

## Randot Stereo Test

The Randot Stereo Tests are binocularly devised random dot patterns (made popular by computer technology) which require the individual to extract a form of a figure from the ground without the help of any monocularly visible contours. As disparity is reduced, however, the young child needs additional help to separate the form of the figure from the ground, so monocular contour is added. But whether homogenous or diverse, figure and ground are contiguous with no lateral or vertical distances between them to influence judgement. Although the homogenous Randot test prescribes a "form" response, it is valid if there is perceived only "something" or "nothing" at the proper locations.

The **RANDOT** Stereo Tests provide three variations to facilitate testing of individuals at different levels of comprehension as well as a gradient of disparity:

1. Large homogenous areas containing simple forms at two levels of gross disparity, with each set having one blank to act as control.
2. Cartoon animals to attract the interest of young children are arranged at three gross levels of disparity.
3. Contoured circles at ten levels of disparity provide a finely graded sequence for critical testing.

**TO ADMINISTER**, hold the test upright before the subject to maintain the proper axis of polarization; also, do not permit the head to tilt to the side. Provide adequate light but avoid reflections from the surface of the test - a dark area or curtain behind the subject helps. Although the tests are graded for 16 inches, some variation in distance should have little effect on the score. Polarizing viewers must always be worn - over prescription glasses, if used. For the bifocal wearer, position the test properly for near-point viewing. Impaired acuity itself may blur the random dot pattern to a point where an otherwise normal person cannot separate a disparate form from the background.

### **RANDOT Forms**

Simple geometric forms and the familiar E are central in each area except one, which acts as control. A direct procedure is to ask which area does not appear to have any form in it. The mature child may be able to identify the forms, but an acceptable response is that there is "something" or "nothing" in the proper areas. If there is not a quick response with the forms, do not conclude too rapidly that there is no stereoscopic fusion. Some binocular individuals rely heavily on monocular clues of depth such as motion parallax (i.e. viewing closer objects as moving faster than more distant ones), overlap, size, perspective, shading, and when binocular disparity is the

only one present, as in this test, the perceptual response may develop slowly. Let the subject study it for a while, giving him encouragement and suggestions. Poor response from some children may be because of communication difficulties and not visual inadequacy. Be simple and direct to assist understanding. Encourage the child to point rather than relying solely on verbal responses. Presenting the test upside down will reverse the polarity of the images, making the form appear behind ground instead of forward, but it is usually easier to perceive the form if it is forward of ground.

### ***ANIMALS (with random dot ground)***

In each of the three tests only one of the animals should appear forward from the others or "different". It will help the children if you move your finger across the animals in the line being tested and ask, "does one of these seem to come out closer to you than the others?" Then have the child point to the one selected.

**SCORING** - Refer to the chart below. Take each line in order. When one is missed, go back and test the preceding line again to determine whether the subject can achieve this level or is just guessing.

Scoring Key	Seconds of arc at 16 in.	Shepard Percentage	Verhoff Distance
A Cat	400	0.15	0.1
B Rabbit	200	0.3	0.2
C Monkey	100	0.5	0.3

### ***CIRCLES (with random dot ground)***

This multiple-choice series tests fine depth discrimination. Within each of ten targets are three circles. Only one of the circles has crossed disparity, which, when seen binocularly, should appear to stand forward from the other two. Ask which one seems to float forward or appears "different" from the others - left, middle or right. Always assist the child by running your finger across all three circles and then have him point to the one selected.

**SCORING** - Refer to the chart. Record the level of stereopsis of the last one chosen correctly. If one is missed, go back and test the preceding line again to determine whether subject can achieve this or is just guessing. Remember, if all 10 targets are observed correctly record "at least 20 secs of arc".

Scoring Key	Seconds of arc at 16 inches
1 L	400
2 R	200
3 L	140
4 M	100
5 R	70
6 M	50
7 L	40
8 R	30
9 M	25
10 R	20

The suppression check is useful in analysing the visual balance of the two eyes. The right eye sees the R and a vertical line - the left eye the L and a horizontal line, which in normal binocular vision combines with the vertical line to form a cross. The relative stability of these can give clues of eye dominance, and of course gross fading or absence indicates a failure of that eye to function properly under binocular conditions. A change manifest in the appearance of the forms when covering the opposite eye may help to indicate the nature and degree of malfusion present.