

## A NEW SPIROMETRY VALUE, IsovolumFEF<sub>25-75%</sub>6

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**Introduction:** When FEF<sub>25-75%</sub> is used to assess bronchodilator response isovolumFEF<sub>25-75%</sub> values are recommended. Previously, we found FEF<sub>25-75%</sub>6 to be less variable than FEF<sub>25-75%</sub> and diagnostically equivalent to FEF<sub>25-75%</sub>.

**Aim:** To evaluate bronchodilator responses using a new parameter, isovolumFEF<sub>25-75%</sub>6.

**Methods:** We analyzed bronchodilator responses in 168 consecutive patients referred for clinical testing. For the isovolumFEF<sub>25-75%</sub>6 parameter 162 results could be analyzed. Response thresholds for mid-flow values were set at 15, 25 and 45% improvements from baseline values. Comparisons were made to the bronchodilator response of 12% and 200 ml increases from baseline in FEV<sub>1</sub>.

**Results:** FEV<sub>1</sub> criteria identified 36 (21%) patients as responsive to bronchodilator.

Bronchodilator Improvement	Number of patients responding to Bronchodilator			
	FEF <sub>25-75%</sub>	FEF <sub>25-75%</sub> 6	IsoFEF <sub>25-75%</sub>	IsoFEF <sub>25-75%</sub> 6
> 15%	79 (47%)	73 (43%)	114 (68%)	89 (53%)
> 25%	59 (35%)	44 (26%)	92 (55%)	77 (46%)
> 45%	18 (11%)	17 (10%)	66 (39%)	43 (26%)

The analyses showed that a 45% increase in isovolumFEF<sub>25-75%</sub>6 was the best match with the 12% and 200 ml FEV<sub>1</sub> criteria. Sensitivity 91%; specificity 91%; positive predictive value 72%; and negative predictive value of 97%.

**Conclusion:** The performance of isovolumFEF<sub>25-75%</sub>6 for assessing bronchodilator response most closely matches responses based on FEV<sub>1</sub>. Compared with FEV<sub>1</sub>, isovolumFEF<sub>25-75%</sub>6 responses using a 45% threshold identifies a few more responders. This may reflect dilation of peripheral airways. IsovolumFEF<sub>25-75%</sub>6 has promise as a sensitive measure of bronchodilator response.

**Key Words:** FEF<sub>25-75%</sub>, isovolumFEF<sub>25-75%</sub>, isovolumFEF<sub>25-75%</sub>6, FEF<sub>25-75%</sub>, bronchodilator response.