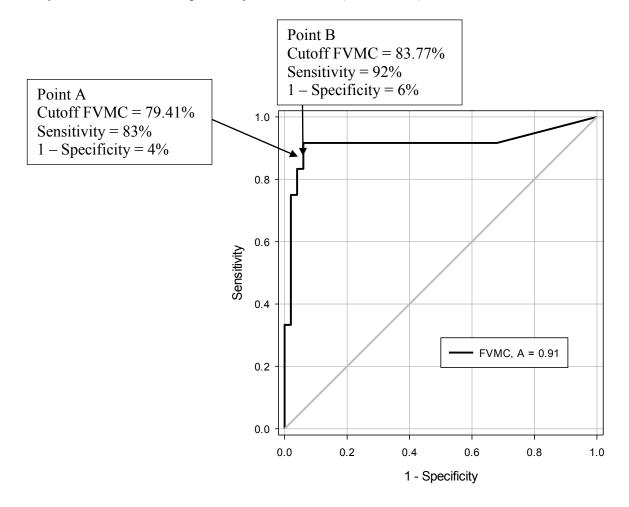
Supplemental material, Guo et al., "Finite Verb Morphology Composite Between Age 4 and Age 9 for the Edmonton Narrative Norms Instrument: Reference Data and Psychometric Properties," *LSHSS*, <u>https://doi.org/10.1044/2019_LSHSS-19-0028</u>

Supplemental Material S3. Example of a receiver operating characteristic (ROC) curve analysis.

The ROC curve analysis plots the true positive rate (i.e., sensitivity) against the false positive rate (i.e., 1 – specificity) for the different possible cutoff scores. Below is an example of the ROC curve analysis using the results from 4-year-olds in the present study. The curve above the diagonal line is the ROC curve. Each point on the ROC curve represents the true positive rate (i.e., sensitivity) and the associated the false positive rate (i.e., 1 – specificity) at a given cutoff FVMC score. In the example below, the cutoff FVMC score of 79.41% yields a sensitivity level of 83% and a specificity level of 96% (i.e., 1 - 4%). The cutoff FVMC score of 83.77% yields a sensitivity level of 92% and a specificity level of 94% (i.e., 1 - 6%).



Because of the ROC curve analysis, the software is able to generate pairs of sensitivity and specificity values for a variety of cutoff FVMC scores as in the tables in the next section. The highlighted row indicates the cutoff FVMC value that maximizes the diagnostic accuracy, where sensitivity plus specificity divided by 2 is largest. On the following page are the cutoff scores and the associated sensitivity and specificity for each age level.

Supplemental material, Guo et al., "Finite Verb Morphology Composite Between Age 4 and Age 9 for the Edmonton Narrative Norms Instrument: Reference Data and Psychometric Properties," *LSHSS*, <u>https://doi.org/10.1044/2019_LSHSS-19-0028</u>

Aσe	4
Age	4

Agt 4		
Cutoff <	Sensitivity	Specificity
22.65%	8%	100%
26.69%	17%	100%
31.82%	25%	100%
41.67%	33%	100%
53.26%	33%	98%
57.11%	42%	98%
58.01%	50%	98%
62.99%	58%	98%
71.32%	67%	98%
75.74%	75%	98%
77.12%	75%	96%
79.41%	83%	96%
81.43%	83%	94%
83.77%	92%	94%
87.09%	92%	90%
88.97%	92%	86%
90.89%	92%	84%
92.50%	92%	82%
92.89%	92%	80%
93.22%	92%	76%
93.44%	92%	74%
93.77%	92%	72%
94.19%	92%	70%
94.41%	92%	68%
94.52%	92%	66%
94.62%	92%	64%
94.82%	92%	62%
95.06%	92%	60%
95.43%	92%	58%
95.79%	92%	56%
96.19%	92%	50%
96.76%	92%	44%
97.10%	92%	42%
97.47%	92%	40%
97.86%	92%	38%
98.09%	92%	36%
98.26%	92%	34%
99.17%	92%	32%

	Age 5	
Cutoff <	Sensitivity	Specificity
20.00%	7%	100%
40.83%	7%	98%
52.41%	14%	98%
65.95%	21%	98%
69.38%	29%	98%
70.19%	36%	98%
71.39%	43%	98%
72.87%	43%	96%
75.00%	50%	96%
79.12%	50%	94%
83.65%	57%	94%
86.34%	71%	94%
87.74%	79%	94%
89.09%	86%	94%
90.77%	86%	92%
92.61%	93%	92%
93.46%	100%	90%
93.66%	100%	88%
93.93%	100%	84%
94.20%	100%	82%
94.68%	100%	80%
95.27%	100%	78%
95.52%	100%	76%
95.62%	100%	74%
96.16%	100%	72%
96.72%	100%	70%
96.96%	100%	66%
97.46%	100%	64%
97.83%	100%	62%
97.94%	100%	60%
98.02%	100%	58%
99.02%	100%	54%

Age 6

Cutoff <	Sensitivity	Specificity
46.50%	9%	100%
57.50%	18%	100%
74.50%	27%	100%
82.50%	36%	100%
83.50%	45%	100%
85.00%	55%	100%
87.00%	64%	100%
88.50%	64%	98%
90.00%	64%	94%
91.50%	73%	92%
92.50%	73%	90%
93.50%	82%	90%
95.00%	82%	86%
96.50%	82%	78%
97.50%	91%	62%
98.50%	100%	46%
99.50%	100%	40%

Supplemental material, Guo et al., "Finite Verb Morphology Composite Between Age 4 and Age 9 for the Edmonton Narrative Norms Instrument: Reference Data and Psychometric Properties," *LSHSS*, <u>https://doi.org/10.1044/2019_LSHSS-19-0028</u>

Age 7

Age 8

Age 9

Cutoff <	Sensitivity	Specificity
48.53%	8%	100%
56.82%	15%	100%
65.15%	23%	100%
67.71%	31%	100%
72.67%	38%	100%
82.94%	38%	98%
89.96%	46%	98%
91.61%	54%	98%
93.36%	54%	96%
94.38%	62%	96%
94.72%	69%	96%
95.27%	69%	94%
95.87%	69%	92%
96.21%	77%	90%
96.52%	77%	88%
96.64%	85%	86%
96.94%	85%	84%
97.24%	85%	82%
97.33%	85%	80%
97.48%	85%	78%
97.71%	85%	74%
97.92%	85%	72%
98.04%	85%	70%
98.29%	85%	68%
98.70%	85%	66%
99.09%	85%	64%
99.65%	92%	64%

Cutoff <	Sensitivity	Specificity
50.00%	6%	100%
79.00%	18%	100%
85.00%	24%	100%
88.00%	29%	100%
90.50%	35%	100%
91.50%	41%	98%
93.00%	47%	98%
94.50%	53%	96%
95.50%	59%	90%
96.50%	59%	82%
97.50%	76%	80%
98.50%	82%	58%
99.50%	82%	50%

Cutoff <	Sensitivity	Specificity
81.46%	10%	100%
87.85%	10%	98%
89.97%	20%	98%
92.32%	30%	98%
93.54%	40%	98%
93.93%	50%	98%
94.68%	60%	98%
95.89%	60%	96%
96.58%	60%	94%
96.74%	60%	92%
96.99%	60%	90%
97.29%	60%	88%
97.49%	60%	86%
97.55%	60%	84%
97.66%	60%	82%
97.75%	60%	80%
97.80%	70%	76%
97.85%	80%	76%
97.97%	80%	74%
98.16%	80%	72%
98.35%	80%	70%
98.50%	80%	66%
98.57%	80%	64%
98.70%	80%	62%
98.80%	80%	60%
98.86%	80%	58%
98.96%	80%	56%
99.02%	80%	54%
99.06%	80%	52%
99.55%	80%	50%