

The Guide

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Vision impairment is generally thought of as damage to, or deterioration of, the eyes; but sometimes vision loss occurs due to neurological damage. People who have experienced a stroke, tumour or traumatic brain injury may have neurological vision impairment, or NVI.

The commonest type of NVI is Homonymous Hemianopia, where the same visual field is affected in both eyes. Seen in approximately 8% of all strokes¹, Homonymous Hemianopia usually results from damage to the visual cortex of the occipital lobe. Up to half of all people with this form of NVI notice a spontaneous visual field improvement within 3-4 months².

Visual field loss can greatly impair a person's daily living skills, reading, and ability to get around their community safely. There is a greater risk of bumping into objects and people, as well as an increased likelihood of falls due to tripping over unseen obstacles.

Guide Dogs NSW/ACT has a number of orientation and mobility instructors who are specially trained to work with NVI clients. Training programs include: scanning while sitting; reading exercises; scanning while moving;

travelling in busier environments (such as shopping centres); and crossing the road safely.

The objective of our NVI programs is to teach people how to compensate for their vision loss, and to restore their confidence in getting around independently. We also educate clients and their family or carers about the implications of their vision loss.

Training is provided wherever it is needed - in a rehabilitation ward or a person's home - and we are happy to work with other rehabilitation professionals when cognitive, physical and/or behavioural challenges are present.

For NVI clients, an early referral to Guide Dogs is recommended to help develop safe and consistent scanning. All our orientation and mobility services, including NVI programs, are provided locally and free of charge.

1. Gihota JS, Mitchell P, Healey PR, et al. Homonymous visual field defects and stroke in older population. *Stroke* 2002;33: 2417-20.
2. Zhang X, Kedar S, Lynn MJ, et al. Natural history of homonymous hemianopia. *Neurology* 2006; 66: 901- 5.



» Children with Neurological Vision Impairment

Neurological Vision Impairment (NVI), also referred to as Cortical Vision Impairment (CVI) or Cortical Blindness, is the leading cause of vision impairment in children in Western countries¹. Guide Dogs NSW/ACT provides specialised orientation and mobility training for children with NVI, helping them to make the most of their remaining vision and to start being as independent as possible. By encouraging a child to use his or her vision, it can often motivate them to start moving around.

Children with NVI often have profound neurological impairment which may also include physical and cognitive disabilities. Each program is tailored to meet the needs of the child with input from the child's main care-givers and other professionals. The goal may be as simple as reaching out for an object. An older child may have a more complex goal, such as catching a bus on his or her own.



A child using his remaining vision to solve a puzzle

1. Good, W.V. The Spectrum of Vision Impairment caused by Pediatric Neurological Injury, www.ncbi.nlm.nih.gov.

Case Study

Following a traumatic brain injury, June could not get around on her own and was taken everywhere that she needed to go. By working with her primary carer, her teacher and her itinerant vision teacher, June was taught to stand. She now walks, with limited adult supervision, using her residual vision and a cane.

» Assessing Adults



Mobility assessments not only determine whether a person can avoid obstacles, but also take into account memory, visual processing speed, problem solving abilities, and a host of other skills that are checked both while stationary and moving.

Another important factor to consider when working with adults with NVI is the use of previously learned skills. For example, a group of five World War II pilots were found to still have the muscle memory developed from scanning the sky as they flew. In each case they were able to transfer this skill to scanning the path in front of them.

Using previously learned skills to scan the road before crossing

» Instructor Profile Ying-Wah Wan

Before emigrating to Australia I trained in Malaysia and Singapore on educating children with vision impairment. It was quite a culture shock when I started working at Guide Dogs NSW/ACT because there were no classrooms to go to and no more long school holidays! Since then I have clocked up 16 years of work as an Orientation and Mobility Instructor and still love the job.

A good part of my work involves visiting clients who have acquired visual field deficit and/ or neurological vision impairment resulting from a stroke or a brain injury. I visit people in hospital to assess the extent of their visual field deficit, as well as at their homes afterwards.

Working with people with disabilities provides me with a great deal of satisfaction, as I learn a lot from these challenges in my work as an Orientation and Mobility Instructor. I also enjoy meeting people from different cultures and with diverse needs.

I hope to reach out to as many NVI patients as possible because this unique vision impairment is not widely understood.



» Neurological Vision Impairment Programs



Scanning the road at a pedestrian crossing

There are many different areas of the brain that interpret what our eyes see. When these areas are damaged, the eyes may still function but the message can be misinterpreted or unable to get through to the brain. Neither glasses nor surgery will restore sight for a person with a neurological vision impairment (NVI).

An added complication is that people with brain injuries are not always aware that their vision is impaired. Because their brain is damaged, it may not inform them that they can't see properly. This can put the person in potentially dangerous situations. Warning signs can include:

- Being confused and easily disorientated, even in familiar places.
- Having difficulties when reading.
- Becoming overwhelmed or anxious in crowded or busy places.
- Bumping into people or things.
- Crossing roads unsafely.
- Lacking confidence when using public transport.
- Experiencing double or blurry vision.

Guide Dogs NSW/ACT has developed specialised orientation and mobility programs for people whose vision has been affected by conditions such as stroke, tumour or brain injury. Each NVI program teaches a person how to compensate for their vision loss and restore his or her confidence in getting around independently. Part of this training includes scanning strategies or, if required, the use of a mobility aid.

Like all programs provided by Guide Dogs NSW/ACT, our NVI services are free of charge and are designed according to individual needs. We visit the person wherever they are; this may be in hospital, a rehabilitation ward or at home.

NVI Training Programs

- A person is assessed to find out if they are able to move around their environment safely and can remain orientated by identifying important landmarks or clues, such as street signs, house numbers or shop names.
- Functional vision is observed both in stationary and dynamic environments as a part of the assessment.
- During the training, scanning exercises are taught to encourage head turning to the affected side.
- Training ranges from walking safely around the home, through to using public transport and travelling in a busy city environment.
- People with a visual field deficit do not always require a mobility aid as they are taught to compensate for their vision impairment.
- Support is provided until the person feels confident moving around independently.
- Follow-up visits are offered to ensure scanning strategies remain effective and safe.
- We work with other rehabilitation professionals, particularly when cognitive, physical and/or behavioural challenges are present.



Using skills learned in NVI training programs to find out when the next bus will arrive

» Regional Office Profile Orange

Since January 1993, the Guide Dogs NSW/ACT office in Orange has provided its services to the western regions of New South Wales. With just one instructor for many years, today the region has five instructors (including one Guide Dog instructor) and one fantastic administration assistant. 2011 will see the appointment of our sixth Orientation & Mobility (O&M) Instructor.

The additional numbers mean that our Guide Dogs instructors can now deliver comprehensive services to the Central Western and Far Western regions of New South Wales. This is the largest region being serviced in NSW, and ranges from Lithgow to Broken Hill and Lightning Ridge to Condobolin. Guide Dogs O&M Instructors travel vast distances every week to provide quality services to rural and isolated parts of the state.

We deliver both domiciliary and residential based training, and run regular workshops that range from long cane training to tactile mapping. Recently, we ran our first family workshop, which was very successful. Children attended with their parents and siblings, and had the opportunity to hear from and speak with a physiotherapist and psychologist, as well as develop relationships with other families.

In addition to running these workshops, our office also produces tactile maps for clients and other Guide Dogs offices across the state. One of our more complicated maps was created for the 2010 Australasian Orientation and Mobility conference, hosted by Guide Dogs NSW/ACT in Sydney last November.

The Orange office works closely with the Outback Eye Team, which runs regular clinics in a number of isolated areas across Western NSW. In 2010, instructors from Guide Dogs worked alongside an eye team in Broken Hill, and have since initiated monthly visits to this area.

The team has also developed positive relationships with Itinerant Support Teachers (Low Vision), aged care services, community health centres, and other health professionals in the western regions, and works tirelessly to educate the community and general public about the free and valuable services that Guide Dogs NSW/ACT offers.



Gulliver the Giant Guide Dog with the Orange staff outside their office

» Contact Details

Guide Dogs NSW/ACT provides all of its services, including mobility aids, free of charge.

To refer someone to us, with their permission, please phone your nearest Client Services office on:

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|---------------------|----------------|----------------|----------------|
| Sydney East Region: | (02) 9412 9300 | Lismore: | (02) 6621 8475 |
| Sydney West Region: | (02) 9891 4914 | Newcastle: | (02) 4925 3066 |
| Low Vision Clinic: | (02) 9412 9342 | Orange: | (02) 6362 6625 |
| Guide Dogs Centre: | (02) 4579 7555 | Tamworth: | (02) 6761 3152 |
| ACT: | (02) 6285 2988 | Wagga Wagga: | (02) 6925 3559 |
| Albury: | (02) 6041 5201 | Coffs Harbour: | (02) 6652 7424 |
| Wollongong: | (02) 4225 9247 | | |

Or contact us at www.guidedogs.com.au/contact-us

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