Severity scores published for acute wheeze in preschool children: a systematic review

**Abstract**

**Background and Aims:** Severity scores for acute respiratory conditions can enable rapid clinical assessment and guide treatment. For acute preschool (1-5 years) wheeze, we aimed to identify published severity scores, their components and their validity.

**Methods:** We undertook a systematic review of severity scores for acute preschool wheeze (PROSPERO ID CRD42020212507). MEDLINE, Scopus, Web of Science and CINAHL were searched for novel/modified severity scores. Secondary outcomes included: items used in each score and their weighting, age range, study setting, and validity.

**Results:** 89 severity scores were identified in 87 publications. These scores included 24 domains, with 109 individual items. Auscultation was used in 85 scores; common items within this included expiratory wheeze (59/89), inspiratory breath sounds/wheeze (57) and air entry/breath sounds (56). Audible wheeze was assessed in 32 scores. Within the retraction domain (85), common items included intercostal (32) and subcostal (21) retraction. Many scores were for use in a specific setting: 42 for ED/primary care and 36 for inpatients. No score was fully validated according to pre-set criteria and only 37 had some validity data. The commonest form of validation was inter-observer reliability (22). 19 scores were deemed unsuitable for young children and only the Clinical Asthma Score was validated specifically in 1-5 years (Parkin, P.C. et al. J Clin Epidemiol 1996; 49(8):821-5).

**Conclusion:** Our systematic review identified 89 severity scores used to assess acute wheeze in preschool children. Few are validated, some are unfeasible, and overlap is significant. One validated severity score should be used routinely, to improve research utility.