

## **Reducing the Usage of Oral Corticosteroids in the Management of Asthma**

### **ToolKit: CLINICAL Conversation**

#### **Burden of OCS**

Resource	Address
Buhl R, Korn S, Menzies-Gow A, et al. Prospective, single-arm, longitudinal study of biomarkers in real-world patients with severe asthma. <i>J Allergy Clin Immunol Pract.</i> 2020;8:2630-2639.e6.	<a href="https://pubmed.ncbi.nlm.nih.gov/32304841/">https://pubmed.ncbi.nlm.nih.gov/32304841/</a>
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Gauthier M, Ray A, Wenzel SE. Evolving concepts of asthma. <i>Am J Respir Crit Care Med.</i> 2015;192:660-668.	<a href="https://pubmed.ncbi.nlm.nih.gov/26161792/">https://pubmed.ncbi.nlm.nih.gov/26161792/</a>
Peters MC, Mauger D, Ross KR, et al. Evidence for exacerbation-prone asthma and predictive biomarkers of exacerbation frequency. <i>Am J Respir Crit Care Med.</i> 2020;202:973-982.	<a href="https://pubmed.ncbi.nlm.nih.gov/32479111/">https://pubmed.ncbi.nlm.nih.gov/32479111/</a>
Price D, Castro M, Bourdin A, Fucile S, Altman P. Short-course systemic corticosteroids in asthma: Striking the balance between efficacy and safety. <i>Eur Respir Rev.</i> 2020;29:190151.	<a href="https://pubmed.ncbi.nlm.nih.gov/32245768/">https://pubmed.ncbi.nlm.nih.gov/32245768/</a>
Price DB, Trudo F, Voorham I, et al. Adverse outcomes from initiation of systemic corticosteroids for asthma: Long-term observational study. <i>J Asthma Allergy.</i> 2018;11:193-204.	<a href="https://pubmed.ncbi.nlm.nih.gov/30214247/">https://pubmed.ncbi.nlm.nih.gov/30214247/</a>
Sullivan Pw, Ghushchyan VH, Globe G, Schatz M. Oral corticosteroid exposure and adverse effects in asthmatic patients. <i>J Allergy Clin Immunol.</i> 2018;141:110-116.e7.	<a href="https://pubmed.ncbi.nlm.nih.gov/28456623/">https://pubmed.ncbi.nlm.nih.gov/28456623/</a>
Sweeney J, Patterson CC, Menzies-Gow A, et al. Comorbidity in severe asthma requiring systemic corticosteroid therapy: Cross-sectional data from the Optimum Patient Care Research Database and the British Thoracic Difficult Asthma Registry. <i>Thorax.</i> 2016;71:339-346.	<a href="https://pubmed.ncbi.nlm.nih.gov/26819354/">https://pubmed.ncbi.nlm.nih.gov/26819354/</a>
Tran TN, MacLachlan S, Hicks W, et al. Oral corticosteroid treatment patterns of patients in the United States with persistent asthma. <i>J Allergy Clin Immunol Pract.</i> 2021;9:338-346.e3.	<a href="https://pubmed.ncbi.nlm.nih.gov/32569754/">https://pubmed.ncbi.nlm.nih.gov/32569754/</a>
Volmer T, Effenberger T, Trautner C, Buhl R. Consequences of long-term oral corticosteroid therapy and its side-effects in severe asthma in adults: A focused review of the impact data in the literature. <i>Eur Respir J.</i> 2018;52:1800703.	<a href="https://pubmed.ncbi.nlm.nih.gov/30190274/">https://pubmed.ncbi.nlm.nih.gov/30190274/</a>
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## Biologic Management of Moderate-to-Severe Asthma

Resource	Address
Bacharier LB, Maspero JF, Katelaris CH, et al. Efficacy of dupilumab in children with asthma (LIBERTY ASTHMA EXCURSION): An open-label extension study. <i>Lancet Respir Med.</i> 2024;12:45-54.	<a href="https://pubmed.ncbi.nlm.nih.gov/37956679/">https://pubmed.ncbi.nlm.nih.gov/37956679/</a>
Bel EH, Wenzel SF, Thompson PJ, et al. Oral glucocorticoid-sparing effect of mepolizumab in eosinophilic asthma. <i>N Engl J Med.</i> 2014;371:1189-1197.	<a href="https://pubmed.ncbi.nlm.nih.gov/25199060/">https://pubmed.ncbi.nlm.nih.gov/25199060/</a>
Bleecker ER, FitzGerald JM, Chanez P, et al. Efficacy and safety of benralizumab for patients with severe asthma uncontrolled with high-dosage inhaled corticosteroids and long-acting $\beta_2$ -agonists (SIROCCO): A randomised, multicentre, placebo-controlled phase 3 trial. <i>Lancet.</i> 2016;388:2115-2127.	<a href="https://pubmed.ncbi.nlm.nih.gov/27609408/">https://pubmed.ncbi.nlm.nih.gov/27609408/</a>
Busse WW, Bleecker ER, FitzGerald MJ, et al. Long-term safety and efficacy of benralizumab in patients with severe, uncontrolled asthma: 1-year results from the BORA phase 3 extension trial. <i>Lancet Respir Med.</i> 2019;7:46-59.	<a href="https://pubmed.ncbi.nlm.nih.gov/30416083/">https://pubmed.ncbi.nlm.nih.gov/30416083/</a>
Castro M, Corren J, Pavord ID, et al. Dupilumab efficacy and safety in moderate-to-severe uncontrolled asthma. <i>N Engl J Med.</i> 2018;378:2486-2496.	<a href="https://pubmed.ncbi.nlm.nih.gov/29782217/">https://pubmed.ncbi.nlm.nih.gov/29782217/</a>
Castro M, Zangrilli J, Wechsler ME, et al. Reslizumab for inadequately controlled asthma with elevated blood eosinophil counts: Results from two multicentre, parallel, double-blind, randomised, placebo-controlled, phase 3 trials. <i>Lancet Respir Med.</i> 2015;3:355-366.	<a href="https://pubmed.ncbi.nlm.nih.gov/25736990/">https://pubmed.ncbi.nlm.nih.gov/25736990/</a>
Cinqair® (reslizumab). Prescribing information. Teva Respiratory, LLC; 2020.	<a href="https://www.cinqair.com/globalassets/cinqair/prescribinginformation.pdf">https://www.cinqair.com/globalassets/cinqair/prescribinginformation.pdf</a>
Dupixent® (dupilumab). Prescribing information. Regeneron Pharmaceuticals, Inc; 2024.	<a href="https://www.regeneron.com/downloads/dupixent_fpi.pdf">https://www.regeneron.com/downloads/dupixent_fpi.pdf</a>
Fasenra® (benralizumab). Prescribing information. AstraZeneca; 2021.	<a href="https://den8dhaj6zs0e.cloudfront.net/50fd68b9-106b-4550-b5d0-12b045f8b184/3647bed4-ce91-4fe7-9bc5-32dbee73f80a/3647bed4-ce91-4fe7-9bc5-32dbee73f80a_viewable_renditionv.pdf">https://den8dhaj6zs0e.cloudfront.net/50fd68b9-106b-4550-b5d0-12b045f8b184/3647bed4-ce91-4fe7-9bc5-32dbee73f80a/3647bed4-ce91-4fe7-9bc5-32dbee73f80a_viewable_renditionv.pdf</a>
Global Initiative for Asthma. 2023 GINA Main Report, Global Strategy for Asthma Management and Prevention. Updated July 10, 2023.	<a href="https://ginasthma.org/2023-gina-main-report/">https://ginasthma.org/2023-gina-main-report/</a>
Global Initiative for Asthma. Diagnosis and Management of Difficult-to-Treat & Severe Asthma.	<a href="https://ginasthma.org/severeasthma/">https://ginasthma.org/severeasthma/</a>
Israel E, Reddel HK. Severe and difficult-to-treat asthma in adults. <i>N Engl J Med.</i> 2017;377:965-976.	<a href="https://pubmed.ncbi.nlm.nih.gov/28877019/">https://pubmed.ncbi.nlm.nih.gov/28877019/</a>
Khatri S, Moore W, Gibson PG, et al. Assessment of the long-term safety of mepolizumab and durability of clinical response in patients with severe eosinophilic asthma. <i>J Allergy Clin Immunol.</i> 2019;143:1742-1751.e7.	<a href="https://pubmed.ncbi.nlm.nih.gov/30359681/">https://pubmed.ncbi.nlm.nih.gov/30359681/</a>
Menzies-Gow A, Corren J, Bourdin A, et al. Tezepelumab in adults and adolescents with severe, uncontrolled asthma. <i>N Engl J Med.</i> 2021;384:1800-1809.	<a href="https://pubmed.ncbi.nlm.nih.gov/33979488/">https://pubmed.ncbi.nlm.nih.gov/33979488/</a>
Nair P, Wenzel S, Rabe KF, et al. Oral glucocorticoid-sparing effect of benralizumab in severe asthma. <i>N Engl J Med.</i> 2017;376:2448-2458.	<a href="https://pubmed.ncbi.nlm.nih.gov/28530840/">https://pubmed.ncbi.nlm.nih.gov/28530840/</a>

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Ortega HG, Liu MC, Pavord ID, et al. Mepolizumab treatment in patients with severe eosinophilic asthma. <i>N Engl J Med</i> . 2014;371:1198-1207.	<a href="https://pubmed.ncbi.nlm.nih.gov/25199059/">https://pubmed.ncbi.nlm.nih.gov/25199059/</a>
Rabe KF, Nair P, Brusselle G, et al. Efficacy and safety of dupilumab in glucocorticoid-dependent severe asthma. <i>N Engl J Med</i> . 2018;378:2475-2485.	<a href="https://pubmed.ncbi.nlm.nih.gov/29782224/">https://pubmed.ncbi.nlm.nih.gov/29782224/</a>
Tezpire® (tezepelumab-ekko) Prescribing information. AstraZeneca; 2023.	<a href="https://den8dhaj6zs0e.cloudfront.net/50fd68b9-106b-4550-b5d0-12b045f8b184/e306dc06-d580-4457-b15f-9f28545ad63a/e306dc06-d580-4457-b15f-9f28545ad63a_viewable_renditionv.pdf">https://den8dhaj6zs0e.cloudfront.net/50fd68b9-106b-4550-b5d0-12b045f8b184/e306dc06-d580-4457-b15f-9f28545ad63a/e306dc06-d580-4457-b15f-9f28545ad63a_viewable_renditionv.pdf</a>
Wechsler ME, Ford LB, Maspero JF, et al. Long-term safety and efficacy of dupilumab in patients with moderate-to-severe asthma (TRAVERSE): An open-label extension study. <i>Lancet Respir Med</i> . 2022;10:11-25.	<a href="https://pubmed.ncbi.nlm.nih.gov/34597534/">https://pubmed.ncbi.nlm.nih.gov/34597534/</a>
Xolair® (omalizumab). Prescribing information. Genentech, Inc; 2023.	<a href="https://www.gene.com/download/pdf/xolair_prescribing.pdf">https://www.gene.com/download/pdf/xolair_prescribing.pdf</a>

## Referral Strategies

Resource	Address
Beekman M, Hales J, Al-Amoud M, Del Olmo R, Tan TL. Breaking the vicious circle—the Asthma Referral Identifier (ReferID) tool. <i>NPJ Prim Care Respir Med</i> . 2022;32:40.	<a href="https://www.nature.com/articles/s41533-022-00296-6">https://www.nature.com/articles/s41533-022-00296-6</a>
Blakey JD, Gayle A, Slater MG, Jones GH, Baldwin M. Observational cohort study to investigate the unmet need and time waiting for referral for specialist opinion in adult asthma in England (UNTWIST asthma). <i>BMJ Open</i> . 2019;9:e031740.	<a href="https://pubmed.ncbi.nlm.nih.gov/31753883/">https://pubmed.ncbi.nlm.nih.gov/31753883/</a>
Global Initiative for Asthma. Diagnosis and Management of Difficult-to-Treat & Severe Asthma.	<a href="https://ginasthma.org/severeasthma/">https://ginasthma.org/severeasthma/</a>
Kallis C, Morgan A, Fleming L, Quint JK. Prevalence of poorly controlled asthma and factors associated with specialist referral in those with poorly controlled asthma in a paediatric asthma population. <i>J Asthma Allergy</i> . 2023;16:1065-1075.	<a href="https://pubmed.ncbi.nlm.nih.gov/37808460/">https://pubmed.ncbi.nlm.nih.gov/37808460/</a>

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