Highlights From the European Respiratory Society Congress 2023: Chronic Obstructive Pulmonary Disease and Severe Asthma

This congress review is based on sessions that took place at the European Respiratory Society (ERS) International Congress 2023, held between 9th–13th September 2023, in Milan, Italy

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Disclaimer:	For mepolizumab; respiratory syncytial virus (RSV) vaccine (recombinant, adjuvanted); herpes zoster vaccine (recombinant, adjuvanted); diphtheria, tetanus, and pertussis (acellular, component) vaccine (adsorbed, reduced antigen[s] content); influenza split vaccine (inactivated); and fluticasone furoate/umeclidinium/vilanterol inhalation powder prescribing information, please navigate to the appendix at the end of the article.
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Meeting Summary

At the 2023 European Respiratory Society (ERS) International Congress, a significant part of the scientific discussion revolved around asthma and chronic obstructive pulmonary disease (COPD), with multiple abstracts and sessions dedicated to advances in targeted treatments, prevention, and care plans for these patient groups. Clinical remission was one of the key topics in the severe asthma (SA) sessions, with a focus on its definition, patient outcomes, and perceptions. Additionally, biological treatments, their affected pathways, and their role in helping patients achieve remission were central to these discussions. For COPD, much of the scientific dialogue centred around the updated Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines, which classify patients according to the number of exacerbations, dyspnoea, and functional assessment, and suggest personalised treatment. Such treatments were the focus of numerous talks and

posters, as evidence is mounting on the use of single inhaler triple therapy in patients with COPD and ≥2 moderate exacerbations or ≥1 leading to hospitalisation, with a positive impact on symptoms and quality of life (QoL). Exacerbation prevention was also a notable topic, as patients with COPD and asthma are more susceptible to infections, often leading to exacerbations, and are at higher risk of complications, hospitalisations, and death. Vaccination against vaccine-preventable diseases was recommended as a key cornerstone in the management of respiratory patients, and the importance of increasing awareness, access, and uptake of these vaccines was stressed.

Ambitious Treatment Goals in Severe Asthma and the Role of IL-5

Clinical Remission

Clinical remission as a multicomponent treatment goal garnered significant attention at ERS 2023. For patients with SA, a four-component definition of clinical remission over ≥12 months includes symptom control, stable lung function, zero exacerbations, and zero oral corticosteroid (OCS) use.[1,2] Patients' views regarding clinical remission, along with treatment goals, mirror this healthcare professional (HCP)-driven definition, with more weight placed on zero lung deterioration, hospitalisations, or exacerbations. To make clinical remission more achievable, patients express a wish that their care includes 'more information on treatment goals', 'quicker treatment adaptation', and 'quicker referral to a specialist'. This highlights how HCPs can best inform and collaborate with patients to increase their probabilities of achieving clinical remission.[3]

Asthma Therapy and Clinical Remission

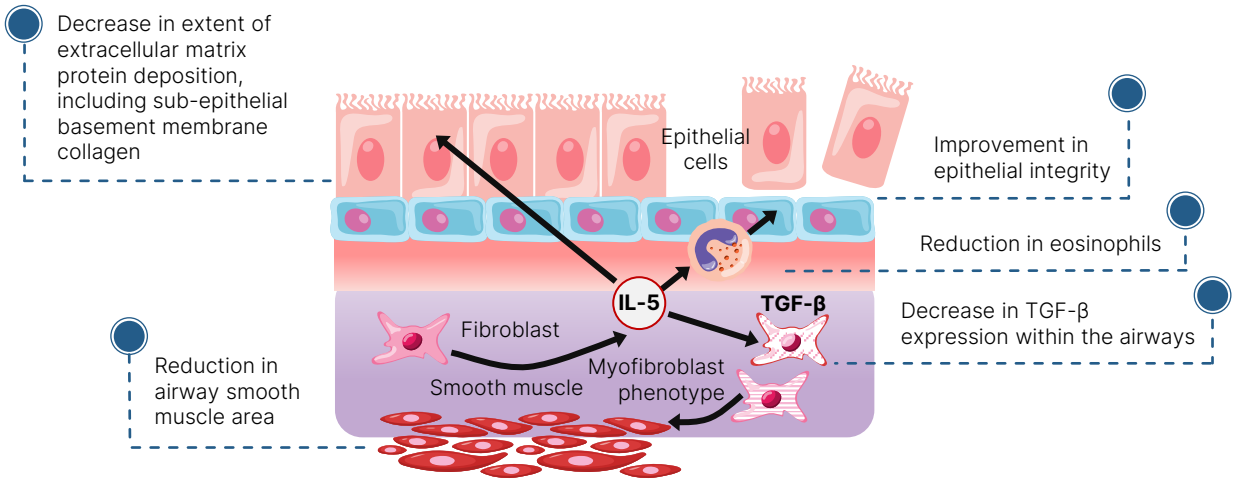
Targeted biological treatments may help patients with SA achieve clinical remission. A study including registry data from 23 countries showed that, among patients with SA receiving a biologic treatment, there was a 17% reduction in the odds of achieving remission for every additional exacerbation per year before biologic treatment; a 22% reduction in odds of remission for every 10 years increase in asthma duration; and a 22% increase in odds of remission for every 5% increase in percent predicted forced expiratory volume in 1 second (FEV_1) from pre-biologic treatment.[4]

Earlier, rather than delayed, use of biologic treatment should be considered for patients with SA, as the likelihood of achieving clinical remission is higher in patients with higher lung function; better asthma symptom scores; fewer exacerbations; and lower exposure to, or reliance on, OCS.[4,5] These findings were confirmed in a real-world, retrospective observational study including medical data from the 12 months prior to initial prescription of the IL-5-targeting monoclonal antibody (mAb) mepolizumab. The authors proposed that these findings support the idea of "initiating treatment at an earlier stage in disease development to prevent the pathway of severe disease or disease worsening."[6] However, while a European study found that 75% of 1,025 patients evaluated would be eligible for biologic treatment,[7] a UK-based study found that only 20% of eligible patients were initiated on such therapy.[8]

IL-5

In patients with asthma, there is positive correlation between FEV_1 decline and increasing levels of the cytokine IL-5 and sputum eosinophils.[9] IL-5 is essential for eosinophil maturation, activation, migration, and survival.[10] These cells can migrate to inflamed respiratory tissue and promote airway inflammation and remodelling,[10,11] as well as mucus plug formation in patients with asthma.[12] A broader role for IL-5 beyond eosinophils has been demonstrated, with implications evidenced on mast cells, plasma cells, fibroblasts, and ciliated epithelial cells.[13] As such, IL-5 has a potential impact on epithelial barrier dysfunction, airway remodelling, and disease progression. For example, stimulation of IL-5 receptors in human bronchial epithelial cells may alter epithelial barrier integrity.[14] Targeting IL-5 may, therefore, have additional positive effects within airways, as shown in Figure 1.[11,14-16] Indeed, in a study including patients with chronic rhinosinusitis with nasal polyps (CRSwNP),

Figure 1: IL-5 inhibition impacts airway wall remodelling in severe asthma through multiple mechanisms.[11,14-16]



TGF-β, transforming growth factor β.

treatment with an anti-IL-5 antibody restored the epithelial cell barrier.[13]

IL-5 Targeting Therapy

Several posters and presentations at ERS 2023 discussed studies of mAbs against IL-5. With a focus on lung function, studies have found that add-on anti-IL5 therapy can reduce the rate of FEV_1 decline,[17] or even lead to significant improvements in FEV_1, with sustained improvement in those who respond to treatment.[18]

REALITI-A was a large, international, real-world observational cohort study with the anti-IL-5 mAb mepolizumab[19] in patients with SA with an eosinophilic phenotype. While at baseline, 2% of patients (4 out of 214) were in clinical remission (defined as being OCS-, exacerbation-, and symptom-free), at Week 52 of treatment, 29% of patients (61 out of 214) achieved this three-component definition of clinical remission. At Week 104, 33% of patients (60 out of 184) achieved clinical remission, compared with 1% (2 out of 184) of this cohort at baseline.[20] Remission with mepolizumab, for all definitions, was not dependent on use or dose of maintenance OCS at baseline,[21] or the presence of comorbidities, including COPD, depression/anxiety, or CRSwNP.[22]

In the open-label, long-term extension study COLUMBA, patients received mepolizumab for up to 238 weeks. Here, mean prebronchodilator FEV_1 values increased from baseline for the first 24 weeks, and remained above baseline for around 200 weeks. The decline in lung function observed thereafter was at the level of that observed in the general population as individuals age.[23] Another study showed that treatment with mepolizumab for up to 6.4 years was generally well-tolerated, with a favourable benefit-risk profile.[24]

In addition to symptom evaluation following mepolizumab therapy, some studies have examined biological changes and airway remodelling. The prospective observation study MESILICO evaluated effects of 12 months' therapy in late-onset SA with an eosinophilic phenotype. Along with showing significantly improved FEV_1 and forced vital capacity (both $p<0.001$), there were significant reductions in airway smooth muscle area ($p=0.004$) and reticular basement membrane collagen thickness ($p<0.001$), and significant improvement in bronchial epithelial integrity ($p<0.001$). The

authors concluded that the results were consistent with a disease modification effect of mepolizumab.[25] Another study, where mepolizumab was administered for 32 weeks, showed significant decreases from baseline in number and activation of circulating eosinophils ($p<0.05$), and a change in eosinophil phenotype from inflammatory to resting. Many changes were shown from Week 4.[26]

Taken together, these studies show the broader effects of IL-5 on tissue remodelling, epithelial integrity, and FEV_1, and support the utility of anti-IL-5 therapies for people with SA, and the use of IL-5 inhibition in long-term lung function maintenance.

Comorbidities of Asthma and Other Respiratory Conditions

Asthma frequently occurs with comorbidities, with CRSwNP being prominent, given the common pathophysiology of airways.[27] Biologics may be considered for people with CRSwNP whose disease is not controlled with surgery or corticosteroids,[28] with one meta-analysis of several biologics showing they were all favoured over placebo,[29] and another showing their effects were equivalent, or favourable, to endoscopic sinus surgery, with regard to symptoms and the need for remedial surgery at 1 year.[30]

Small airway disease (SAD) is a key feature for many patients with asthma, with prevalence estimated to be between 50–60%.[31] In a longitudinal observation study of 12 patients with asthma who received mepolizumab treatment, 10 out of 12 had SAD at baseline. Following 6 months' treatment, this was reduced to 7 out of 12 patients ($p=0.035$). While 9 out of 12 patients experienced ≥1 exacerbation at baseline, at 6 months this was shown in 2 out of 12 patients ($p=0.004$). The authors concluded that, compared with the baseline, "our findings support a significant benefit of mepolizumab on SAD, paralleled by considerable improvement in lung function and asthma control."[32]

Chronic Obstructive Pulmonary Disease

Another focus of ERS 2023 was COPD, and especially patients at risk for exacerbations, as they have higher mortality rates[33] and higher healthcare system utilisation.[34] Identification of such at-risk patients can be achieved through assessment of not only exacerbation history,[34-36] but also eosinophil count, comorbidities, symptom burden, and lung function.[35,36]

Chronic Obstructive Lung Disease 2023 Global Initiative for Chronic Obstructive Lung Disease Guidelines

One ERS 2023 session discussed GOLD 2023 guideline recommendations, which have been updated to recognise the heterogeneity of COPD causes, refine the definition and classification of severity of COPD exacerbations, and provide guidance regarding treatment pathways. According to these guidelines, care for people with COPD should be co-ordinated, and involve a multidisciplinary team (MDT) for not only initial diagnosis, assessment, and treatment, but also for follow-up symptom and treatment reviews.[34]

Therapy for Patients with Chronic Obstructive Pulmonary Disease

According to GOLD guidelines, COPD pharmacotherapy goals include maximising treatment efficacy in regard to reducing symptoms and exacerbations, while minimising safety concerns. For treatment recommendations, the guidelines stratify patients into three groups.[34] For Group A (0–1 moderate exacerbations; modified Medical Research Council Dyspnoea Scale score [mMRC]: 0–1; COPD Assessment Test [CAT] level: <10), patients should initially be offered short- or long-acting bronchodilator treatment, based on effect on breathlessness. Long-acting treatment may be with either a long-acting β_2-agonist (LABA), or a long-acting muscarinic antagonist (LAMA). For patients with persistent exacerbations on mono bronchodilator therapy, escalation to LABA+LAMA is recommended, with a note that single inhaler therapy may be more convenient and effective than multiple inhalers.[34]

For Group B (0–1 moderate exacerbations; mMRC: ≥2; CAT: ≥10), LAMA+LABA dual therapy is now the preferred initial therapy choice,[34] as it is more effective at reducing exacerbations than LAMA alone.[37] For Group E (combining previous GOLD groups C/D; ≥2 moderate exacerbations or ≥1 leading to hospitalisation; any mMRC or CAT

score), LAMA+LABA dual therapy is the preferred choice.[34] In symptomatic patients with COPD, the UK-based AERISTO trial of LAMA+LABA showed advantages, in terms of quality-adjusted life years and drug and healthcare costs, for a umeclidinium/vilanterol[38] combination versus a glycopyrrolate/formoterol fumarate[39] combination.[40,41]

For patients who develop further exacerbations despite LABA+LAMA, triple therapy can be considered if blood eosinophil count ≥100 /mL. If blood eosinophils <100 /mL, and for patients on triple therapy, the addition of roflumilast (for patients with chronic bronchitis and FEV_1 <50% of predicted) or azithromycin (in non-smokers) can be made. Inhaled corticosteroids (ICS) should not be used as single therapy, and combinations with such should not be used in people with repeated pneumonia infections; blood eosinophils <100 cells/mL; and a history of mycobacterial infection.[34]

Single Device Triple Therapy for Chronic Obstructive Pulmonary Disease

Several studies have found better efficacy of ICS+LAMA+LABA triple therapy over dual therapy in terms of COPD symptoms, exacerbation rates, health-related QoL, and relative reduction of mortality.[42,43] Studies also show lower annual rates of severe exacerbations and hospital admissions when triple therapy is prescribed shortly after an exacerbation, as opposed to it being delayed.[44] In a UK-based study, patients with COPD who are new users of ICS+LAMA+LABA triple therapy had greater breathlessness, poorer lung function, and more past exacerbations at therapy start, compared with ICS+LABA or LAMA+LABA dual therapy initiators.[45]

Studies also point to the utility of triple therapy delivered via a single inhaler,[46-49] with GOLD guidelines suggesting that, whether dual or triple therapy, a fixed-dose single inhaler may be more convenient and effective than multiple inhalers.[34] Real-world and Phase IV open-label studies of such therapy, compared with using multiple inhalers, show significantly higher change from baseline in FEV_1,[46] and better adherence ($p<0.001$ for both).[47] Long-term adherence has also been shown to be better when patients with COPD are initiated on single-inhaler triple[48] or dual therapy,[49] compared with multiple inhaler therapy.

Errors in inhaler use, including critical ones, are high in patients with COPD, which can affect treatment efficacy.[50] Ease of use of an inhaler is related to its design, to patient belief about the use of the medication, and to a patient's ability to remember to use the device as prescribed.[34,51] As such, teaching patients about correct device use and the need for adherence is vital.

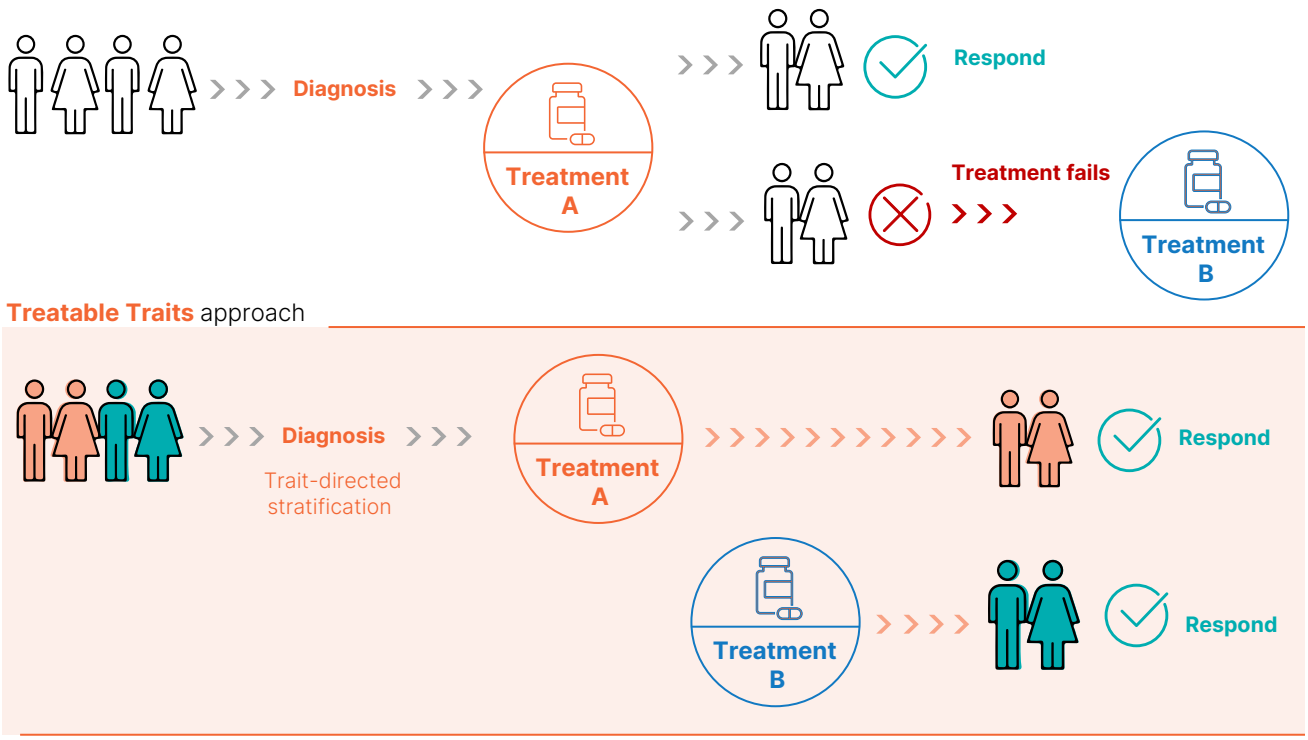
The Treatable Traits Approach to Chronic Obstructive Pulmonary Disease and Asthma Management

A European survey showed that patients with COPD delayed seeking medical advice, and believed that HCPs underestimated the impact of their symptoms. HCPs reported difficulties in finding the right treatment for some of their patients with COPD.[52] Such findings indicate that a concerted approach is needed to help both patients with COPD and SA reach clinical goals. Such an approach includes using 'Treatable Traits' (TT).[53] This involves a personalised approach to disease assessment and treatment, so that targeted management can be delivered according to an individual's underlying disease, not just the diagnostic label (Figure 2).[54-56]

TTs should be clinically relevant, identifiable, measurable, and treatable, as well as taking into account any comorbidities.[55,56] They are identified and measured using multidimensional assessments, to arrive at an individualised care plan.[55] Ongoing assessment is necessary, as TTs can change over time.[57] Of note, the GOLD guidelines suggest a TT approach to COPD, highlighting a key role for persistent dyspnoea and exacerbations, as well as taking into account individual social and behavioural risk factors.[34]

Early identification of TTs can be instrumental to foster a more proactive approach to respiratory disease management, and timelier bio-intervention before airway remodelling occurs. Biomarkers are becoming key for identifying clinical phenotypes, predicting patient risk, understanding TTs, and reducing delays to bio-initiation.[58] For SA, ORACLE is one tool that can help HCPs predict risk and treatment outcomes

Figure 2: The 'Treatable Traits' approach to patient care.[53]



for patients. It takes into consideration blood eosinophil count, fractional exhaled nitric oxide levels, asthma attack occurrence, and clinical risk factors for exacerbations.[59]

The TT approach is best provided by an MDT. For example, the Australian 'Newcastle Model' includes clinics and programmes centred on pulmonary rehabilitation, drug administration, integrated research, rapid access, and management plans.[60] A similar MDT care pathway in the Netherlands has been shown to reduce the number of hospitalisations for people with COPD.[61]

Vaccinations for Patients with Chronic Obstructive Pulmonary Disease and Asthma

A key aspect of respiratory disease management is to prevent exacerbations and subsequent poor clinical outcomes due to lung function decline.[34] Infections have a significant burden on patients with chronic respiratory diseases, and are a main cause of COPD and asthma exacerbations, which can lead to hospitalisation and higher mortality rates.[34,62-64] Studies show that patients with respiratory conditions are at increased risk of infections and associated complications. For example, patients with COPD or asthma are at approximately 1.41-times and approximately 1.24-times increased relative risk of herpes zoster, respectively, compared with the general population.[62] There is also a higher healthcare burden, and a higher risk of hospitalisations and complications, such as post-herpetic neuralgia.[63,64] Similarly, patients with COPD are also at approximately 2.5-times, and patients with asthma at approximately 3.9-times, higher risk of developing pertussis compared with people without these conditions, respectively.[65]

Accordingly, vaccinations against vaccine-preventable infections are recommended

for patients with respiratory diseases.[34,66] Vaccinations for patients with COPD recommended by GOLD guidelines include those against herpes zoster; influenza; COVID-19; pneumococcus; and, as the Tdap combined vaccination, tetanus, diphtheria, and pertussis. Similar recommendations can be found for patients with asthma, with an emphasis on influenza and COVID-19.[67-69]

Efficacy of such vaccinations have shown to be maintained in people with respiratory diseases. For example, a post hoc analysis of data from recombinant zoster vaccine studies showed that the efficacy in patients with asthma or other respiratory conditions was consistent with the overall population, whereby the vaccine demonstrated 97.2% (95% confidence interval [CI]: 93.7–99.0) efficacy in the prevention of herpes zoster in adults aged ≥50 years.[70] Similarly, in adults aged ≥18 years old (YO) vaccinated with Tdap, no differences were found in seroprotection and booster response rates within 1 month of vaccination between patients treated for an obstructive airways disease and the general population.[71] There were also new developments discussed at ERS 2023 occurring in the fields of vaccination against pneumococcal pneumonia,[72] where hospitalisation is especially a risk for older adults (OA) ≥65 YO,[73] and for influenza.[72,74,75]

Despite vaccines being recommended for patients with chronic respiratory diseases, vaccination coverage for at-risk and older adults is often below target,[76] with acceptance of some vaccinations still low among patients with chronic medical conditions, including chronic lung diseases.[77] Barriers for vaccine uptake among patients include low awareness of disease burden, susceptibility, and severity; low understanding of the efficacy, safety, and benefits of relevant vaccines;[78,79] and not being aware of their vaccination eligibility.[79] Although data clearly suggest that HCP recommendation to vaccinate is a key driver for patients,[80] one study found that vaccination recommendations rarely came from a specialist,[81] and another reported absence of advice from a patient's doctor.[82] This may be due to either limited time during a consultation, or to an HCP's uncertainty regarding who is responsible for vaccine recommendation.[83] Consequently, respiratory specialists and MDTs need support to implement recommended vaccinations for patients with respiratory diseases. This may best be provided via an integrated approach to respiratory care, such as with the models discussed above.[60,61]

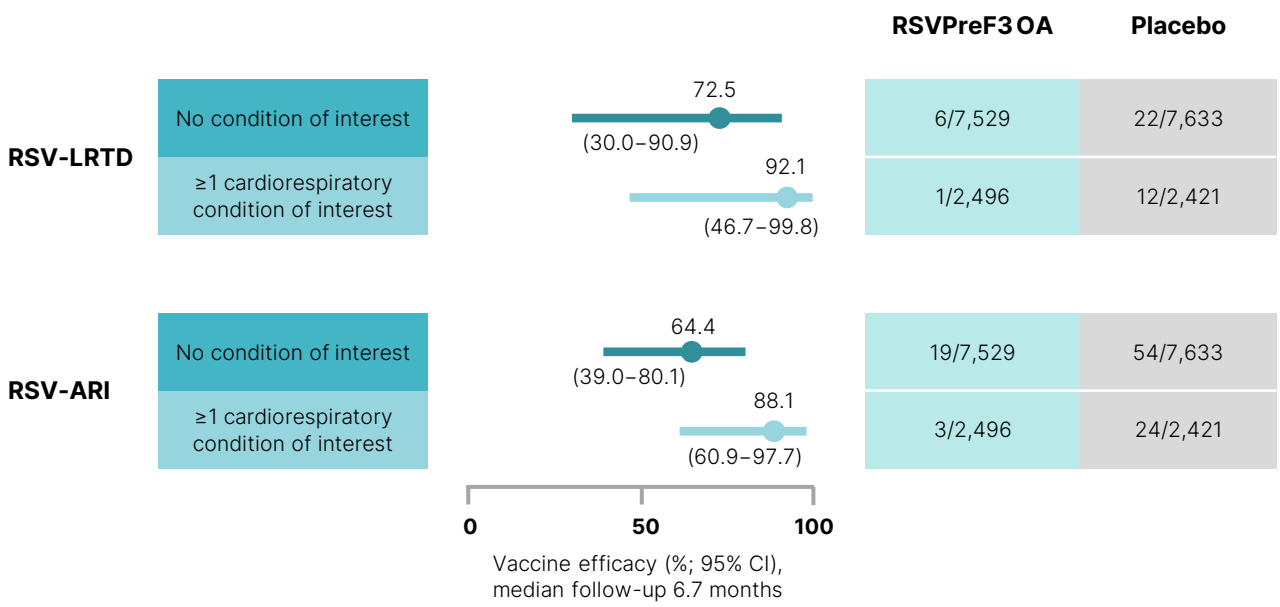
Respiratory Syncytial Virus Vaccination

OA ≥60 YO, especially those with cardiopulmonary comorbidities, are at particular risk of severe respiratory syncytial virus (RSV) infection and subsequent complications. This may be due to the decline in immune function associated with advancing age impacting a person's ability to combat RSV infection.[84-86] A Spanish retrospective observational database study showed that estimated incidence rate (IR) of RSV attributable hospitalisations/100,000 person-years between 2016–2019 was 114.5–130.9 in those aged 60–79 YO, and greatly increased in those aged ≥80 YO (683.6–776.9). In these age groups, RSV represented up to 6.1% and 9.5% of all RSV infection-attributable respiratory hospitalisations, respectively.[87] Further, a German retrospective observational database study showed that estimated IR/100,000 person-years for hospitalisation due to RSV between 2015–2019 was 300.3–460.9 in adults ≥60 YO, and 621.9–930.9 in adults ≥75 YO if they had any risk factor (not specified), compared with an IR of 58.1–78.1 for adults ≥60 YO, and 258.8–380.4 for adults ≥75 YO without risk factors.[88]

RSV infection is a particular concern for patients with chronic respiratory diseases. A USA-based study showed that respective hospitalisation rates for RSV were 3.2–13.4 and 2.0–3.6 times higher in adults (≥18 YO) with COPD or asthma versus those without these conditions.[89] One UK study found that RSV was associated with 7.4% of COPD exacerbations in 177 patients, and although RSV-related exacerbations were shorter in duration compared with non-RSV exacerbations (10.3 versus 20.48 days; $p<0.05$), severity was similar, according to markers such as fibrinogen level, C-reactive protein, white blood cell count, and FEV_1 change.[90]

Currently, two vaccines for prevention of RSV lower respiratory tract disease (LRTD) are approved for use in adults aged ≥60 years by the United States Food and Drug Administration (FDA)[91] and the European Medicines Agency (EMA).[92,93]

Figure 3: RSVPreF3 OA was efficacious against first occurrence of respiratory syncytial virus-lower respiratory tract disease and respiratory syncytial virus-acute respiratory illness in participants with cardiorespiratory conditions.[95]



CI: confidence interval; OA: older adults; RSV-ARI: respiratory syncytial virus-acute respiratory illness; RSV-LRTD: respiratory syncytial virus-lower respiratory tract disease.

GSK's (London, UK) recombinant, adjuvanted RSV vaccine RSVPreF3 OA▼ is indicated for prevention of RSV-associated LRTD in adults aged ≥60 YO.[92] Efficacy and safety of this vaccine is being evaluated in the AReSVi-006 Phase III trial, where participants are followed for three consecutive RSV seasons. This trial includes 24,966 adults ≥60 YO randomly assigned in a 1:1 ratio to receive RSVPreF3 OA (n=12,467) or placebo (n=12,499). At the end of the first season (2021–2022), the RSVPreF3 OA group were re-randomised in a 1:1 ratio to receive either a second RSVPreF3 OA dose or placebo.[94]

The primary endpoint of AReSVi-006 was to demonstrate efficacy of a single dose of RSVPreF3 OA against RSV-LRTD during the first RSV season in adults ≥60 YO. The vaccine successfully met this endpoint, demonstrating an overall efficacy of 82.6% (95% CI: 57.9–94.1) in preventing RSV-LRTD, with seven cases (1.0/1000 participant-years) in the vaccine group, and 40 cases (5.8 /1,000 participant-years) in the placebo group. RSVPreF3 OA was generally well tolerated, with the most commonly reported adverse events including injection site pain, fatigue, myalgia, headache, and arthralgia. Most of those solicited reactions were of mild or moderate intensity, and resolved within a mean duration of 1 or 2 days. Incidences of potential immune-mediated diseases and serious adverse events were low, and balanced between groups.[94]

A post hoc analysis of RSVPreF3 OA included participants with ≥1 coexisting cardiorespiratory condition, including COPD, asthma, any chronic respiratory or pulmonary disease, or chronic heart failure. As shown in Figure 3, vaccine efficacy was 92.1% (95% CI: 46.7–99.8) against first RSV-LRTD occurrence, and 88.1% (95% CI: 60.9–97.6) for prevention of RSV-acute respiratory illness. Vaccine efficacy was observed to be higher in this cohort than in participants without a comorbidity of interest. Based on these results, the authors concluded that RSVPreF3 OA is efficacious against RSV-LRTD and RSV-acute respiratory illness in ≥60 YO with cardiorespiratory conditions, a population who may benefit the most from protection against RSV due to their increased risk of severe disease.[95]

Conclusion

Treatment goals for patients with asthma include prevention of exacerbations or hospitalisations, and retainment of current lung function.[3] Biologic therapy, such as with mepolizumab, may help patients achieve these goals.[18,20,25] Such therapy is especially associated with likelihood of remission if prescribed when asthma severity is lower.[4-6]

For patients with COPD, updated GOLD guidelines classify them according to number of exacerbations, dyspnoea, and functional assessment, and suggest treatments accordingly. One such treatment is ICS+LAMA+LABA triple therapy,[34] with a number of studies finding the utility of such treatment when delivered via a single device, in terms of exacerbations, symptom control, and patient QoL.[42,43]

For patients with COPD and asthma, infections are more common, can exacerbate symptoms, and can lead to higher risk of complications, hospitalisations, and mortality.[34,62-64,96] As such, vaccinations available for preventable infections are recommended.[34,66] To move from recommendations to actual vaccination and protection, barriers blocking vaccine uptake should be lifted via education and awareness around burden of the respective infectious diseases, and the value of vaccination.[78,79]

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PM-GBL-RSA-ADVR-230001 | October 2023

Nucala (mepolizumab) Prescribing information Great Britain (GB)

(Please consult the full Summary of Product Characteristics for Great Britain [SmPC GB] before prescribing)

Presentation: *Nucala (mepolizumab) solution for injection in pre-filled pen. Each 1 ml pre-filled pen contains 100 mg mepolizumab. Nucala solution for injection in pre-filled syringe. Available as 100 mg solution for injection in a pre-filled syringe. Each 1 ml pre-filled syringe contains 100 mg mepolizumab. Available as 40 mg solution for injection in pre-filled syringe. Each 0.4 mL pre-filled syringe contains 40 mg of mepolizumab. Nucala powder for solution for injection.* Each vial contains 100 mg mepolizumab. After reconstitution, each 1 ml of solution contains 100 mg mepolizumab. **Indication: Severe eosinophilic asthma:** Indicated as an add-on treatment for severe refractory eosinophilic asthma in adults, adolescents, and children aged 6 years and older. **Chronic rhinosinusitis with nasal polyps (CRSwNP):** Indicated as an add-on therapy with intranasal corticosteroids for the treatment of adult patients with severe CRSwNP for whom therapy with systemic corticosteroids and/or surgery do not provide adequate disease control. **Eosinophilic granulomatosis with polyangiitis (EGPA):** Indicated as an add-on treatment for patients aged 6 years and older with relapsing-remitting or refractory eosinophilic granulomatosis with polyangiitis. **Hypereosinophilic syndrome (HES):** Indicated as an add-on treatment for adult patients with inadequately controlled hypereosinophilic syndrome without an identifiable non-haematologic secondary cause. **Posology and method of administration: Severe eosinophilic asthma:** Nucala should be prescribed by physicians experienced in the diagnosis and treatment of severe refractory eosinophilic asthma, CRSwNP, EGPA, or HES. **For severe refractory eosinophilic asthma:** Adults and adolescents aged 12 years and over: Recommended dose is 100 mg administered subcutaneously once every 4 weeks. *Children aged 6 to 11 years old:* Recommended dose is 40 mg administered subcutaneously once every 4 weeks. **For CRSwNP the recommended dose in adults is:** 100 mg of mepolizumab administered subcutaneously once every 4 weeks. **For EGPA the recommended dose for adults and adolescents aged 12 years and older** is 300 mg administered subcutaneously once every 4 weeks. Children aged between 6 and 11 years old: Children weighing ≥40 kg recommended dose is 200 mg administered subcutaneously once every 4 weeks. Children weighing <40 kg recommended dose is 100 mg administered subcutaneously once every 4 weeks. **HES recommended dose in adults is** 300 mg administered subcutaneously once every 4 weeks. Treatment is intended long-term and need for continued therapy should be considered at least annually. Administration is by subcutaneous injection only. *Powder for solution for injection:* Should be administered by a healthcare professional. Requires reconstitution. Each vial should be used for a single patient, and any remainder of the vial should be discarded. *Solution for injection in a pre-filled pen and pre-filled syringe (100 mg):* May be self-administered by the patient or administered by a caregiver if their healthcare professional determines it is appropriate, and patient/caregiver are trained in injection techniques. *Pre-filled syringe (40 mg)* must be administered by a healthcare professional or a caregiver. Please see package leaflet for instructions on administration. **Contraindications:** Hypersensitivity to the active substance or to any of the excipients. **Warnings and precautions:** Name and batch number of the administered product should be recorded in patient file. Not to be used to treat acute asthma exacerbations. Asthma-related adverse symptoms or exacerbations may occur during treatment. Abrupt discontinuation of corticosteroids after initiation of therapy is not recommended. Hypersensitivity and administration-related reactions have occurred following administration, generally within hours of administration, but in some instances, they may have a delayed onset (i.e. typically within several days). These reactions may occur for the first time after a long duration of treatment. Pre-existing helminth infections should be treated before commencing Nucala. If patients become infected and do not respond to anti-helminth treatment, temporary discontinuation of Nucala should be considered. Nucala has not been studied in patients with organ threatening or life-threatening manifestations of EGPA. Nucala has not been studied in patients with life-threatening

manifestations of HES **Special populations:** No dose adjustment is required in elderly patients, patients with hepatic impaired or patients with renal impairment with a CrCl 50-80ml/min. **Interactions with other medicinal products:** No interaction studies have been performed. Potential for interactions is considered low. **Fertility, pregnancy and breastfeeding:** Potential for harm to a human fetus is unknown. Preferable to avoid use during pregnancy. Administration should only be considered if the expected benefit to mother is greater than risk to fetus. No data on excretion of Nucala in human milk or on human fertility. **Side effects:** *Very Common (≥1/10):* Headache. *Common (≥1/100 to <1/10):* Lower respiratory tract infection, urinary tract infection, pharyngitis, hypersensitivity reactions (systemic allergic), nasal congestion, abdominal pain upper, eczema, back pain, administration related reactions (systemic non-allergic; most commonly including rash, flushing, myalgia), local injection site reactions, pyrexia. *Rare (≥1/10,000 to <1/1,000):* anaphylaxis. Please consult SmPC for further information on adverse reactions. **Legal category:** POM. **Presentation and Basic NHS cost:** Nucala 1 vial, 1 pre-filled pen, or 1 pre-filled syringe 100 mg - £840.00, or 1 pre-filled syringe 40 mg - £336.00. **Marketing authorisation (MA) numbers GB- [vial:** PLGB 19494/0285**; pre-filled pen:** PLGB 19494/0290**; prefilled-syringe 100 mg:** PLGB 19494/0291**; pre-filled syringe 40 mg:** PLGB 19494/0303**]** **MA holder: GB**- GlaxoSmithKline UK Limited 980 Great West Road Brentford Middlesex TW8 9GS United Kingdom **Last date of revision:** February 2023, PI-11333. Trademarks are owned by or licensed to the GSK group of companies. © 2018 GSK group of companies or its licensor Nucala.

Adverse events should be reported. Reporting forms and information can be found at https://yellowcard.mhra.gov.uk/ or search for MHRA Yellowcard in the Google Play or Apple App Store. Adverse events should also be reported to GlaxoSmithKline on 0800 221 441.

Influsplit Tetra 2023/2024:

Active substance: Influenza split vaccine (inactivated). **Composition:** 1 vaccine dose (0.5 ml) contains influenza virus (inactivated, split) of the following strains: A/ Victoria/**4897/2022** (H1N1)pdm09-like strain (A/ Victoria/**4897/2022**, IVR-238), A/ Darwin/9/2021 (H3N2)-like strain (A/ Darwin/6/2021, IVR-227), B/Austria/1359417/2021-like strain (B/Austria/1359417/2021, BVR-26), B/Phuket/3073/2013-like strain (B/ Phuket/3073/2013), B/Phuket/3073/2013-like strain (B/Phuket/3073/2013, BVR-26) strain (B/Phuket/3073/2013, wild type); 15 µg haemagglutinin per strain. Proliferated in embryonated chicken eggs. **Other ingredients:** Sodium chloride, sodium monohydrogen phosphate x 12 H2O, potassium dihydrogen phosphate, potassium chloride, magnesium chloride x 6 H2O, RRR- α - Tocopherol hydrogen succinate, polysorbate 80, octoxinol 10, and water for injections. **Indications:** Influsplit Tetra is used for the prevention of true viral flu (influenza) in adults and children aged 6 months and over, caused by viruses of the two influenza A subtypes and of the two influenza B lineages contained in the vaccine. **Contraindications:** Hypersensitivity to the to the active ingredients, to any of the other ingredients or to other trace ingredients of egg (ovalbumin, chicken protein), formaldehyde, gentamicin sulphate, and sodium deoxycholate. In febrile illnesses and acute infections, vaccination should be postponed to a later date. **Side effects: Children 6 to <36 months:** Very common: loss of appetite, irritability/excitement, drowsiness, pain/redness at the injection site. **Frequent:** fever (≥38.0 °C), swelling at the injection site. **Children 3 to <6 years: Very common:** Irritability/excitedness, pain/redness/swelling at the injection site. **Frequent:** loss of appetite, drowsiness, fever (≥38.0 °C), induration at the injection site. **Children 6 to <18 years: Very common:** Muscle pain, fatigue, pain/redness/swelling at the injection site. **Frequent:** headache, gastrointestinal symptoms, joint pain, fever (≥38.0 °C), chills, induration at the injection site. **Adults ≥18 Years: Very common:** muscle pain, pain at injection site, fatigue. **Frequent:** Headache, gastrointestinal symptoms, sweating, joint pain, redness/swelling/hardening at the injection site, chills, fever. **Prescription only.** Date: June 2023.

GlaxoSmithKline GmbH & Co. KG, 80700 Munich, Germany. de.gsk.com
If necessary, please direct reports of side effects to the GSK hotline: 0800-1223355.

Prescribing information- Great Britain

▼Arexvy Respiratory Syncytial Virus (RSV) vaccine (recombinant, adjuvanted)

Please refer to the appropriate Summary of Product Characteristics (SmPC) before prescribing Arexvy.

Presentation: Arexvy Respiratory Syncytial Virus (RSV) vaccine (recombinant, adjuvanted). Powder and suspension for suspension for injection. Arexvy powder is white, and the suspension is an opalescent, colourless to pale brownish liquid. **After reconstitution**, one dose, 0.5 mL contains: 120 micrograms of RSVPreF3 antigen with recombinant DNA technology adjuvanted with AS01$_E$ containing 25 micrograms plant extract *Quillaja saponaria* Molina, fraction 21 (QS-21) and 25 micrograms 3-O- desacyl-4'-monophosphoryl lipid A (MPL) from *Salmonella Minnesota*.

Indication: Active immunisation for the prevention of lower respiratory tract disease (LRTD) caused by respiratory syncytial virus in adults 60 years of age and older. The use of this vaccine should be in accordance with official recommendations.
Dosage and administration: A single dose of 0.5 mL is administered as an intramuscular injection only, preferably in the deltoid muscle. Arexvy must be reconstituted prior to administration (refer to Section. 6.6 on Arexvy SmPC for further information) The need for revaccination with a subsequent dose has not been established.
Contraindications: Hypersensitivity to the active substances or to any of the excipients (refer to Section 6.1 on Arexvy SmPC for further information).
Special warnings: Prior to immunisation, appropriate medical treatment and supervision should always be readily available in case of an anaphylactic event following the administration of the vaccine. Close observation for at least 15 minutes is recommended following vaccination. Administration of vaccine should be postponed in individuals suffering from an acute severe febrile illness. The presence of a minor infection, such as a cold, should not result in the deferral of vaccination. As with any vaccine, a protective immune response may not be elicited in all vaccinees. Anxiety-related reactions, including vasovagal reactions (syncope), hyperventilation, or stress-related reactions may occur in association with the vaccination process itself. It is important that precautions are in place to avoid injury from fainting. The vaccine is for prophylactic use only and is not intended for treatment of established clinical disease. **Precautions for use:** Do not administer the vaccine intravascularly or intradermally. No data are available on subcutaneous administration of Arexvy. As with other intramuscular injections, Arexvy should be given with caution to individuals with thrombocytopenia or any coagulation disorder since bleeding may occur following intramuscular administration to these individuals. Safety and immunogenicity data on Arexvy are not available for immunocompromised individuals. Patients receiving immunosuppressive treatment or patients with immunodeficiency may have a reduced immune response to Arexvy.
Interactions: Arexvy may be administered concomitantly with seasonal influenza vaccine (quadrivalent, standard dose, unadjuvanted, inactivated). In a randomised study in adults 60 years of age and older, the criteria for non-inferiority of the immune responses in the co-administration versus the separate administration group were met. However, numerically lower RSV A and B neutralising titres and numerically lower influenza A and B haemagglutination inhibition titres were observed when Arexvy and inactivated seasonal influenza vaccine were co-administered than when they were administered separately. The clinical relevance of this finding is unknown. There are no data on co-administration with high dose or adjuvanted seasonal influenza vaccines. If Arexvy is to be given at the same time as another injectable vaccine, the vaccines should always be administered at different injection sites. Concomitant administration of Arexvy with other vaccines has not been studied.
Effects on ability to drive and use machines: May have minor influence on the ability to drive and use machines. Some of the effects mentioned (Section 4.8 "undesirable effects" of the Arexvy SmPC) e.g., fatigue, may temporarily affect the ability to drive or use machines.
Fertility, Pregnancy, and breast-feeding: *Fertility:* No data on the effects of Arexvy on human fertility. *Pregnancy:* Arexvy is not recommended during pregnancy. *Breastfeeding/*

lactating: Arexvy is not recommended in breastfeeding/lactating women.
Undesirable effects: The most commonly reported adverse reactions were injection site pain, fatigue, myalgia, headache, and arthralgia. These adverse reactions were usually mild or moderate in intensity and resolved within a few days after vaccination. Adverse reactions are listed below by MedDRA system organ class and frequency. All *very common* (≥1/10) grade adverse reactions: headache, myalgia, arthralgia, injection site pain, fatigue, *Common* adverse reactions (≥1/100 to <1/10): injection site erythema, injection site swelling, fever, chills, *Uncommon* adverse reactions (≥1/1000 to <1/100): lymphadenopathy, hypersensitivity reactions (such as rash), nausea, abdominal pain, vomiting, injection site pruritis, pain, malaise. Refer to the SmPC for a full list of adverse events.
Overdose: Refer to SmPC. **Legal Category:** POM.
Presentation and basic NHS cost: Available in a pack size of 1 vial of powder plus 1 vial of suspension, 1 = £150 and in a pack size of 10 vials of powder plus 10 vials of suspension, 10 = £1500.
Marketing Authorisation Numbers: PLGB 19494/0316.
Marketing Authorisation Holder: GlaxoSmithKline UK Limited, 980 Great West Road, Brentford, Middlesex, TW8 9GS, United Kingdom. Arexvy is a trademark of the GlaxoSmithKline group of companies. *Full SmPC available from GSK Limited or from www.medicines.org.uk*
Date of preparation: August 2023
PI Job Bag Number: PI-12038

Adverse events should be reported. Reporting forms and information can be found at https://yellowcard.mhra.gov.uk/ or search for MHRA Yellow Card in the Google Play or Apple App Store. Adverse events should also be reported to GSK Limited on +44 (0) 800 221 441

Prescribing information - GB

Please consult the Summary of Product Characteristics (SPC) before prescribing

Shingrix Herpes zoster vaccine (recombinant, adjuvanted). Shingrix powder and suspension for suspension for injection. **Composition:** Following reconstitution, one 0.5ml dose contains 50 µg Varicella Zoster Virus glycoprotein E antigen adjuvanted with AS01B (containing 50 µg of *Quillaja saponaria* Molina, fraction 21 (QS-21) and 50 µg of 3-O-desacyl-4'-monophosphoryl lipid A (MPL).
Uses: Prevention of herpes zoster (HZ) and postherpetic neuralgia (PHN), in adults 50 years of age or older and adults 18 years of age or older at increased risk of HZ. Use of Shingrix should be in accordance with official recommendations.
Dosage and administration: Primary vaccination schedule consists of two doses of 0.5 ml each: an initial dose followed by a 2nd dose 2 months later. If flexibility is needed, second dose can be given between 2–6 months after the first. For those who are or might be immunodeficient/ immunocompromised and whom may benefit from a shorter schedule, the 2nd dose can be given 1–2 months after the initial dose. Shingrix is for IM administration only. Shingrix must be reconstituted prior to administration. The need for booster doses following the primary vaccination schedule has not been established.
Contra-indications: Hypersensitivity to the active substances or to any of the excipients.
Special warnings and precautions: Shingrix is not indicated for prevention of primary varicella infection. Prior to immunisation, appropriate medical treatment and supervision should always be readily available in case of an anaphylactic event following administration. Administration of the vaccine should be postponed in subjects suffering from an acute severe febrile illness. A protective response may not be elicited in all vaccinees. The vaccine is for prophylactic use only and is not intended for treatment of established clinical disease. Shingrix should not be administered intradermally or intravascularly. Subcutaneous administration is not recommended; and maladministration via this route may lead to an increase in transient local reactions. Shingrix should be given with caution to individuals with thrombocytopenia or any coagulation disorder since bleeding may occur following IM administration. Syncope (fainting) can occur following, or even before, any vaccination. This can be accompanied by neurological signs such as transient visual disturbance, paraesthesia, and tonic-clonic limb movements during recovery. In a post-marketing observational study, an increased risk of Guillain–Barré syndrome was observed during the 42 days following vaccination; available information is insufficient to determine a causal relationship. There are no safety, immunogenicity or efficacy data to support replacing a dose of Shingrix with a dose of another HZ vaccine. There are limited data to support the use of Shingrix in individuals with a history of HZ. Therefore, the benefits and risks of HZ vaccination should be weighed on an individual basis.
Interactions: Can be given concomitantly with unadjuvanted inactivated seasonal influenza vaccine, 23-valent pneumococcal polysaccharide vaccine (PPV23), pneumococcal conjugate vaccine (PCV-13), or reduced antigen diphtheria-tetanus-acellular pertussis vaccine (dTpa). Vaccines should be administered at different injection sites. Fever and shivering were more frequent when PPV23 vaccine is co-administered with Shingrix. Concomitant use with other vaccines is not recommended due to lack of data.
Ability to drive and use machinery: May have a minor influence on the ability to drive and use machines in the 2–3 days following vaccination.
Pregnancy and lactation: No data in pregnancy, as a precautionary measure, it is preferable to avoid the use of Shingrix during pregnancy. The effect on breastfed infants of administration of Shingrix to their mothers has not been studied.
Adverse reactions: See SPC for full details. *Very Common*: Headache, GI symptoms (including nausea, vomiting, diarrhoea and/or abdominal pain), myalgia, injection site reactions (such as pain, redness, swelling), fatigue, chills, fever. *Common:* injection site pruritus, malaise. *Serious:* hypersensitivity reactions including rash, urticaria, angioedema.
Legal category: POM. **Presentation and basic NHS cost:** Available in a pack size of 1 vial of powder plus 1 vial of suspension, 1 = £160. **Marketing Authorisation Numbers:** PLGB 19494/0263. **Marketing Authorisation Holder:** GlaxoSmithKline UK Limited, 980 Great

West Road, Brentford, Middlesex, TW8 9GS, UK. **Further information is available from:** GlaxoSmithKline Customer Contact Centre, customercontactuk@gsk.com; Freephone 0800 221 441. Shingrix is a trademark of the GlaxoSmithKline group of companies.
Date of preparation: June 2023.
Ref: PI-7340 (V5).

Adverse events should be reported. Reporting forms and information can be found at https://yellowcard.mhra.gov.uk/ or search for MHRA yellow card in the Google Play or Apple App store. Adverse events should also be reported to GlaxoSmithKline on 0800 221 441

Prescribing information -

See Summary of Product Characteristics before prescribing.

Boostrix Diphtheria, tetanus, and pertussis (acellular, component) vaccine (adsorbed, reduced antigen(s) content). **Composition:** 0.5 ml dose contains suspension of diphtheria toxoid ≥2IU, tetanus toxoid ≥20IU, *Bordetella pertussis* antigens (Pertussis toxoid 8 µg, Filamentous Haemagglutinin 8 µg, Pertactin 2.5 µg). **Indications:** Booster vaccination against diphtheria, tetanus, and pertussis in individuals from 4 years of age; protection against pertussis in early infancy following maternal immunisation during pregnancy. **Dosage and administration:** Administration should be based on official recommendations. A single 0.5ml dose by deep intramuscular (IM) injection, preferably in the deltoid region. **Contraindications:** Hypersensitivity to any component of the vaccine or to formaldehyde which is used in the manufacturing process. Hypersensitivity following previous administration of diphtheria, tetanus, or pertussis vaccines; encephalopathy of unknown aetiology ≤7 days after previous pertussis vaccination; transient thrombocytopenia or neurological complications after previous diphtheria and/or tetanus vaccination. Postpone in case of acute severe febrile illness. **Special warnings and precautions:** See SPC for full list. Always review medical history. Careful consideration required with previous temporal association of adverse events after a pertussis-containing vaccine. Risk-benefit of immunising or deferring vaccination should be carefully weighed in case of new onset or progression of neurological disorder. Appropriate medical treatment and supervision should be available in case of anaphylactic shock. May administer subcutaneously with caution, according to official recommendations, in cases of thrombocytopenia or bleeding disorders. Do not administer intravascularly. Expected immune response may not be obtained in immunosuppressed patients. Syncope can occur. Record product name and batch number. **Interactions:** Refer to SPC for more information. **Pregnancy and breastfeeding:** Boostrix can be used during the second or third trimester of pregnancy in accordance with official recommendations. See SPC for data on disease prevention in infants born to women vaccinated during pregnancy. Data from a randomised controlled clinical trial (341 pregnancy outcomes) and from a prospective observational study (793 pregnancy outcomes) where Boostrix was administered in third trimester found no adverse effect on pregnancy or fetus/newborn. No safety data from prospective clinical studies during the first/second trimester available. Passive surveillance of vaccination in third/second trimester found no adverse effect on pregnancy or fetus/newborn. As with other inactivated vaccines, it is not expected that vaccination with Boostrix harms the fetus at any trimester. Animal studies do not indicate direct or indirect harmful effects in pregnancy, embryonal/fetal development, parturition, or post-natal development. Effect of administration during lactation has not been assessed. As Boostrix contains toxoids or inactivated antigens, no risk to the breastfed infant should be expected. The benefits versus the risk should be carefully evaluated. **Adverse reactions:** See SPC for full list and details. Age 4–8 years: *Very common*: irritability, somnolence, injection site reactions (redness and/or swelling) and pain, fatigue. *Common*: anorexia; headache; diarrhoea, vomiting, GI disorders, pyrexia, extensive swelling of vaccinated limb. Age 10–76 years: *Very common*: headache; injection site reactions (redness and/or swelling) and pain, fatigue, malaise. *Common*: dizziness; nausea, GI disorders, pyrexia, injection site reactions (injection site mass and abscess sterile). *Serious side effects (post-marketing surveillance):* allergic reactions including anaphylactic and anaphylactoid reactions, hypotonichyporesponsiveness episodes, convulsions, angioedema, rare adverse reactions on the central or peripheral nervous system after tetanus toxoid-containing vaccines. **Legal category:** POM. **MA number:** PL 10592/0162. **Presentation and basic NHS cost:** 0.5ml suspension in pre-filled syringe (Type I glass) with a stopper (rubber butyl) with or without needles.
NHS List Price: £16.32. **MA holder:** SmithKline Beecham Ltd, 980 Great West Road, Brentford, Middlesex, TW8 9GS.
Further information: available from the GSK Customer Contact Centre, customercontactuk@gsk.com; Freephone: 0800 221 441.

Ref: PI-11818.
Date of preparation: May 2023.

Adverse events should be reported. Reporting forms and information can be found at https://yellowcard.mhra.gov.uk, or search for MHRA yellow card in the Google Play or Apple App store. Adverse events should also be reported to GlaxoSmithKline on 0800 221 441

Trelegy Ellipta (fluticasone furoate/umeclidinium/vilanterol) Prescribing Information

Please refer to the Prescribing Information as follows: England, Scotland, Wales, and Northern Ireland.

Please consult the full Summary of Product Characteristics (SmPC) before prescribing.

Trelegy Ellipta (fluticasone furoate/ umeclidinium/ vilanterol [as trifenatate]) inhalation powder. Each single inhalation of fluticasone furoate (FF) 100 micrograms (mcg), umeclidinium (UMEC) 62.5 mcg and vilanterol (VI) 25 mcg provides a delivered dose of 92 mcg FF, 55 mcg UMEC, and 22 mcg VI. **Indications:** Maintenance treatment in adult patients with moderate to severe COPD who are not adequately treated by a combination of an inhaled corticosteroid (ICS) and a long-acting β2-agonist (LABA) or a combination of a long-acting β2-agonist and a long-acting muscarinic antagonist. **Dosage and administration:** One inhalation once daily. **Contraindications:** Hypersensitivity to the active substances or to any of the excipients (lactose monohydrate & magnesium stearate). **Precautions:** Paradoxical bronchospasm, unstable or life-threatening cardiovascular disease or heart rhythm abnormalities, convulsive disorders or thyrotoxicosis, pulmonary tuberculosis or patients with chronic or untreated infections, narrow-angle glaucoma, urinary retention, hypokalaemia, patients predisposed to low levels of serum potassium, diabetes mellitus. In patients with moderate to severe hepatic impairment patients should be monitored for systemic corticosteroid-related adverse reactions. Eye symptoms such as blurred vision may be due to underlying serious conditions such as cataract, glaucoma, or central serous chorioretinopathy (CSCR); consider referral to ophthalmologist. Increased incidence of pneumonia has been observed in patients with COPD receiving inhaled corticosteroids. *Risk factors for pneumonia include:* current smokers, older age, patients with a low body mass index, and severe COPD. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take Trelegy. *Acute symptoms:* Not for acute symptoms, use short-acting inhaled bronchodilator. Warn patients to seek medical advice if short-acting inhaled bronchodilator use increases. Therapy should not be abruptly stopped without physician supervision due to risk of symptom recurrence. *Systemic effects:* Systemic effects of ICSs may occur, particularly at high doses for long periods, but much less likely than with oral corticosteroids. **Interactions with other medicinal products:** Caution should be exercised during concurrent use of non-selective and selective beta-blockers and when co-administering with strong CYP3A4 inhibitors (e.g., ketoconazole, ritonavir, cobicistat-containing products), hypokalaemic treatments, or non-potassium-sparing diuretics. Co-administration with other long-acting muscarinic antagonists or long acting β2-adrenergic agonists has not been studied and is not recommended. **Pregnancy and breastfeeding:** Experience limited. Balance risks against benefits. **Side effects:** *Common (≥1/100 to <1/10):* pneumonia, upper respiratory tract infection, bronchitis, pharyngitis, rhinitis, sinusitis, influenza, nasopharyngitis, candidiasis of mouth and throat, urinary tract infection, headache, cough, oropharyngeal pain, constipation, arthralgia, back pain. Other important side effects include: *Uncommon (≥1/1,000 to <1/100):* supraventricular tachyarrhythmia, tachycardia, atrial fibrillation, glaucoma, eye pain, vision blurred; *Rare (≥1/10,000 to <1/1,000):* hypersensitivity reactions, including anaphylaxis, angioedema, urticaria, and rash; See SmPC for other adverse reactions. **Legal category:** POM. **Presentation and Basic NHS cost:** *Trelegy Ellipta 92/55/22 mcg* - £44.50. 1 inhaler x 30 doses. **Marketing authorisation (MA) number: (GB)** PLGB 19494/0287, (NI) EU/1/17/1236/001 EU/1/17/1236/002 EU/1/17/1236/003; **MA holder: (GB)** GlaxoSmithKline UK Limited, 980 Great West Road, Brentford, Middlesex, TW8 9GS, UK. **(NI)** GlaxoSmithKline Trading Services Limited, 12 Riverwalk, Citywest Business Campus, Dublin 24, Ireland. **Last date of revision:** August 2022. **CL reference:** PI-9015 v.3.0. Trademarks are owned by or licensed to the GSK group of companies. All rights reserved.