

CVI and O&M

General relationship

CVI will impact a student's ability to be oriented in space and to move safely with independence

Dorsal stream of visual functioning (the "where" system) is associated with spatial awareness, including movement, form, color, light

Dorsal stream processing unconsciously structures movement through an environment

Color

Color, acting as a visual anchor, can be used to highlight landmarks but can also lead attention and movement away from optimal paths

Use color to highlight important information

Use color consistently for particular kinds of signage, routes, or landmarks

Be aware of the potential for bright colors to distract or mislead a traveler

Be aware that color in the environment not under instructor or traveler control can vary and so introduce complexity

Movement

Like color, movement can draw attention to something in the environment (draws on a basic human response mechanism)

Traveling through an environment, there is lots of potential for movement and so increased potential for distraction (distraction can lead to reduced safety)

Self movement can improve visual perception

Vehicles will be better detected when they are moving

Important landmarks can be highlighted with moving components like flags or banners

Other people can be followed to help maintain a straight line of travel or to follow a route

What moving object to follow or go to is important as there will be many moving objects that a person should not approach

Note that following a person, crowd, or object might lead to not noticing a separate landmark

Light

Like color and movement, light can draw the attention of a person with CVI

Can be used to highlight a landmark (e.g., lighted exit sign, lighted crosswalk sign)

Flashlight can be used to bring attention and focus to a map or sign being read

The strong draw of light might inadvertently lead a person's movement toward a light

Too much reliance on walking toward or following lights (like overhead lights in a hallway) might lead to incorrect route travel

Visual latency

TVIs are often more aware of the impact of visual latency than O&M Specialists. Visual latency can be mistaken for inattention. Provide adequate wait time for processing of information.

Acting on a walk signal at an intersection might be delayed, depending on traffic streams, this could lead to loss of crossing opportunities

Brief visual stimuli, even if colorful and moving, might not be present long enough to be perceived

Similarly, brief stimuli like facial expressions might be missed

Judgment of spatial and temporal relationships will be impaired, which might lead to more physical contact with moving objects like swings, other people, and balls

Visual fields

People with CVI often report lower field deficits, which can impact safety when moving through an environment

Use of a long cane will help detect drop offs and low obstacles (tripping hazards)

O&M Specialist needs to try to map perceptual field deficits in order to determine what sort of environmental information might be missed (e.g., drop offs for lower fields, approaching vehicles for left or right fields, overhangs for upper fields)

Visual complexity

Unlike the dorsal "where" stream, visual complexity is related more to the ventral "what" stream

There might be difficulty in separating particular aspects of a visually complex scene (other visual elements continually interfere with concentration on the target)

Other sensory input will also have the effect of distracting visual focus

Landmarks need to be visually distinct but also be in a non-complex surrounding

Travel in crowded areas or at busy intersections may lead to reduced visual perception

Distance viewing

The farther away things are, the more likely they are to visually blend into the background or each other

Approaching vehicles may not be discriminated from the background until much closer than the O&M Specialist would expect

Noticing signs, lights, people, etc. will be inconsistent

It might be difficult for a traveler with CVI to visually scan an environment to determine alternate routes or to problem solve route issues

Visual novelty

People with CVI will demonstrate increased visual perception of things they are familiar with so novel items might be missed

Extended pre teaching of an environment is important if the person will be moving through that environment a lot

Changes in an environment will have larger impacts on a person with CVI as they will not be as able to process the changes visually

Changes in a familiar environment such as increased number of people or vehicles, different lighting, or changes in color or decoration can make the environment unfamiliar

Visually directed reach

Mismatch between looking and reaching can lead to problems in reaching for objects but also in exploring the environment with the long cane