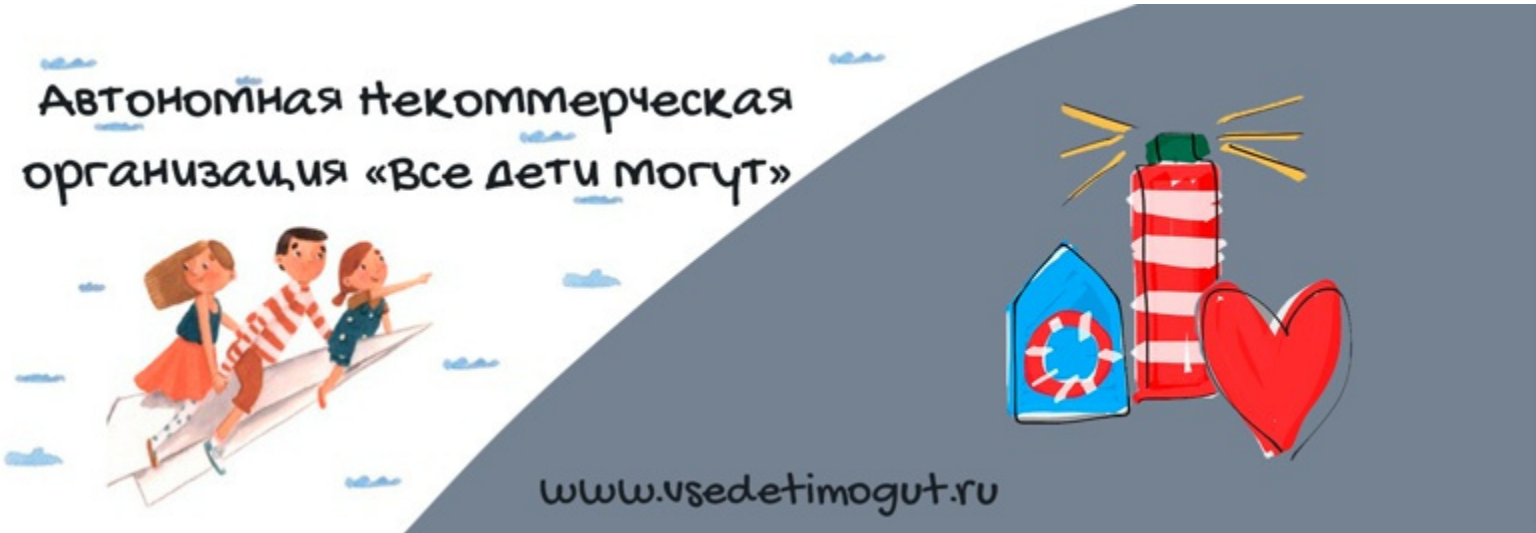
Информация об уходе за глазами и зрении для людей с ограниченными возможностями обучения



Fit it Right, See it Bright

Information on eye care and vision for people with learning disabilities

SeeAbility launched the eye **2** eye campaign to transform eye care and vision for people with learning disabilities. Look Up was launched as part of the eye **2** eye campaign.

Look Up will:

- raise awareness of the prevalence of sight problems amongst people with learning disabilities.
- raise awareness of the high level of under-detection of sight problems amongst people who have learning disabilities
- help improve and increase access to regular, accessible and effective eye care for adults with learning disabilities.
- enhance the quality of life for people with learning disabilities when a sight problem has been identified.
- help, advise and support carers, social care and health professionals, and eye care professional to provide improved services for people with learning disabilities

Stepping Stones DS

For more information about our activities and support please visit our website.

www.steppingstonesds.co.uk

Vision

Supporting children with Down syndrome

Vision in children with Down syndrome

Children with Down syndrome often have particular difficulties with language, so educationalists describe the children as good 'visual learners' and recommend the use of visual aids in the classroom. It is therefore especially important that the children's vision is as good as it possibly can be and that the children are given every opportunity to access visual stimuli. Unfortunately, children with Down syndrome are at much greater risk of eye and vision disorders than are typically developing children. They therefore need regular eye examinations, are more likely to need glasses than typical children, and may need compensation in the classroom / learning environment for visual deficits. Classroom and advisory teachers as well as parents need to be aware of the visual difficulties that the children may experience.

Refractive Errors

Long-sight, short-sight and astigmatism are much more common in children with Down syndrome than in typical children, and many more will need to wear glasses. Ordinary children are often long or short-sighted in early infancy, but grow out of these errors over the first few years of life. Children with Down syndrome start out with a similar range of errors as do ordinary children, but are much less likely to outgrow the errors and much more likely to become more long or short-sighted.

Nystagmus

A small percentage of children with Down syndrome have Nystagmus. This is a condition in which the eyes make small, involuntary, jerky movements. Often these movements are more noticeable when the child is looking sideways. the movements are considerably

Wearing Glasses

Cleaning Your Glasses

Your spectacles should be cleaned regularly.
If in doubt the good old fashioned slow but steady breath onto the lens followed swiftly by a gentle massage with a cotton cloth still works well.

- Use a soft, non-fibrous cloth to clean the lenses.
- Ideally use only the correct cleaning solution for your lens.
- Gently, rub the lenses in a circular motion to wipe the cleaning solution across the surface of the lens.
- Keep gently wiping until the solution has evaporated.
- If there are nose pads on your lenses, clean these carefully with cotton bud wetted in lens cleaning solution for very stubborn dirt and debris.

Things to try and avoid when handling your glasses

- Do not touch the lenses with your fingers.
- Do not use polishes on the lenses, this could scratch them.
- If you're using a dry cloth, do not rub or press too hard on the lenses.
- Avoid using tissues or paper towels to clean the lenses. The fibres will be left on the lenses and can scratch the lenses.
- Any screws on the frames should be checked regularly and tightened before cleaning.
- Do not sleep with the glasses on, this can bend and deform the frame.

We would like thank J. Margaret Woodhouse and the team at The School of Optometry & Vision Sciences, Cardiff University, Cardiff for allow us to reproduce the information included in this booklet.

Fitting

People with Down syndrome sometimes have problems finding glasses that fit well. In general, a person with Down syndrome has a smaller nose and a shorter distance from ears to face and so glasses have a tendency to slip down. This is not only irritating, but means that he or she isn't looking through the correct part of the lens.

It is almost always possible (although time-consuming) for an optometrist/optician to adjust a frame, replace pads, shorten sides etc so that glasses fit properly. The appearance and fit of a spectacle frame is the most important factor in wearing glasses. Your optician should try a wide range and selection of frames in a variety of sizes and be prepared to make modifications and adjustments for each individual:

- Small 'button' pads or strap bridges can help the fit with small noses.
- Curl sides or sports bands to keep frames in place are rarely needed, and often make a person more reluctant to wear glasses.
- If a person wears hearing aids, straight sides that don't interfere with aids are more suitable.

The glasses wearer will not benefit from a correction unless the frames are comfortable and the lenses are positioned correctly, so be prepared to spend time.

Sometimes there is a position of gaze where the movements are considerably reduced. If this is the case, the child might adopt a compensatory head posture which allows the eyes to be in a position in which the Nystagmus movements are minimised. If this happens the child should not be discouraged from adopting the head posture as this is likely to be the position where the vision is at its best. The vision is often better for near than distance. Children with Nystagmus often prefer to hold books very close as this improves their vision and they should be allowed to do this.

Squint
Children with Down syndrome are at much greater risk of developing a squint (eye-turn) than are typical children. A child with a squint is likely to have a poorer level of binocular vision especially depth perception. Tasks requiring fine depth discrimination, such as threading beads, will be more difficult.

Accommodation (focusing at near)
Children's interests are mostly close at hand, and most of children's learning takes place at near. And it is at near that we find the greatest differences between vision in children with Down syndrome and typical children.
Usually, children focus very easily and very accurately on near targets and it is only as we approach middle age that we expect to experience difficulty in focusing at near. We find, however, that most (over 70%) children with Down syndrome focus very poorly at near – they tend to under-accommodate by quite a large amount. This is consistent for any individual child, and persists even when the children wear their glasses to correct long sight. This means that near work, especially in school, must be more difficult for the children because it is out of focus.

Visual Acuity (detail vision)
Detail vision is usually measured in adults with the familiar letter chart. For children (and people of any age with learning disabilities) there are lots of alternatives that don't need reading skills. These include picture naming, matching or signing and the preferential looking tests that only require the child to look towards a picture or target. It is, therefore, possible to measure how well someone can see whatever the age and ability.

Additional problems
Blepharitis is an inflammation of the eye lash follicles that causes debris to collect along the margins of the eyelids and can cause irritation of the eyes. Children with Down syndrome are particularly prone to this condition, which although not usually sight threatening, can be a source of discomfort and itching, and can result in scarring of the follicles and in-growing eyelashes. Blepharitis responds very well to simple treatment and parents should be encouraged to take their child to a local optometrist for advice.

Detail

Even if a child with Down syndrome is wearing glasses, or has no eye problems, he/she will not see fine detail or small contrast changes as well as other children. Activities that require good detail vision, like reading, will be affected most. But, more general activities, like outdoor play will not be affected as much. The pictures above demonstrate what a child with Down syndrome is likely to be seeing compared to a child without Down syndrome Reading materials, for example, do NOT look the same to a child with Down syndrome as they do to his/her classroom peers. The material does not appear to have the same level of detail. Enlarging the print may help the child to access print more easily,

Are your child's glasses fitting properly? Are the glasses too tight against the side of the head or behind the ears? Are they too loose and keep slipping down your child's nose? A child will not want to wear glasses that feel uncomfortable. Glasses can be adjusted to fit your child properly and you should insist that the Optometrist/ Optician takes time to do this when you collect the glasses. If the glasses become bent or stop fitting properly get them adjusted again. Your Optician will be happy to do this for you.

If your child is reluctant to wear his/her glasses at first this may be because they are adjusting to the prescription. When we make the world clearer with glasses, we may think this means 'better' – your child may just think 'different'. This difference can sometimes take a little while to get used to.

Some children do not like objects on or near their face. Others do not like change. Once your child learns that the glasses will not harm them and gets used to the glasses they will be happy to wear them.

Wearing Glasses

Choose an activity that your child enjoys doing with you, and one for which the glasses will help – discuss this with your Optometrist. It may be reading a story, or watching a favourite video, for example. Make it a 'special time' together - this way your child learns to associate wearing glasses with a pleasant experience. Put the glasses on at the start of the activity (don't forget to put yours on if you need them too!) and make the activity short at first. If your child takes the glasses off, simply stop the activity. Persevere, increasing the length of time and/or introducing a second 'spectacle-wearing' activity. Don't worry if it takes a long time (weeks or even months) before your child is happy to keep his/her glasses on.

Most importantly, do NOT turn it into a battle – your child will win! Children learn very quickly that throwing glasses across the room gets more attention than almost anything else!

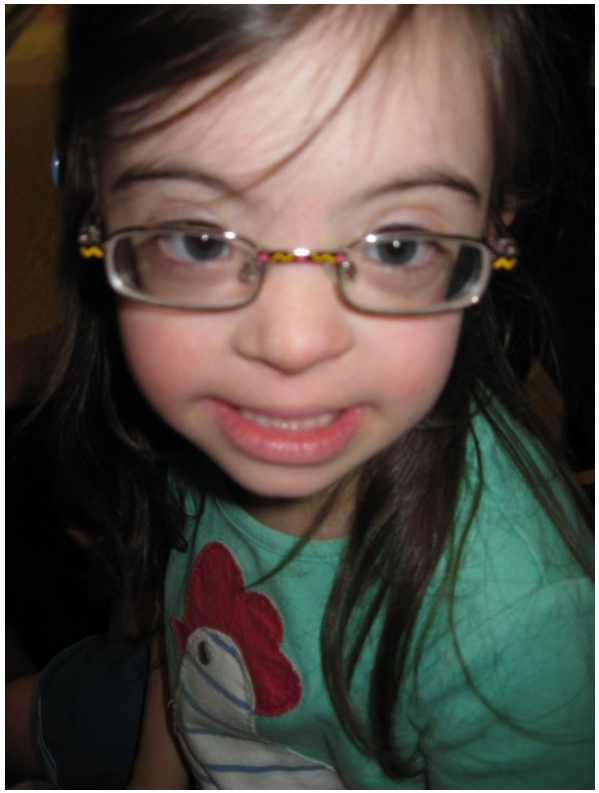
Avoid curl sides (except for tiny babies) and straps to keep glasses on. Usually they just give your child something to fight against, and make matters worse!

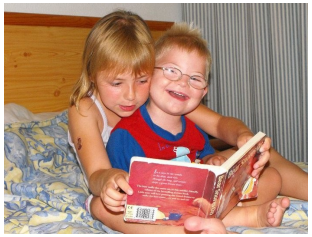
If your child won't wear his/her glasses at home then perhaps he/she will wear them at school. Chat to the class teacher and ask for help in trying to persuade your child to wear the glasses.
There can be several reasons for a child's reluctance, and it is important that you consider each one.

We have also know that children with Down syndrome are poorer at discriminating low contrasts and at detecting when a scene is out of focus.

All of this may indicate that the children have a poorer ability in all visual discriminations than typical children. Visual tasks are therefore more difficult for children with Down syndrome for reasons over and above any learning disability that they have.

For this reason, we recommend that children with Down syndrome use pen rather than pencil, and write on lines that are readily visible. The teacher/assistant should go over faint lines with a pen. It also helps if children are registered with their local education authority's visual impairment support service. A support teacher can advise the classroom teacher on whether materials are adequate.





Glasses and Testing

Children with Down syndrome have as much right as other children to expect glasses that fit properly and comfortably without slipping.

Children with Down syndrome sometimes have problems finding glasses that fit well. In general, the children have smaller noses and a shorter distance from ears to face than typical children, and so glasses have a tendency to slip down. This is not only irritating for the child, but means that he or she isn't looking through the correct part of the lens. It is almost always possible (although time-consuming) for an optometrist/optician to adjust a frame, replace pads, shorten sides etc so that glasses fit properly.

It is important (as for any child in the classroom) that the teacher understands when a child will need his/her glasses, and what level of vision he/she will have both with and without glasses. Long-sight of low to moderate degree can be overcome in typical children by accommodation (active focusing) and not all children who are long-sighted need glasses. However, children with Down syndrome, because they have difficulty in focusing will be much more dependent on their glasses for clear comfortable vision than will typical children. Children who are short-sighted, on the other hand, may be better off without glasses for close work.

Generally, the same techniques as are used with typically developing children are equally applicable to children with Down syndrome. Because of the learning disability associated with Down syndrome, techniques designed for a younger age may be more suitable. But all children with Down syndrome are individuals and many are very able, so avoid automatic assumptions about which tests to employ.

As for all children, have a wide variety of tests available, and adopt a flexible approach to avoid boredom.

Q: What should be done if a child with Down syndrome does not wear their bifocals or fails to use the near addition?
A: If a child will not wear or use their bifocals correctly, it may be due to poor fit, but also could indicate improved accuracy of accommodation. At each follow up visit, accommodation should be measured through both the near addition and distance portion of the bifocal lens. Increased accuracy of accommodation through the distance lens has been noted during the study in several children wearing bifocals. In each of these cases, the next step will be to take the child out of bifocals and return to single vision spectacles. We do not yet know whether children who show this unaided (not using near addition) improvement can sustain it, so continued monitoring of accommodation will be essential.

Q: Who should be informed when bifocals are prescribed?
A: Obviously parents should be fully informed of the decision to prescribe bifocals. It is also essential that the school and the child's teacher (and for adults any instructors or supervisors) understand the reasons for and the correct wear of bifocals. An explanatory leaflet or letter should be sent to the school (or day centre). The child's GP, Paediatrician and all other professionals involved in the child's care should also be informed, so that everyone becomes aware of the difficulties that children and adults with Down syndrome have in accommodating for near, and the remedy that is being provided.

Q: What near segment fitting height should be used?
A: *Straight-topped bifocals and a near segment fitting height of at, or just below pupil centre* is recommended for all children with Down syndrome. As for all children, a comfortable and stable frame is essential. A high-fitting seg is likely to be suitable for an adult with Down's syndrome as well, but the precise positioning will depend on the sort of tasks to be undertaken.

Q: At what age should bifocals be prescribed?
A: Our study involved school-age children, but there is no reason to deny bifocals to younger children. Our previous studies have shown that children with Down syndrome rarely emmetropise (outgrow infantile refractive errors) in the way that typically-developing children do. We therefore recommend that refractive errors, especially hypermetropia, are corrected at an earlier age than for ordinary children, once it becomes clear that the error is not decreasing. We recommend prescribing for the distance error first, with single vision lenses. Follow-up checks will then allow an assessment of accommodation with the correction, and if accommodation is consistently poor, bifocals can be considered.

Q: How often should a child with Down syndrome be reviewed once bifocals have been prescribed?
A: We recommend follow up once bifocal wear commences, at: 1 month, 3 months, then 6 month intervals if bifocal wear continues in a straight forward manner (more frequent review may be needed if complications/concerns arise). At each review, the segment height should be checked and adjusted if necessary.

Q: When should children with Down syndrome wear their bifocals?
A: We recommend that bifocals be worn at first, in school time only, and during near activities if the child is not yet at school. Separate single vision lenses should therefore be available. Once it is clear that the child is comfortable in their bifocals, can move about in them with no problems and is using the near addition correctly, then full time wear can begin. For adults, appropriate near activities can be identified so that the adult gets used to the bifocals before wearing them full -time.

Many children with Down syndrome find it disturbing to 'fail' and are, therefore reluctant to try when tasks become difficult. When doing a visual acuity test, for example, a child may begin enthusiastically but get distracted and lose interest when the smaller targets are presented. You will get the best out of a child with Down syndrome if you avoid reinforcing 'failure'.

Try interspersing difficult targets with easy ones, give lots of praise and encouragement, and always end the procedure with a success.

Bi-focals

The following information about Bi-focals was collated following a longitudinal study by Ruth Stewart and Maggie Woodhouse, Optometry & Vision Sciences, Cardiff University

The majority (76%) of children with Down syndrome under-accommodate at near, as assessed by objective testing.
Our research has shown that these children gain optical benefit from bifocal spectacles, i.e. improved near focusing.

Q: How can accommodation be measured objectively?
A: Using the technique of dynamic retinoscopy.

Q: What is the procedure for dynamic retinoscopy?
A: 1) place an interesting near target at the child's habitual working distance and the retinoscope alongside
2) attract and maintain the child's attention on the target
3) using a retinoscope, assess the accuracy of the accommodation response by observing the retinoscope reflex. A 'neutral' reflex will be seen if the child is focusing accurately on the target. A 'with' movement will be seen if the child is focusing behind the target, i.e. has reduced accommodation - the retinoscopist must therefore move away from the target to find 'neutral'. It is normal for some children to show a small error (under-accommodation or 'lag') of accommodation; up to 0.75D is acceptable. The lag is calculated from the difference (in dioptres) between the distance of the target from the child and the distance at which the 'neutral' point is found. For example, with a target distance of 25cm from the child (4D stimulus demand) and a neutral reflex at 33cm from the child (3D response), the lag of accommodation is 1D.
An alternative 'screening' technique is to place the retinoscope at 0.75D behind the target and note the movement. If the movement is neutral or against, the child is accurately accommodating; if the movement is with the child is under-accommodating.

Q: When should bifocals be prescribed for children with Down syndrome?
A: When the child consistently under-accommodates to near targets (on more than one occasion) in spite of full correction for a distance refractive error.

Q: What power of near addition should be prescribed for children with Down syndrome who under-accommodate?
A: A +2.50D near addition was used for the children in our study, regardless of the amount by which they under-accommodated at the outset. We don't yet know whether other powers are as successful. We are confident in recommending +2.50 additions for children, who usually have a short working distance. A higher add might be appropriate for children with especially poor vision, or high myopes who are used to very close working distances. Some practitioners choose the add that brings the accommodative lag to within the normal range of 0.75D at the habitual working distance – this technique might be appropriate for an adult with Down syndrome, since the add can then be adapted for the tasks to be undertaken.