All clinical definitions of asthma recognize a characteristic set of symptoms that are periodic and vary in severity. However, symptoms (especially “wheeze”) can mean different things to patients, parents and doctors [1, 2], and there is widespread agreement that objective tests must be used. The other key part of the definition is variable airflow obstruction, and so tests that demonstrate exaggerated variability, such as repeated measurements, or pharmacological stimulation of broncho-constriction or dilation, have traditionally formed the core of asthma diagnostics. Many factors restrict widespread adoption of these tests (such as reliability, patient acceptability, and availability), and so alternatives are needed, either through development of cheaper or more user-friendly physiological tests, or detection of commonly associated traits such as atopy or type II inflammation. Many clinicians encounter difficulties in accessing these tests and so still rely on “clinical judgment”, despite evidence of misdiagnosis in around a third of cases [3, 4].