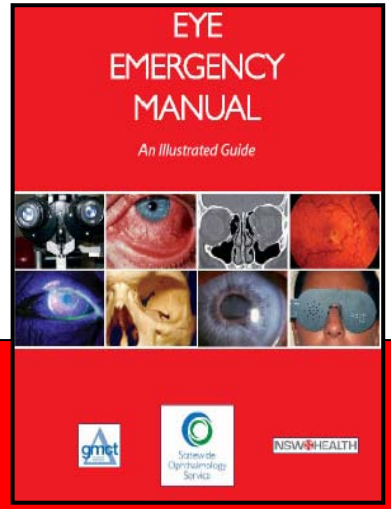
Visual Acuity



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Statewide Ophthalmology Service

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NSW HEALTH

Modules originally designed for emergency nurses as a component of the Eye Emergency Manual Project.

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Aims and Objectives

- Understand the principles behind vision testing

- Perform an accurate visual acuity

Definition

- Visual acuity is a measurement of central vision only
- Assessment of total visual system from cornea to occipital cortex

Visual acuity can be tested for both distance and near vision. Distance visual acuity is the most common test. This presentation deals only with distance vision testing.

Normal Vision 6/6

Normal vision relies on the following:

- Both eyes in alignment (extraocular muscles functioning)
- Clear cornea
- Clear lens of the eye
- Clear ocular media (aqueous and vitreous)
- Intact retina, optic nerve, visual pathway

Patient Requirements

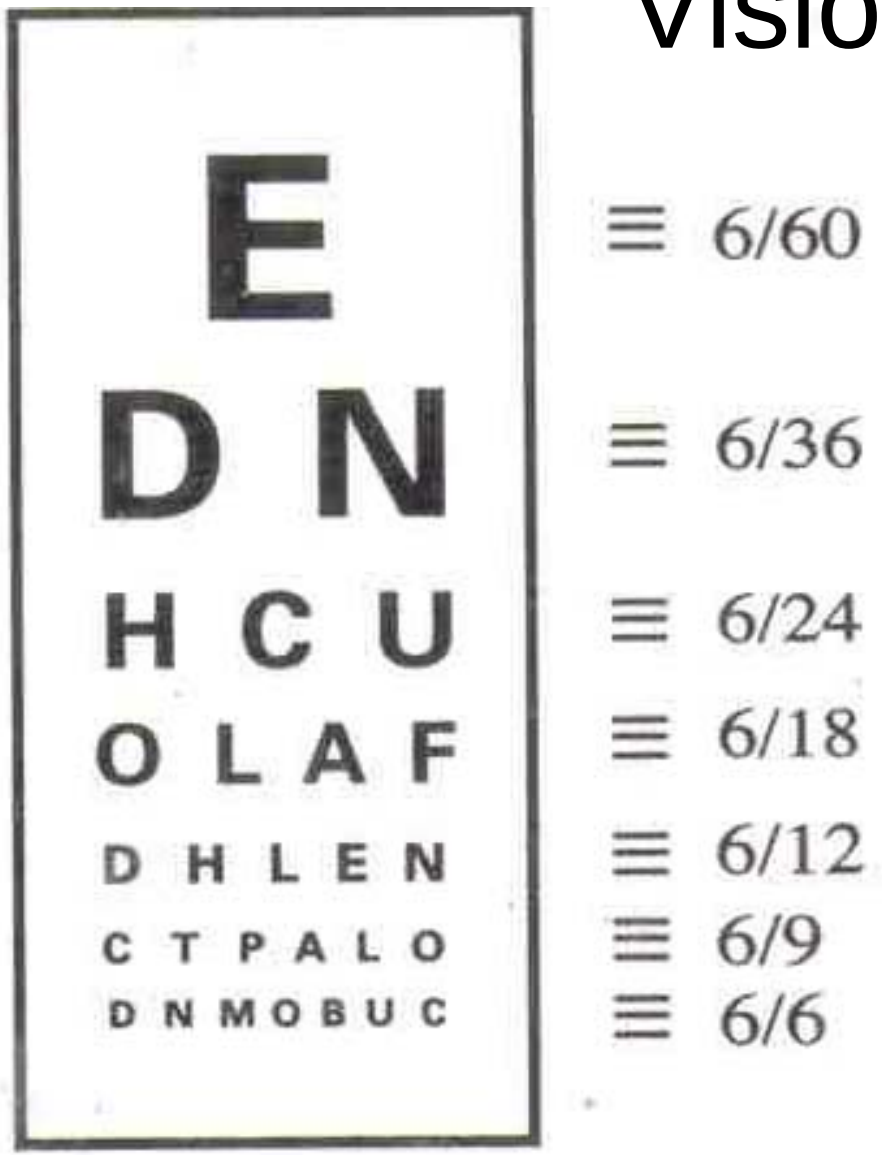
- Patient's co-operation
- Patient's comprehension of what is required
- Ability to recognise images used on the various charts (letters, numbers or pictures)
- Distance correction (glasses or contact lenses)

Why do a visual acuity test?

- Diagnostic tool
- Baseline data
- Measures progression of disease
- Evaluates treatment
- Legal requirement

To measure the patient's progress visual acuity must be assessed at every presentation.

Vision Testing Tools



The Snellen Chart is used in most facilities for testing distance vision

They are designed to be read at 6 metres or 3 metres (usually indicated on chart)

Vision charts are standardised for size and contrast and so do not photocopy or make your own

Vision Testing Tools

The Snellen Chart comes as a free standing cardboard chart or on a light box.

Chart should be in good order

If using a light box, ALL globes must be working to ensure standard illumination.

ONLY USE 25 watt clear globes (not pearl or frosted)

Vision Testing Tools

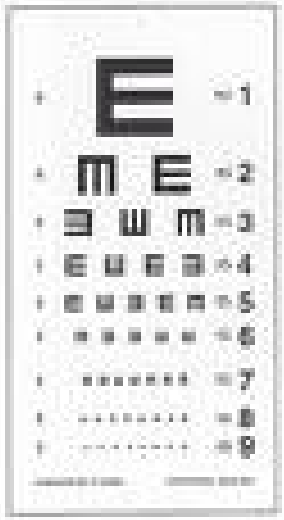
Sheridan Gardiner

For use with children, illiterate, aphasic patients

Patients match letter seen with letter on handheld card

Often used by Community / Rural nurses

Hundred and thousands – useful test for very young children (contrast test)



E chart

For use in NESB or illiterate patients

Patient matches direction of E with fingers

Distance Correction

- Visual acuity is a measure of best corrected distance vision
- People who are short-sighted and normally wear glasses or contact lenses should have their visual acuity tested wearing their glasses, i.e. their vision has been corrected
- If glasses or contact lenses are prescribed and available, testing without them provides no relevant information
- If glasses or contact lenses are prescribed but not available document before testing

Distance Correction (cont)

- Always ask if patients have distance glasses (e.g. to drive or watch TV) as some people do not wear them all the time
- Reading glasses (magnifiers) should not be worn during distance testing
- Reading glasses can distort distance vision
- Contact lenses should be documented but not removed for the test

Check with patient that the glasses they are wearing were prescribed for them. Many people borrow glasses.

Glasses prescriptions need to be updated regularly so some old glasses may not correct vision adequately. Ensure glasses are clean / scratch free

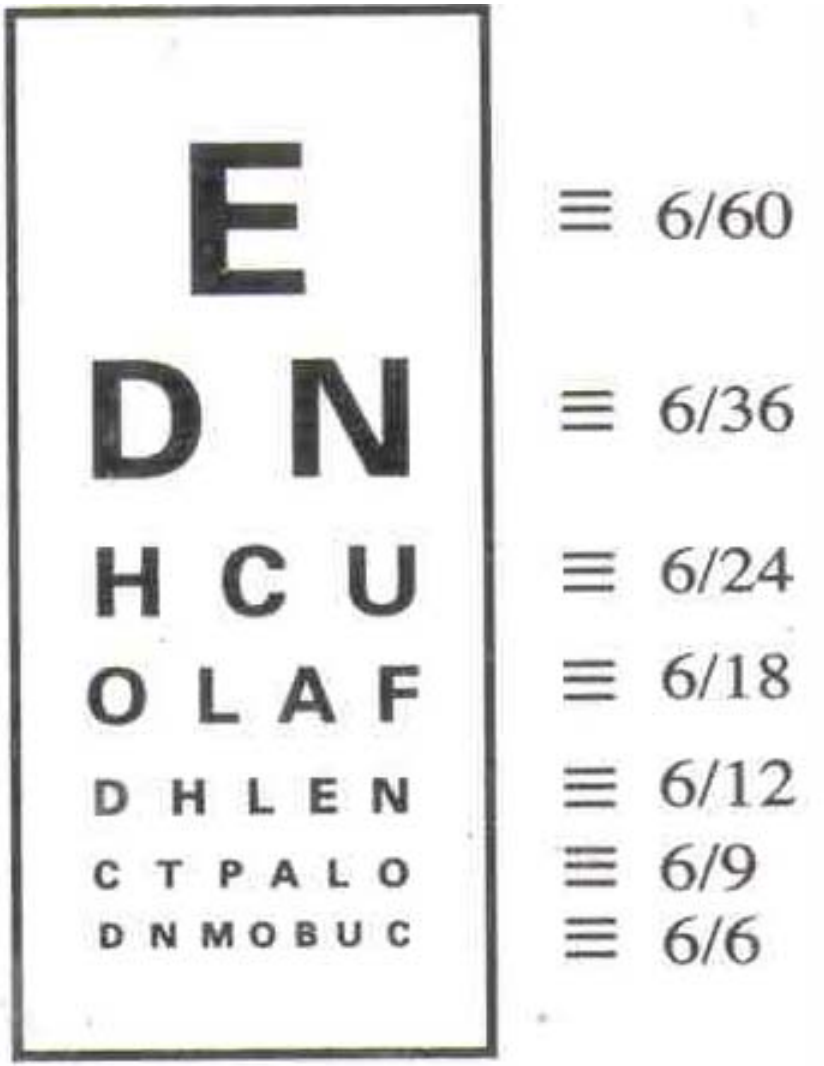
Occlusion

- Each eye needs to be tested separately
- Use an occluder to cover the eye that is not being tested
- If glasses are worn, the occluder goes over the top of the glasses
- If occluder is not available use the patient's cupped hand or a patch
- Avoid pressure on the eye and be aware of patients peeking through their fingers

Using the Snellen Chart

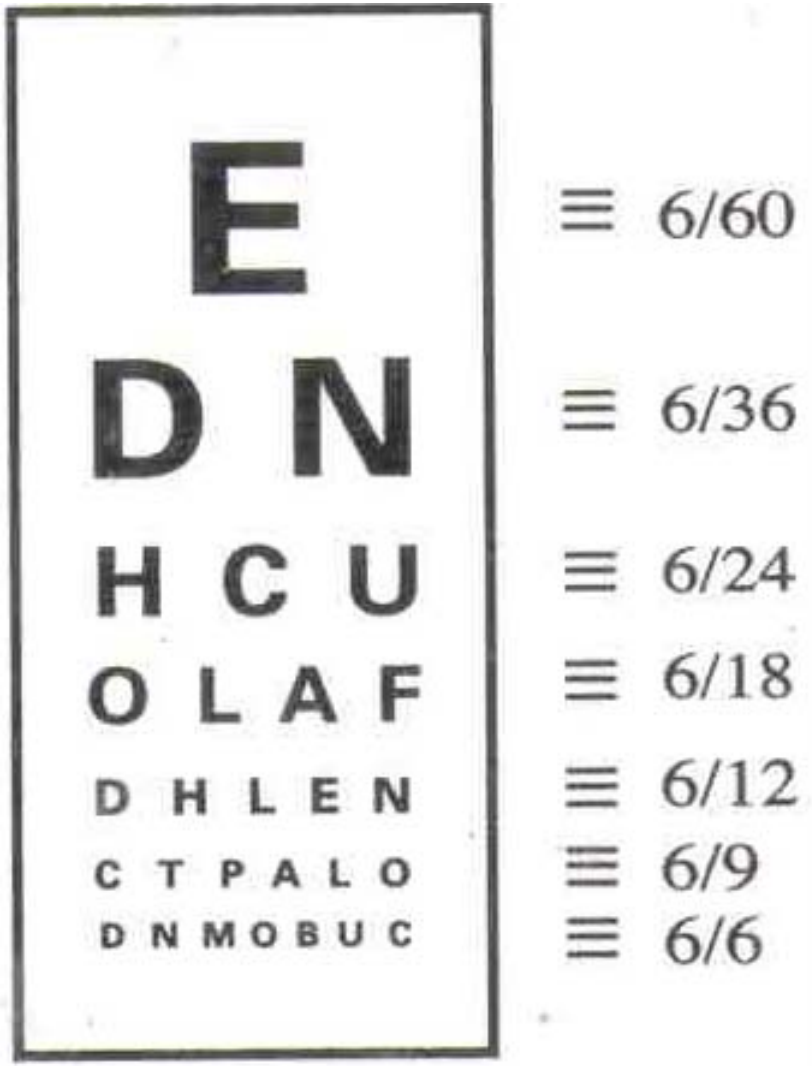
- Place patient 3 or 6 metres from chart (depending on the chart)
- Use adequate illumination
- Cover left eye with occluder / pad or cupped hand
- Ask patient to read from the top letter
- Keep going until they cannot read the line clearly and start to make multiple errors. The previous line is the line you document.

Snellen Chart



- Encourage patient to keep going as some give up easily
- Encourage patient to relax and blink regularly
- If the 6/6 line is not reached, use pinholes to see if vision improves
- If yes, continue testing vision until the patient is unable to clearly identify further letters/ numbers

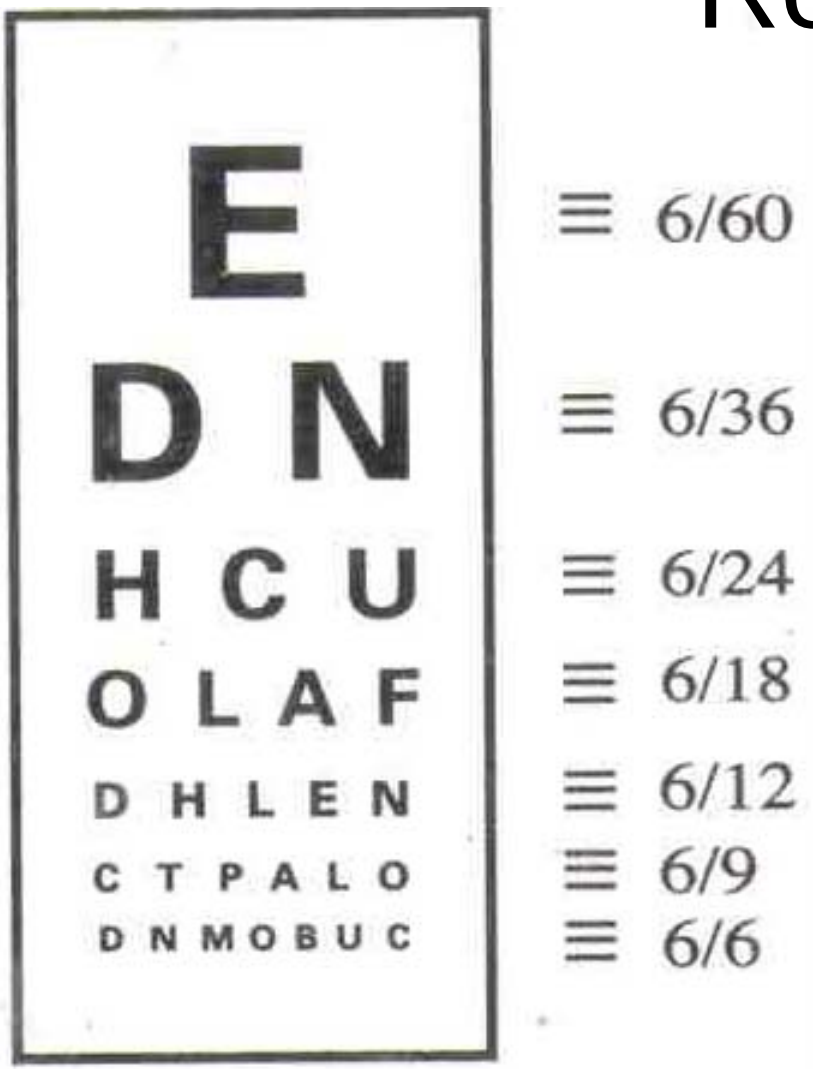
Snellen Chart (cont)



Avoid making comments while patient is reading the chart such as "*You got that letter wrong*" or "*Are you sure*?" This affects the patients behaviour and can influence the outcome.

Be aware that frequent presenters may memorise the chart. Use different charts if available or ask them to read it backwards. Be aware of mothers prompting children and relatives prompting culturally and linguistically diverse (CALD) patients.

Results



- Expressed as a ratio recorded as X / Y
- Where X is the testing distance and Y refers to the line containing the smallest letter that the patient identifies
- For example a patient has a visual acuity of 6/9

Documentation

- Record visual acuity (VA) for each eye
- Include pinhole (PH) if used
- If wearing glasses or contact lenses please document
- Artificial eyes need to be noted too

Examples: RVA 6/9 LVA 6/6 (with glasses)
PH 6/6

RVA 6/60 LVA prosthesis
PH no improvement

Documentation (cont)

- If the patient cannot see the top line of the chart, walk patient towards the chart so they are at 3 metres.
- Still can't read the chart? Ask patient to count how many fingers you are holding up at 1 metre. Keep fingers still. Recorded as Count Fingers (CF @1m)
- If they cannot count fingers see if they can see a moving hand. Recorded as Hand Movements (HM @1m)
- Still no result: can they see a pen torch light : Light perception (LP)
- Unable to perceive light: No Light Perception (NLP)

Documentation Examples

RVA HM @1m
PH 6/60

RVA 6/9
PH no improvement

RVA 6/60 @3m
PH no improvement

LVA 6/60 (forgot glasses)
PH 6/9

LVA HM @1m
PH CF @1m

LVA 6/6

Points to Remember

- **Test each eye separately**
- **Use distance correction if normally worn**
- **Use an occluder, cupped hand or patch**
- **Use pinhole if patient does not reach 6/6 line**