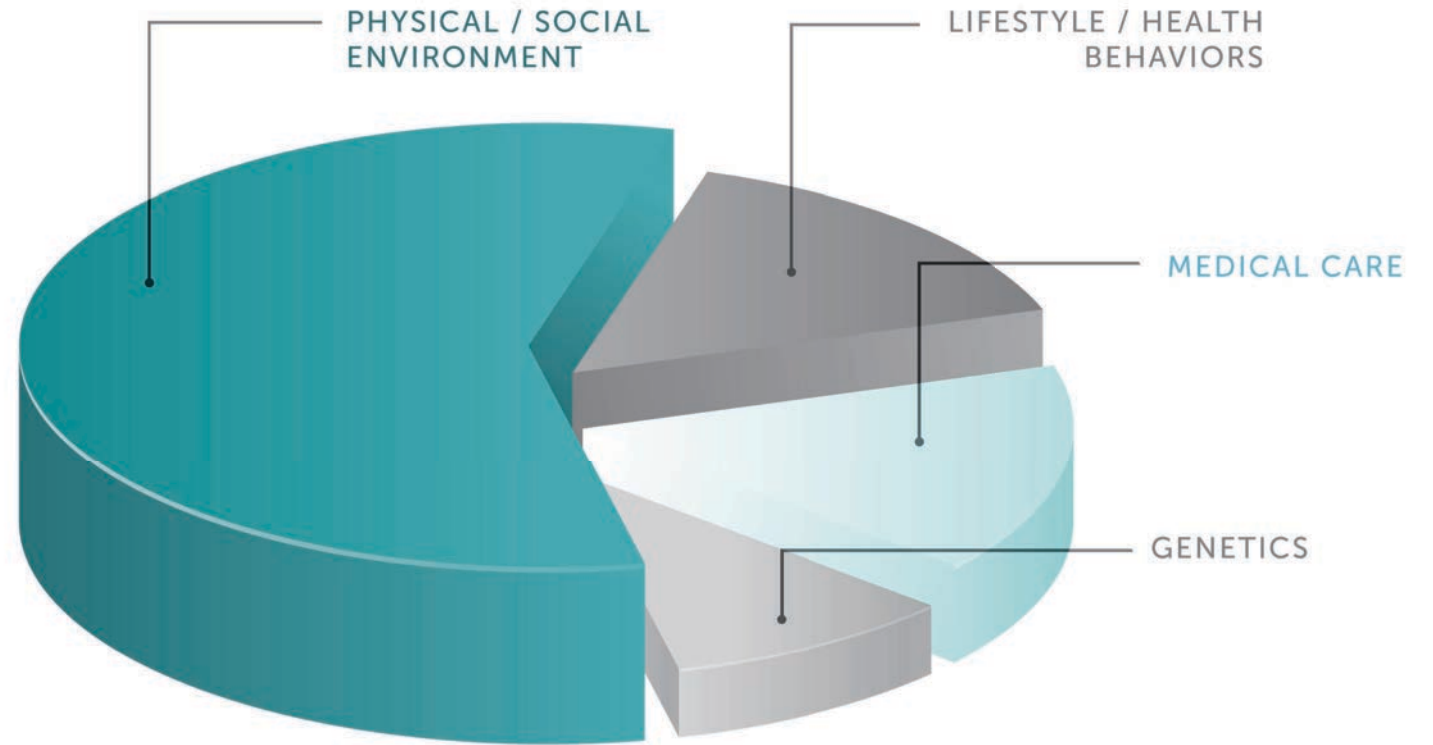
Mental illnesses and chronic diseases are closely related. Chronic diseases can exacerbate symptoms of depression, and depressive disorders can themselves lead to chronic diseases.<sup>2</sup>

**More than two-thirds of all adults believe that the U.S. health care system should place more emphasis on chronic disease preventive care.<sup>3</sup>**

**In the US, 75% of our healthcare spending  
IS ON PEOPLE WITH CHRONIC CONDITIONS.<sup>1</sup>**



# WHAT DETERMINES THE STATE OF HEALTH?







- **OUR ENVIRONMENT IS**
- **CHANGING HOW WE LIVE**



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- **AND ... WE SPEND ABOUT 90% OF OUR TIME INDOORS**



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- THE BUILDINGS WHERE
- WE LIVE, WORK, LEARN AND RELAX  
PROFOUNDLY IMPACT
- OUR HEALTH, WELL-BEING AND  
PRODUCTIVITY.





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• **LIGHT & HEALTH**



CONTINUING EDUCATION



# •LIGHT

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- Daylight
- Electric Light



# LIGHT IN THE BUILT ENVIRONMENT





# THINK ABOUT IT









# DAYLIGHT: PRODUCTIVITY

Studies have found a relationship between **proximity to windows and productivity**, especially when windows offer an opportunity to connect with the outdoors.<sup>1</sup>

1. Health, Wellbeing and Productivity in Offices. The next chapter for Greenbuilding, 2015. World Green Building Council.



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# DAYLIGHT: LEARNING

Studies have found a relationship between **access to windows and performance** of students in schools,



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# DAYLIGHT: RECOVERY

Recovery rates of patients recovering from  
depression and issues.





OUR EYES DO MORE THAN JUST SEE.

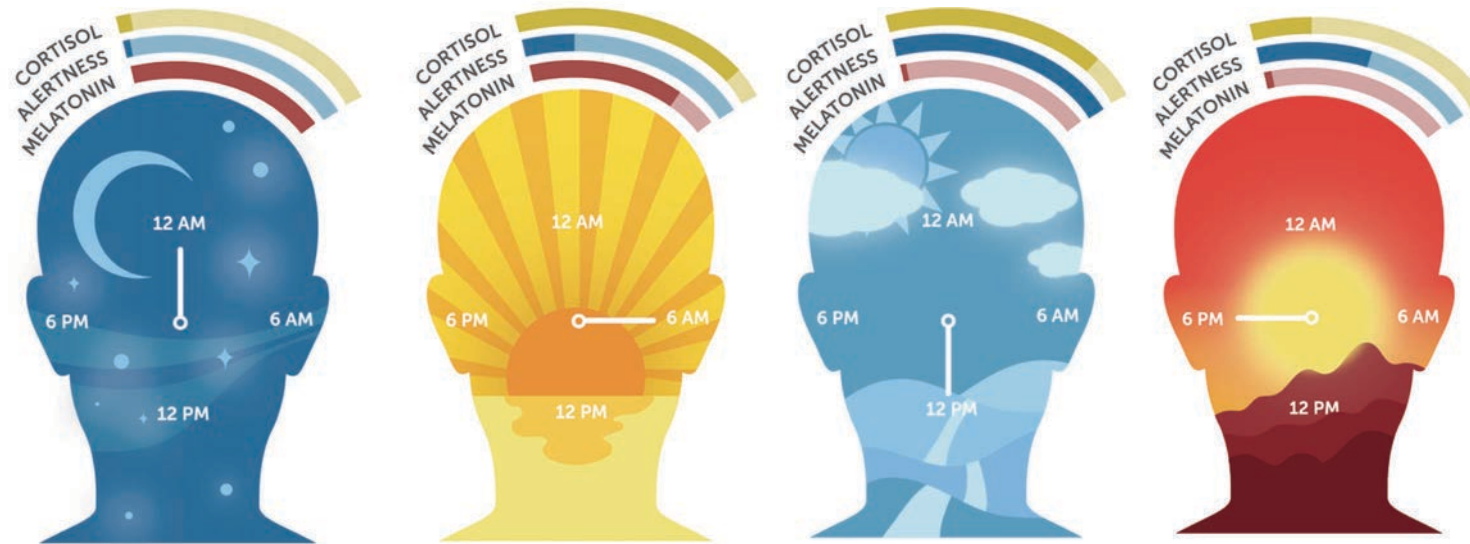


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- LIGHT AS A REGULATOR





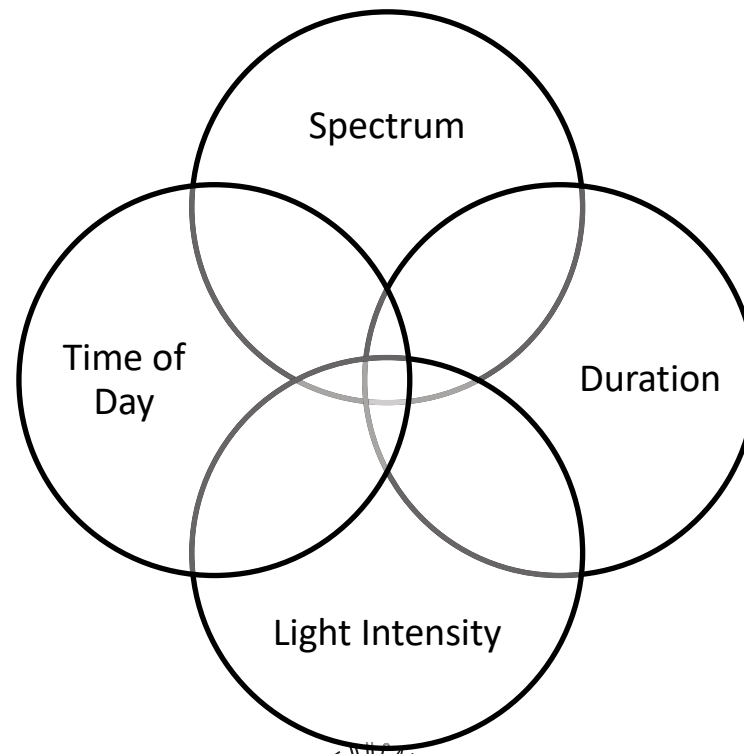
# IMPACT

- Obesity
- Breast Cancer
- Diabetes
- Depression
- Sleep Quality
  - Productivity
  - Cognitive Function





# FACTORS







# LIGHT AND THE EYES



# ELECTRIC LIGHT

All light has an impact on the circadian rhythm.



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# GLARE

- Accidents in the workplace
- Headaches
- Eye Fatigue.





# FLICKER

- Migraines
- Headaches
- Eye Fatigue
- Epileptic Seizures

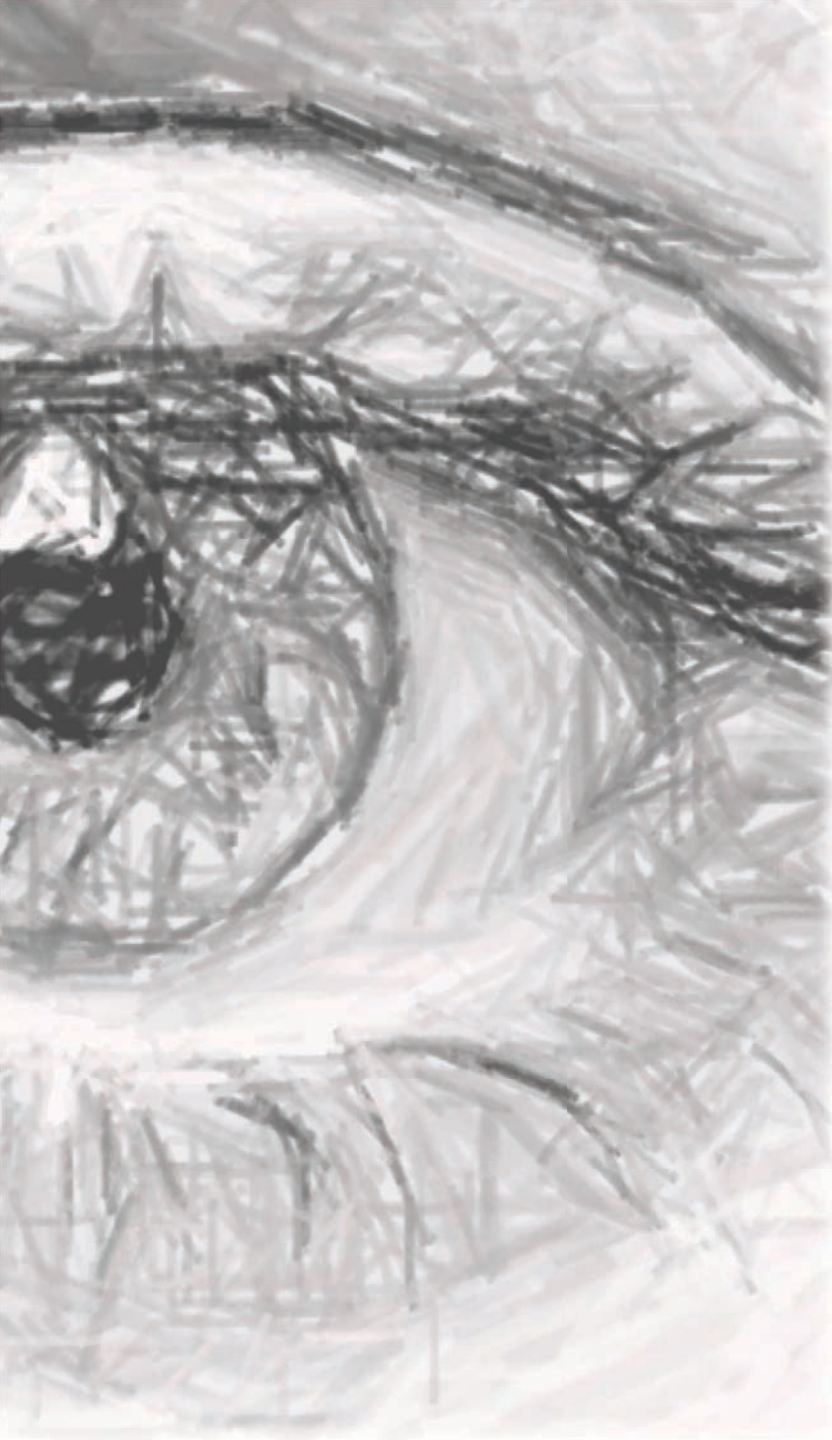




# VISUAL ACUITY

- Safety
- Wayfinding
- Transition Areas





# AGING

- Visual Acuity
- Falls
- Circadian Rhythm





# LIGHT AND MOOD

- Perception of a space
- Interaction
- Joy



**WHAT NEXT?**







# UNDERSTAND YOUR OCCUPANTS

- Age
- Activity
- Special Conditions



# WIELD YOUR POWER

- Maximize daylight exposure
- Optimize electric lighting
- Manage glare
- Minimize flicker
- Consider visual acuity
- Light for joy



# THANK YOU

- QUESTIONS?



This concludes The American Institute of Architects Continuing  
Education Systems Course

