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**Title:** Markers of airway remodeling in young adults with clinical remission of asthma

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**Body:** Background: Airway wall remodeling has been described in young adults with asthma persisting from childhood. We aimed to compare markers of remodeling between young adults from the Isle of Wight Birth Cohort with clinical remission of asthma (RA) and clinically persistent asthma (PA) against healthy controls (HC) Methods: Bronchial biopsies were analysed for Collagen I and Collagen III deposition within the submucosa. Collagen band thickness (CBT) was measured in biopsies with well-orientated epithelium. Data was analysed using non-parametric methods. Results: Collagen I was increased in subjects with PA compared with HC ( $p=0.007$ ); those with RA showed an intermediate level of Collagen I. Collagen III was highest in those with PA (vs RA  $p=0.017$ ; vs HC  $p<0.001$ ) and those with RA showed a lower level but still significantly higher than HC ( $p<0.035$ ). Mean CBT was higher in those with PA and RA than HC ( $p<0.001$  and  $p=0.001$  respectively)

Conclusion: Markers of remodelling are still visible in subjects with clinical remission of asthma. They have persistent CBT thickening similar to those subjects with clinically persistent asthma and significantly higher levels of Collagen III than healthy controls but less than those with persistent asthma. This would suggest that collagen band changes are non-reversible whereas submucosal expression of Collagens I and III remit with symptoms.