## 6.18 Inspiratory flow volume loop abnormalities: in the eye of the beholder

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Aim: Measure inter-rater agreement of respiratory physicians interpreting inspiratory flow loops (iFVL). **Background:** The inspiratory limb of spirometry can reveal upper airway obstruction and functional abnormalities including inducible laryngeal obstruction. 2005 ATS guidelines recommend using MIF50%/ MEF50% to identify inspiratory obstruction, a value not typically reported. Visual criteria for abnormal iFVLs include presence of a plateau, oscillations, or a biphasic shape within the inspiratory limb, all prone to variable interpretation. **Methods:** 334 spirometry tests over a three-month period were retrospectively selected. Spirometry values, clinical details and original report were redacted. iFVLs were reviewed by 3 independent physicians, coding iFVLs normal/abnormal based on visual inspection alone. Inter-rater agreement was measured using Krippendorf's alpha in the *irr* package in R. Where  $\geq 2/3$  assessors coded any iFVL as abnormal, the original clinical report was reviewed. **Results:** Inter-rater agreement across 324 included cases was weak (alpha=0.455). 64 cases met 2/3 consensus as abnormal (of which 50% met full 3/3 consensus as abnormal). Of the 64 cases, 12% were formally reported abnormal. 19% of cases were officially reported abnormal in the full consensus cohort. **Conclusions:** Interpretation of iFVL is prone to significant variability. Better diagnostic approaches are

needed to improve reproducibility and reliability of interpretation. **Conflicts of interest:** The authors have no conflicts of interest