

due to simultaneous coexistence of both asthma and COPD. From an asthma perspective, recognition that COPD and smoking can alter the response to asthma therapies may be important. Smoking can blunt the response to ICS. Further, it has been difficult to demonstrate the effectiveness of biologic agents targeted at type 2 inflammation in patients with COPD despite the presence of ≥ 300 circulating eosinophils/ μL . Additionally, in patients with both diseases, earlier initiation of anticholinergics may be considered.

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■ FURTHER READING

CLOUTIER MM et al: 2020 focused updates to the asthma management guidelines: A report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group. *J Allergy Clin Immunol* 146:1217, 2020.

GLOBAL INITIATIVE FOR ASTHMA: 2020 GINA Report, global strategy for asthma management and prevention. <https://ginasthma.org/gina-reports/>.

ISRAEL E, REDDEL HK: Severe and difficult-to-treat asthma in adults. *N Engl J Med* 377:965, 2017.

KAUR R, CHUPP G: Phenotypes and endotypes of adult asthma: Moving toward precision medicine. *J Allergy Clin Immunol* 144:1, 2019.

ZAIDAN MF et al: Management of acute asthma in adults in 2020. *JAMA* 323:563, 2020.