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# Assessing vision in a baby



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Don't be anxious about examining a baby. If the baby is awake and attentive, there is a lot you can find out by asking the parents and by simply observing the baby's reactions.

- First, ask the parents what they think about their baby's vision.
- Notice how the baby looks at things in the room, such as the window or any lights.
- Watch for eye contact between the baby and parents.
- Does the baby look when someone comes into the room?
- Does the baby respond to silent smiles or to raised eyebrows?
- Do you get eye contact?

You should have realistic expectations about what a baby should be able to do by a certain age. Table 1 shows when a baby is too young to show a visual response, when the response is likely to develop, and at what age you should be worried if a baby does NOT show the expected response. You can ask the mother or



*Figure 1. An eye care worker checks a baby's fixation. The baby is looking at her face, which is a reassuring sign.*

Aderonke Baiyerolu

check the baby's responses yourself.

For example, if a baby of about three weeks old does not turn to a diffuse light, such as light coming from a window, you would not necessarily be worried – although you would still believe the parents if they are concerned. On the other hand, if a baby is eight weeks old

and does not eventually turn to a diffuse light, then there may be a problem and you should investigate further.

Bear in mind that there can be a lot of variation in babies' development; however, the table should be a helpful guide.

The most common and helpful test is the ability to fix and follow a light or a face.

**Table 1. Normal visual functioning for a baby**

Behaviour	Age				
	Neonate	6 weeks	3 months	4 months	5 months +
Blinks when a light is flashed in their eyes?	Healthy babies will do this. If not, suspect a problem				
Turns to a diffuse light, such as a light coming from a window?	May do it	Healthy babies will do this. If not, suspect a problem			
Looks at your face when 10–20 cm away (less than 1 foot)? Any response to silent smiles or eyebrow raising?	Too young	May do it	Healthy babies will do this. If not, suspect a problem		
Eyes fix on, and follow, a dangling ball or toy?	Too young	May do it	Healthy babies will do this. If not, suspect a problem		
Watches an adult at 1.5 metres (5 feet)?	Too young	May do it		Healthy babies will do this. If not, suspect a problem	
Converges accurately? (If you move a toy closer and further away, do the eyes focus on the toy and line up properly?)	Too young	May do it		Healthy babies will do this. If not, suspect a problem	
Blinks in response to a threat? (Any silent, sudden movement close to the face which causes no breeze, e.g., opening your fist very suddenly.)	Too young	Too young	Too young	May do it	Healthy babies will do this. If not, suspect a problem



Wanjiku Mithenge

**Figure 2. A healthy baby with good fixation. It is clear that he can see the camera and is reaching out for it.**

This can be recorded using CSM notation, where:

- C = Central (fixing)
- S = Steady (following)
- M = Maintained (fixation resumed after cover/uncover)

### Tips for examining a baby

- Try to carry out as much of the examination as possible without touching the baby. Children often resist having their eyes held open, for example.
- Have many toys available. For each new toy, the baby will momentarily hold their eyes steady, allowing a quick examination. If available, use toys which are bright and can flash on and off. A good rule to remember is one toy, one look.
- Don't be embarrassed about making funny noises! These help to attract the baby's attention and to keep them interested and calm.
- In order to be able to do a more detailed examination in an infant, examine the child while he or she is being bottle fed or breast fed.

If you are struggling, ask the parent's permission to wrap the baby. Place the baby on a blanket or sheet, hold the arms to the side and the legs straight, and wrap the blanket around the body and arms (Figure 3). Ask the parent to hold the baby. Either the parent or a helper can then carefully open one eye at a time for the examination by gently holding the eyelids apart, without putting pressure on the eye. Remember that this may be very stressful for both the baby and the parent.



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**Figure 3. Wrapping a baby for an eye examination.**

# Understanding and caring for the direct ophthalmoscope



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A direct ophthalmoscope, or simply an ophthalmoscope, is a hand-held optical instrument used to inspect the fundus or back of the eye.

The ophthalmoscope (Figure 1) contains a handle with a rechargeable battery and a head, frequently detachable, that contains a bulb, a set of apertures for the light source, and a set of lenses. The view provided by the ophthalmoscope is monocular, non-stereoscopic (2D), narrow field (5°), and is magnified about 15 times.

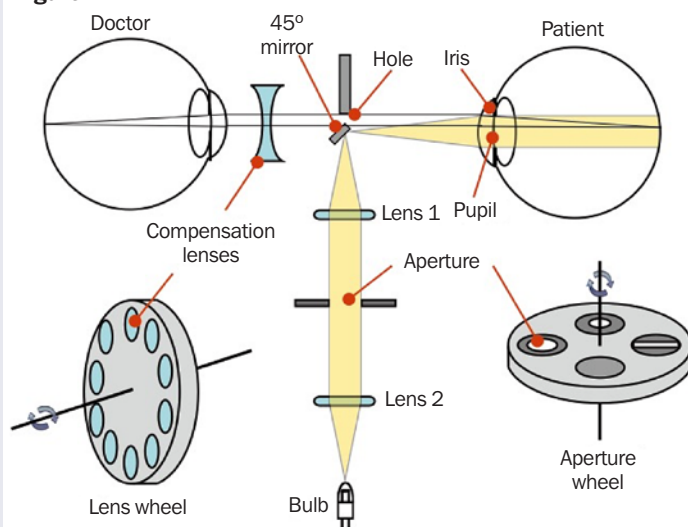
Light from a bulb (Figure 2) is reflected at right angles and projected as a spot through the iris of the patient to illuminate the retina. This reflection is achieved using a mirror or prism. The illuminated retina is seen directly by the health professional (the user) through the iris of the patient.

The ophthalmoscope can be adjusted to suit the task at hand. A disc or wheel contains lenses of different powers and the required lens can be brought into the line of sight to correct any refractive error on the part of the patient (or of the user if she is not using her spectacles). The user looks just above the mirror or reflecting prism. Many ophthalmoscopes include a set of filters to cut out reflection from the cornea or to reduce the red glare from the retina. A disk or wheel allows the user to change the aperture of the light source. A small aperture is used for an undilated or small pupil. A regular aperture is used otherwise. A slit aperture is used as in a slit lamp. Finally, the brightness of the light can be adjusted by rotating the collar surrounding the on/off button.

## Care

- Keep the instrument in its case or pouch when not in use.
- Make sure the on-off switch is fully turned off (a click sound will be heard) before placing the instrument in its case.
- Recharge the batteries by placing the ophthalmoscope handle in the charging base at the end of each working day.
- When the ophthalmoscope is not likely to be used for long periods of time, remove the batteries from the handle to avoid leakage.
- Wipe dust off the outside of the instrument daily.
- While storing the instrument, keep the lens disc on the zero setting so dust does not build up on the other lenses (the zero setting is just a hole with no lens).
- Some ophthalmoscopes include a shutter for the viewing window. It should be closed when the instrument is not in use to prevent dust from entering.

**Figure 1**



**Figure 2**

