

IMC 16

DUBLIN · IRELAND



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Mobility Conference**
'Transitions; moving on, moving out'
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ENVIRONMENTAL AND TASK ASSESSMENT

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OBJECTIVES

- The learner will gain knowledge to determine environmental and task characteristics for an individual with low vision.
- The learner will gain knowledge to determine the impact the environment and task has on an individual with low vision.
- The learner will gain knowledge about tools for gathering information from multi-disciplinary team members to assist with planning assessment strategies for an individual with low vision.
- The learner will understand ways to utilize the information gathered from the multi-disciplinary team to build an assessment plan.
- The learner will understand how to conduct and complete an Environmental and Task Assessment utilizing the support of other team members.
- The learner will be able to generate a report from findings and data collection.

ACTIVITY

- Break into groups of 2-4 (20 Minutes)
- Brainstorm and list the following:
 - What is an environmental and task assessment?
 - How do you think environmental and task assessments should be done?
 - Who performs these assessments?
 - Tools used?
- Share your ideas.

WHAT IS AN ENVIRONMENTAL ASSESSMENT?

- Systematically analyzing the environment in which a person with low vision will be functioning from a visual point of view.
- This includes both the general environment and analysis of the specific task (s) that the person with low vision will be doing in the environment.

WHY ANALYZE THE ENVIRONMENT?

- Get away from low vision.
- Importance of offering practical suggestions to individuals.
- Seeing the difference this makes in the overall visual functioning of individuals.

FACTORS FOR AN ENVIRONMENTAL ASSESSMENT

Two main factors:

- The demands of the environment on the individual.
- The individual's capabilities to solve and address these demands.

CHARACTERISTICS OF THE ENVIRONMENT

- VEAP- Visual Environmental Adaptation Problems.
- The purpose of the assessment will change the assessment approach.

CHARACTERISTICS OF THE ENVIRONMENT TO BE ASSESSED

Six characteristics of the environment

- Illumination
- Color
- Contrast
- Position and Angle of Viewing
- Surfaces
- Distance and Size
- Time

ILLUMINATION

- Amount
- Type of light
- Position of the light
- Adaptation
- Glare

ILLUMINATION

Amount

- Illuminance
 - Amount of light arriving on a surface-measured in footcandles (fc)
- Reflectance
 - Amount of light from task to eye-measured in foot lamberts (flb)
- Distance is the critical factor

INVERSE SQUARE LAW

- Moving light closer to the page increases illumination.
- As you decrease the distance by half, you square the increase in light.

INVERSE SQUARE LAW EXAMPLE

- 5 fc at 10 inches
- Move light to 5 inches
- This will give you 25 fc of illuminance

MAGNIFICATION

- Review of magnification- 4 Types
- Relative Distance Magnification
 - ex. microscopic lenses.
- Relative Size Magnification
 - ex. large print materials.
- Angular Magnification
 - ex. telescopes and hand held magnifiers.
- Projection Magnification
 - Ex. CCTV

TYPE OF LIGHT

- Natural
 - Direct sunlight
- Incandescent
 - Bright, has a heat factor, tends to be expensive
- Fluorescent
 - Wide beam, cooler, less expensive has a strobe effect in some cases
- Full Spectrum
 - Emulates natural light (marketing term)

POSITION OF LIGHT

- Distance is critical factor
- In front, behind, to side, above
- Changes during the day
- Ability to change position of light

LIGHT ADAPTATION

- Light adaptation
- Dark adaptation

GLARE

Discomfort Glare

- Caused by stray light

Veiling or Disability Glare- Caused by:

- Media problems (sources in the eye or environment)
- Small particles in air or on surface
- Highly reflective surfaces

COLOR

- Figure/ground relationships drive color perception
- Factors to consider
 - Visibility of target to background (figure/ground)
 - Complexity of background surface
 - Organization or clutter

CONTRAST

- Contrast is the perceived differences of adjacent edges
- Contrast Sensitivity (CS) testing basic concepts:
 - Acuity is a high contrast target
 - Most things in life are low contrast

POSITION AND ANGLE OF VIEWING

- Perpendicular angle of viewing to target will eliminate many problems

SURFACES

- Glossy
- Flat

ACUITY REVIEW

- 3 Types:
- Awareness Acuity
- Identification Acuity
- Preferred Viewing Distance

AWARENESS ACUITY

- The furthest possible distance at which the presence of any form is first detected.
- Example of excerpt from report:

Location: Outdoors

Lighting: Sunny

Jessica was asked to look as far away as possible and indicate when the presence of any form was detected. She identified the form of a person in the distance from approximately 400 feet.

IDENTIFICATION ACUITY

- The furthest possible distance at which a detected form is first correctly identified.
- Example of excerpt from report:
Jessica was able to identify the form she had seen previously as a “guy” from approximately 150 feet. She was unable to distinguish any features of this person.

PREFERRED VIEWING DISTANCE

- The most comfortable distance for viewing a detected form.
- Example of excerpt from report:
Jessica was able to identify this "guy" clearly from approximately 50 feet. She was able to describe clothing and facial expressions from this distance.

ACTIVITY- ACUITY

- Break into groups of 2-4 (25-30 Minutes)
 - Using simulators
 - In the environment within the conference facility (indoors and outdoors) complete the following:
 - Awareness Acuity
 - Identification Acuity
 - Preferred Viewing Distance
 - Complete write up within your group
- Share your ideas.

DISTANCE AND SIZE

- Clinical Acuity
 - Static Visual Acuity (SVA)
- Dynamic Acuity
 - Dynamic Visual Acuity (DVA)
- Factors to consider:
 - Size of target
 - Preferred viewing distance
 - Physical arrangement of environment
 - Safety

TIME

- Time: Frequency, Duration and Speed of presentation.
 - Required viewing duration to complete task
 - Speed and pattern of presentation
 - Movement of target

TASK ASSESSMENT

- Size
- Distance (near, intermediate & distance)
- Angle of viewing
- Figure/ground
- Contrast
- Illumination
- Color
- Field of view requirements
- Eye-hand coordination
- Speed/accuracy

STEPS FOR ASSESSMENT

- Review:
 - Ophthalmological/Optomeric/CLVE Information
 - FVA and LMA- update if necessary.
- Interviews and Observations
- Provide assessment
- Generate report

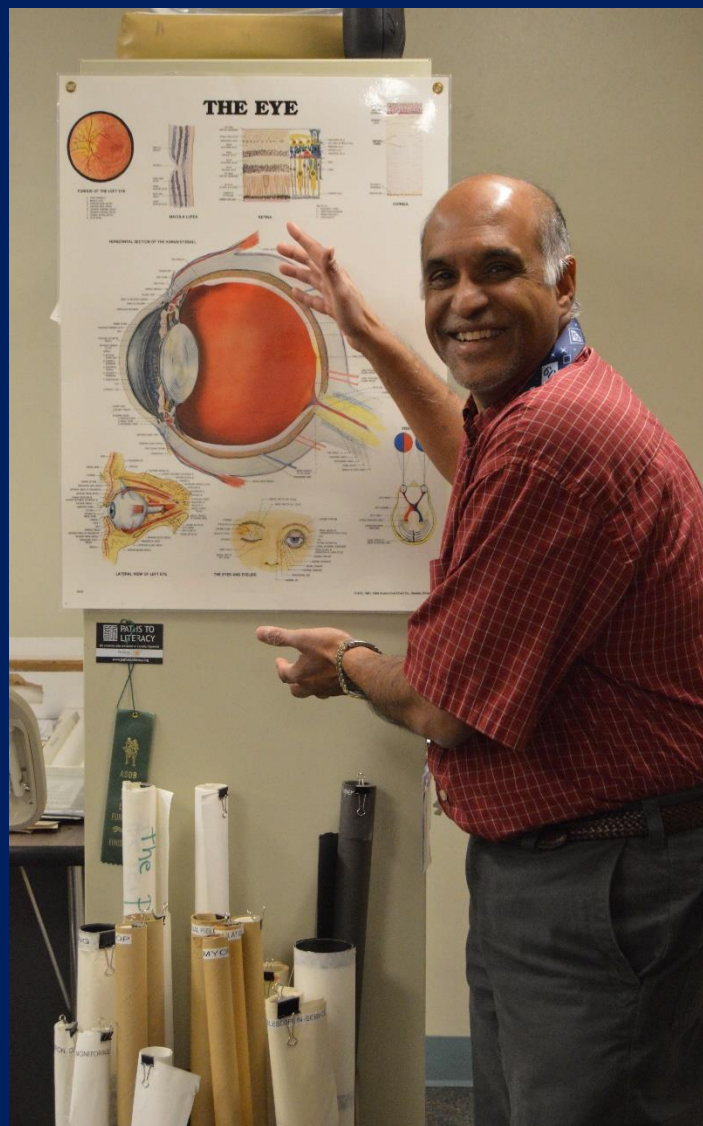
LOW VISION PROGRAM CONTACTS

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RESOURCES

- Adapted from lecture notes provided by Dr. Duane R. Geruschat
- Salus University
 - (formerly Pennsylvania College of Optometry).
- Phoenix, AZ
- November 3rd, 2001.

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Andrea Cook

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THANK YOU-QUESTIONS

