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**Title:** The value of additional testing in physician diagnosed asthma: A prospective pilot study

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**Body:** Introduction: Asthma is a common, chronic inflammatory airway disease. Signs and symptoms of asthma are not specific, leading to under and overdiagnosis. In the Zwolle area, general practitioners can refer patients suspected of asthma to the Isala klinieken for spirometry or methacholine provocation testing. Aims: To investigate whether in patients with physician diagnosed asthma, but a negative methacholine provocation test, additional tests were valuable to establish asthma. Methods: Primary care patients with a physician diagnosis of asthma but a negative methacholine test were asked to fill out 2 questionnaires (Asthma Control Questionnaire and Bronchial Hyperresponsiveness Questionnaire) at home. In addition, they underwent a mannitol provocation test and fractional exhaled nitric oxid (FeNO) was measured. A priori, a diagnostic yield of  $\geq 20\%$  was considered as valuable. The study was approved by the local ethics committee (NL37979.075.11). Results: 160 patients were eligible and 51 were interested. Eventually, 36 subjects underwent the research protocol. Three participants had a positive mannitol provocation test (8.3%), only one (2.8%) subject had a FeNO-value of  $>30$  ppb. Mean sum scores for the BHQ were 30.0 ( $\pm 30.3$ ) in the positive mannitol group versus 36.5 ( $\pm 28.6$ ) in the negative group. Mean ACQ sum scores were respectively 4.7 ( $\pm 2.5$ ) and 4.0 ( $\pm 3.6$ ). A significant correlation was found between the ACQ and BHQ ( $r_s=0.80$ ). After assessment of the results, three participants received the diagnosis of asthma. Conclusion: In view of the low diagnostic yield found in this study, additional tests did not seem to have significant impact on the diagnostics of asthma.