



KAC Children's Grating Test Card

Equivalent to Teller Acuity and Keeler Acuity Cards

Part Number: 696600 - Technical Bulletin

KAC Children's Grating Test provides a rapid method of determining the visual acuity of infants and young children. The KAC Set is based on the techniques of the Teller Acuity Test pioneered in the United States which was later adapted, tested and used in clinical practice in Europe as the Keeler Acuity Cards (KAC) for many years. This technique is based on infants' known "preference" for patterned stimuli (preferential looking) as indicated by their looking behavior. The test includes 18 cards in two sections:

- Infant Assessment Set consists of eight acuity cards. Each card contains two circular apertures administered at 38 cm. In seven of the cards one of the apertures contains a grating patch of known spatial frequency (i.e. the number of black and white stripes per degree of visual angle). The eighth card does not contain a grating in either aperture--this is marked the "blank". A small round peep-hole is located at the center of each card through which the patient is observed during the test. This set covers LogMAR 0.4 (Snellen 20/20) to LogMAR 2.2 (Snellen 20/3400)

-Children's Additional Set provides a further set of 10 cards with 4 cards in the nominal acuity range 14.5 to 35.4 c/deg (LogMAR 0.3 to -0.1 or Snellen 20/40 to 20/17), and six cards within the range of 0.29 to 9.6 c/deg (LogMAR 2.0 to 0.5 or Snellen 20/2100 to 20/60 - see table). The additional cards extend the KAC Children's Grating Test assessment beyond the first year of life and provide greater sensitivity when testing acuities are below 12.5 c/deg.



"The results of 95 children tested with Teller and KAC did not indicate any significant differences between the acuity scores obtained with the two tests." Dr Neu 1997

Acuity Card Number	Group	Cycles per cm	Cycles per degree at 38 cm	Approx Snellen Equivalents		Approx LogMAR equivalents
1	Additional	49.2	35.4	6/5	20/17	-0.1
2	Additional	35.4	25.5	6/7	20/25	0.1
3	Additional	30	21.6	6/9	20/30	0.2
4	Additional	20.1	14.5	6/12	20/40	0.3
5	Infant	17.3	12.5	6/14	20/50	0.4
6	Additional	13.3	9.6	6/18	20/60	0.5
7	Additional	10.7	7.7	6/24	20/80	0.6
8	Infant	9	6.5	6/30	20/90	0.7
9	Additional	5.3	3.8	6/50	20/160	0.9
10	Infant	4	2.9	6/60	20/200	1.0
11	Additional	2.9	2.1	6/90	20/300	1.1
12	Infant	2	1.4	6/130	20/400	1.3
13	Additional	1.33	0.96	6/190	20/600	1.5
14	Infant	1	0.72	6/250	20/800	1.6
15	Infant	0.5	0.36	6/500	20/1700	1.9
16	Additional	0.4	0.29	6/620	20/2100	2.0
17	Infant	0.025	0.18	6/1000	20/3400	2.2
18	Infant	Blank				

Advantages of the Children's Grating Test

In addition to being half the cost of the Teller Acuity Test, KAC cards are produced by the same firm in the United Kingdom that has manufactured the very successful Cardiff Acuity Test and the discontinued Keeler Acuity Cards for many years. This high quality printer is not a 'new comer' to the level of quality required for the preferential looking tests such as Teller, Cardiff and Keeler.



KAC Children's Grating Test supports efficient vision testing of children from a few months old to about 3 years old. Once the administrator is familiar with handling these cards, this test takes only five to 10 minutes to complete for both eyes. In addition, adult, non-verbal patients can also be tested with the Gratings. References and Clinical Trial documents available on request.

KAC Children's Grating Test cards are 10.5 x 22.5 inches and include peep hole in center for the examiner to see the child's eye movements and avoid the distraction of the examiner's face. The cards are made of a plastic composite for durability and come boxed.

696600 KAC Children's Grating Test Card Set





KAC Children's Grating Test Card

Equivalent to Teller Acuity and Keeler Acuity Cards

Part Number: 696600 - Technical Bulletin

Competitive Comparison:

Teller Acuity Cards™ II	Recommended Age	Optotype Acuity Range	# of Cards	Card Size	# Acuity levels
Teller Acuity Cards™ II	3 months to 3 years	20/16 to 20/1900	17	10.5 x 22.5 in. (27 x 57 cm)	17+ with variable distance
KAC Children's Grating Test	3 months to 3 years	20/17 to 20/3400	18	10.5 x 22.5 in. (27 x 57 cm)	17+ with variable distance
City-Cardiff Infant Gratings Test	3 months to 3 years	20/17 to 20/2000	18	11.5 x 8.25 in. (29.5 x 21 cm)	17+ with variable distance
Cardiff Acuity Test™ - Standard	6 months to 3 years	20/12.5 to 20/180	36	7.75 x 10.5 in (20x27 cm)	24
Cardiff Acuity - with Low Vision	6 months to 3 years	20/12.5 to 20/640	45	7.75 x 10.5 in (20x27 cm)	30
Cardiff Screener Set	6 months to 3 years	20/12.5 to 20/640	24	7.75 x 10.5 in (20x27 cm)	12
Pacific Acuity Test	6 months to 3 years	20/20 to 20/400	18	9.75 x 17.375 in (25x44 cm)	36
LEA Gratings™	12 months to 2 years	not applicable	6	NA	6
Richman™ Stimulus Paddles	12 months to 2 years	not applicable	3	NA	NA
Allen School 6" Figures w/ hand	3 to 5 years	20/30 to 20/100	4	NA	4
LEA Single Symbol™ Book	19-36 months	10/5 to 10/100	13	NA	13

REFERENCES: Price, D., Minshull, C., Moseley, M. and Fielder, A. (1987) The acuity card procedure: its use in orthoptics. *British Orthoptic Journal* 44, 34-38.

Teller, D.Y., McDonald, M., Preston, K., Sebris, S.L. and Dobson, V. (1986) Assessment of visual acuity in infants and children. *Developmental Medicine and Child Neurology* 28, 779-787.

REPRESENTATIVE STUDIES ON NORMAL INFANTS

McDonald, M., Dobson, V., Sebris, S.L., Baitch, L., Varner, D and Teller, D.Y (1985) The acuity card procedure: a rapid test of infant visual acuity. *Investigative Ophthalmology and Visual Science* 26, 1158-1162

Brown, A.M., and Yamamoto, M. (1986) Visual acuity in newborn and preterm infants measured with grating acuity cards. *American Journal of Ophthalmology* 102, 245-253.

McDonald, M., Sebris, S.L., Mohn, G., Teller, D.Y. and Dobson, V. (1986) Monocular acuity in normal infants: the acuity card procedure. *American Journal of Optometry and Physiological Optics* 63, 127-134.

Dobson, V., Schwartz, T.L., Sandstrom, D.J. and Michel, L. (1987) Binocular visual acuity of neonates: the acuity card procedure. *Developmental Medicine and Child Neurology* 29, 199-206.

McDonald, M., Ankum, C., Preston, K., Sebris, S.L. and Dobson, V. (1986) Monocular and Binocular acuity estimation in 18- to 36-months-old: acuity card results. *American Journal of Optometry and Physiological Optics* 63, 181-186.

CLINICAL STUDIES

Mohn, G. and van-Hoff van Duin, J. (1986) Rapid assessment of visual acuity of infants in a clinical setting using acuity cards. *Documenta Ophthalmologica Proceedings Series* 45, 363-372.

Preston, K.L., McDonald, M., Sebris, S.L., Dobson, V. and Teller, D.Y. (1987) Validation of the acuity card procedure for infants with ocular disorders. *Ophthalmology* 94, 644-653.

Dobson, V., McDonald, M., Kohl, P., Stern, N., Samek, M., and Preston, K. (1986) Visual acuity screening of infants and young children with the acuity card procedure. *Journal of the American Optometric Association* 57, 284-289.

Hertz, B.G. (1987) Acuity card testing of retarded children. *Behavioural Brain Research* 24, 85-92.

Kohl, P., Rolen, R.D., Bedford, A.K., Samek, M. and Stern, N. (1986) Refractive error and preferential looking visual acuity in human infants: a pilot study. *Journal of the American Optometric Association* 57, 290-296.

Sebris, S.L., Dobson, V., McDonald, M. and Teller, D.Y. (1987) Acuity cards for visual acuity assessment of infants and children in clinical settings. *Clinical Vision Sciences* 2, 45-58

Fielder, A.R. and Moseley, M.J. (1988) Do we need to measure the vision of children? *Journal of the Royal Society of Medicine*. In press.