

PandAcuity in pediatrics – a novel clinical measure of visual function based on the panda illusion

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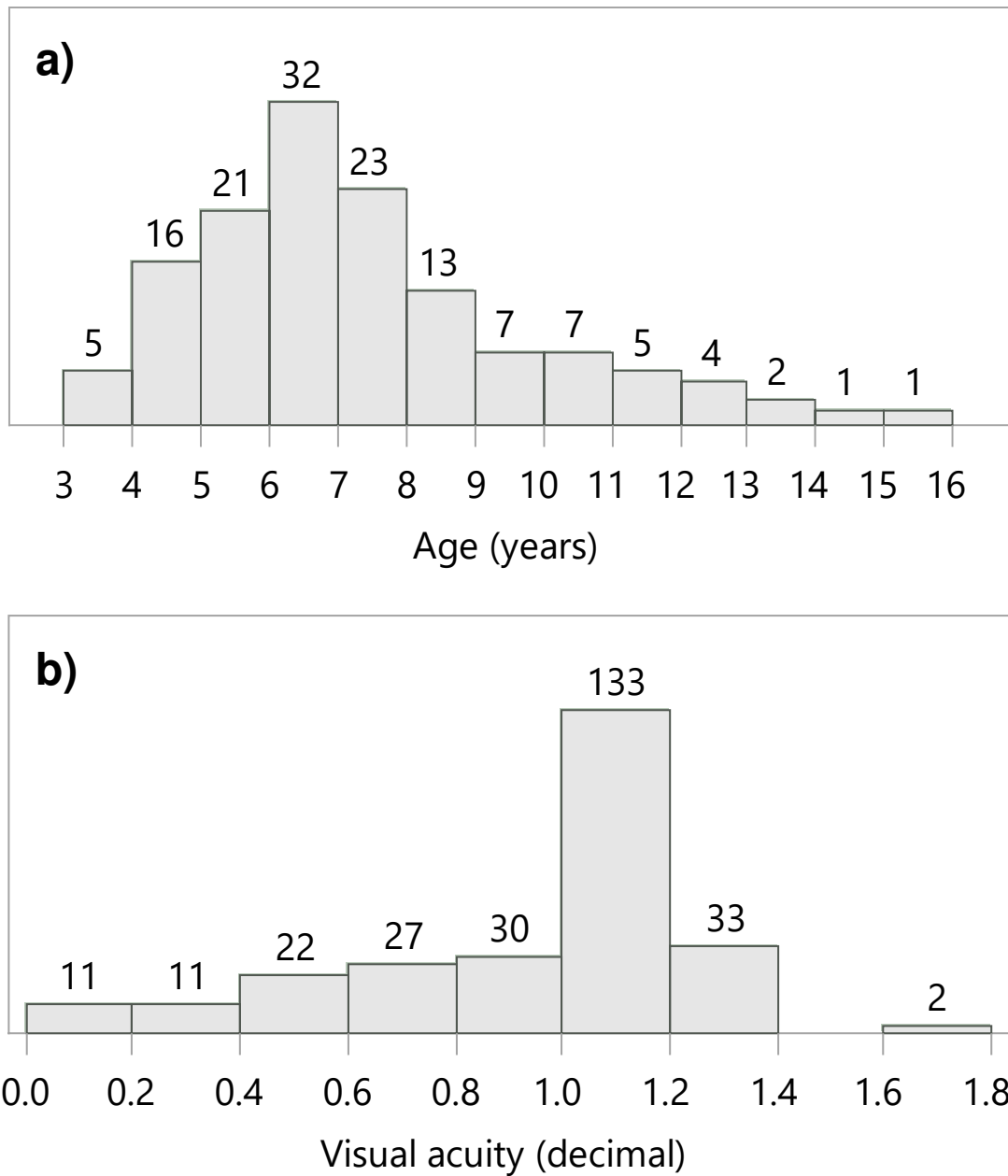
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Supplemental File 1. Classification of visual impairment according to the visual standards report of the 29th Congress of International Council of Ophthalmology⁹

VA (decimal)	VA (logMAR)	Snellen equivalent	Vision impairment
> 0.8	< 0.1	> 20/25	None
0.5 – 0.8	0.1 – 0.3	20/25 – 20/40	Minimal
0.32 – 0.5	0.3 – 0.5	20/40 – 20/63	Mild
0.125 – 0.32	0.5 – 0.9	20/63 – 20/160	Moderate
0.05 – 0.125	0.9 – 1.3	20/160 – 20/400	Severe
< 0.05	> 1.3	< 20/400	Profound



Supplemental File 2. Distribution of the included 137 children a) age and b) visual acuity of the 269 eyes

Supplemental File 3. Confusion matrix of the binary logistic regression predicting a visual impairment based on the averaged PandAcuity score

Visual impairment observed	Actual	Visual impairment predicted from PandAcuity	
		yes	No
yes	71	48	23
no	198	24	174

Visual impairment: VA < 0.8 (decimal)

Supplemental File 4. Results of nine children with nystagmus. The PandAcuity score was calculated as the average of the first and second threshold determinations of the test and the prediction was determined according to the workflow depicted in Figure 2. The agreement between the classifications is based on the difference of the classification (1 step = almost equal, 2 steps = similar, 3 steps different, 4 steps very different)

Participant		PandAcuity (decimal)	VA (decimal)	Prediction	Visual impairment‡		Agreement
					PandAcuity	VA	
Pan13	OD	≤ 0.6*	1.0	incorrect	minimal	none	almost equal
	OS	≤ 0.4†	1.0	incorrect	mild	none	similar
Pan30	OD	≤ 0.6†	0.3	correct	minimal	moderate	similar
	OS	≤ 0.6†	0.03	correct	minimal	profound	very different
Pan43	OD	≤ 0.4†	0.4	correct	mild	mild	equal
	OS	≤ 0.4†	0.4	correct	mild	mild	equal
Pan44	OD	≤ 0.4†	0.4	correct	mild	mild	equal
Pan54	OD	≥ 1.25‡	0.8	correct	none	none	equal
	OS	1.12‡	0.8	correct	none	none	equal
Pan57	OD	≤ 0.4†	0.16	correct	mild	moderate	almost equal
Pan116	OD	≤ 0.4†	0.3	correct	mild	moderate	almost equal
	OS	≤ 0.4†	0.3	correct	mild	moderate	almost equal
Pan117	OD	≤ 0.4†	0.5	correct	mild	minimal	almost equal
	OS	≤ 0.4†	0.5	correct	mild	minimal	almost equal
Pan126	OD	≤ 0.4†	0.05	correct	mild	profound	different
	OS	≤ 0.4†	0.2	correct	mild	moderate	almost equal

*Test-set high (0.6 – 1.6); †Test-set low (0.4 – 1.25); ‡Classification according to ICO⁹. VA = visual acuity by conventional tests

Supplemental File 5. Results of seven developmentally delayed children or those with intellectual disabilities. The PandAcuity score was calculated as the average of the first and second measurements of the test and the prediction was determined according to the workflow depicted in Figure 2. The agreement between the classifications is based on the difference of the classification (1 step = almost equal, 2 steps = similar, 3 steps different, 4 steps very different)

Participant		PandAcuity (decimal)	VA (decimal)	Prediction	Visual impairment‡		Agreement
					PandAcuity	VA	
Pan34	OD	≤ 0.6*	0.5	correct	minimal	minimal	equal
Joubert- Syndrome	OS	≤ 0.6*	0.5	correct	minimal	minimal	equal
Pan40	OD	≤ 0.6*	0.5	correct	minimal	minimal	equal
Trisomy 21	OS	≤ 0.6*	0.4	correct	minimal	mild	almost equal
Pan49	OD	≤ 0.4†	0.16	correct	mild	moderate	almost equal
Williams- Beuren- Syndrome	OS	≤ 0.4†	0.1	correct	mild	severe	similar
Pan79	OD	≤ 0.6*	0.63	correct	minimal	minimal	equal
Cerebral paresis	OS	≤ 0.6*	0.63	correct	minimal	minimal	equal
Pan105	OD	≤ 0.6*	0.3	correct	minimal	moderate	similar
Microdeletion syndrome	OS	≤ 0.6*	0.25	correct	minimal	moderate	similar
Pan141	OD	≥ 1.6*	1.0	correct	none	none	equal
Beckwith- Wiedemann Syndrome	OS	1.13*	1.0	correct	none	none	equal
Pan149	OD	≥ 1.6*	1.0	correct	none	none	equal
Intellectually disabled	OS	≥ 1.6*	1.0	correct	none	none	equal

*Test-set high (0.6 – 1.6); †Test-set low (0.4 – 1.25); ‡Classification according to ICO⁹. VA = visual acuity by conventional tests