Diabetic Retinopathy

School of Special Educational Needs
Sensory

Description

- Diabetic retinopathy is a condition causing damaging changes to the retina, impacting its functions through the growth of abnormal blood vessels and fibrous tissues.
- It occurs as a result of diabetes and prolonged high blood sugar. The retina (light sensitive nerve tissue) has tiny blood vessels that are damaged, swell, leak and scar when the body is unable to process sugar.
- There are four stages of retinopathy. Early changes that occur may slowly improve with better control of the diabetes, but some changes can be permanent such as cataracts or scarring.
- Diabetic retinopathy is one of the most common causes of childhood vision impairment and blindness.

Implications

- Diabetic retinopathy usually affects both eyes equally.
- The condition causes a reduction or fluctuation of visual acuity (clarity or sharpness of vision), blurring, floaters, visual field loss and photophobia (sensitivity to light). It may also cause diplopia (double vision) and reduced colour vision (colour deficiency).
- Loss of accommodation is likely; the eye may have difficulty obtaining and maintaining focus.
- With associated scarring, diabetic retinopathy can lead to retinal detachment and distortion of central vision, glaucoma and cataracts.
- Distorted vision can make it difficult to read standard print, view digital material or see detail.
- Individuals may need to develop eccentric viewing techniques (looking off-centre or beyond the object of interest to view with their side vision).
- Frequent eye examinations can detect changes and help prevent vision loss with early treatment. Prevention is critical as despite treatment, blindness may result.

Accessing the curriculum

- Provide seating at the front of the class to ensure the student has the best possible view of the teaching focus.
- Reduce classroom and environmental glare. Avoid whiteboards, reflective white paper (buff may provide better access), and instruction next to windows. Additionally, control overhead lighting to increase comfort and reduce visual fatigue.
- Consider enlarging print and provision of dark lined paper. Ensure strong contrast.
- Use additional verbal descriptions to support instruction and understanding.
- Allow the student extra time to process visual information, to use eccentric viewing techniques, and to reduce visual fatigue. When fatigue is present, offer eye rest time.
- Increased task illumination may be helpful when visual function is to be maintained.
- Magnification aids may be of assistance.
- Modify physical activities and provide detailed verbal instructions of all actions, skills and game rules (where necessary).

Click to see an Interactive Eye Diagram (web link)

As this document contains generic information, please consult with the Vision Education Program in regard to individual educational needs.

References

Cassin, B., & Rubin, M. L. (2012). Diabetic retinopathy. In *Dictionary of eye terminology* (6th ed.). Triad Communications, Inc.

Erin, J. N., & Topor, I. (2010). Instruction in visual techniques for students with low vision, including those with multiple disabilities. In A. L. Corn & J. N. Erin (Eds.), *Foundations of low vision: Clinical and functional perspectives* (2nd ed., pp. 398-441). AFB Press, American Foundation for the Blind, New York.

Ferrell, K. A. (2010). Visual development. In A.L. Corn & J. N. Erin (Eds.), *Foundations of low vision: Clinical and functional perspectives* (2nd ed., pp. 229-338). AFB Press, American Foundation for the Blind, New York.

Holbrook, M. C., Koenig, A. J., & Rex, E. J. (2010). Instruction of literacy skills to children and youths with low vision. In A. L. Corn & J. N. Erin (Eds.), *Foundations of low vision: Clinical and functional perspectives* (2nd ed., pp. 484-526). AFB Press, American Foundation for the Blind, New York.

Lions Eye Institute. (2018). *Eye health information. Interactive eye diagram*. https://www.lei.org.au/services/eye-health-information/eye-diagram/

Schwartz, T. L. (2010). Causes of visual impairment: Pathology and its implications. In A. L. Corn & J. N. Erin (Eds.), *Foundations of low vision: Clinical and functional perspectives* (2nd ed., pp. 137-191). AFB Press, American Foundation for the Blind, New York.

Vision Australia. (n.d.). *Diabetic retinopathy.* https://www.visionaustralia.org/information/eye-conditions/diabetic-retinopathy

For further information

Phone: 08 9402 6409
Email: sensory@education.wa.edu.au
Web: www.ssens.wa.edu.au