



Spirometry with Bronchodilator

Examples of Medications to Withhold

Short-Acting Beta₂-Agonist Bronchodilators (SABA)

Relax tight muscles in airways and offer quick relief of symptoms such as coughing, wheezing and shortness of breath for 3-6 hours.

Medication Name	Recommended Withholding Time (Hours)
<i>ProAir[®] Digihaler</i> , 117 mcg albuterol sulfate	6
<i>ProAir[®] HFA</i> , 110 mcg albuterol sulfate	6
<i>ProAir RespiClick[®]</i> , 117 mcg albuterol sulfate inhalation powder	6
<i>Proventil[®] HFA</i> , 120 mcg albuterol sulfate	6
<i>Ventolin[®] HFA</i> , 90 mcg albuterol sulfate	6
<i>Xopenex HFA[®]</i> , 59 mcg levalbuterol tartrate	6

Long-Acting Beta₂-Agonist Bronchodilators (LABA)

Relax tight muscles in airways and offer lasting relief of symptoms such as coughing, wheezing and shortness of breath for at least 12 hours.

Medication Name	Recommended Withholding Time (Hours)
<i>Arcapta[™] Neohaler[™]</i> , 75 mcg indacaterol inhalation powder	12
<i>Serevent[®] Diskus[®]</i> , 50 mcg salmeterol xinafoate inhalation powder	12
<i>Striverdi[®] Respimat[®]</i> , 2.5 mcg olodaterol hydrochloride	12

Long-Acting Beta₂-Agonist Bronchodilators (LABA) combined with Inhaled Corticosteroids

Medication Name	Recommended Withholding Time (Hours)
<i>Advair Diskus[®]</i> , 100/50, 250/50, 500/50 mcg fluticasone propionate and salmeterol inhalation powder	12
<i>Advair[®] HFA</i> , 45/21, 115/21, 230/21 mcg fluticasone propionate and salmeterol xinafoate	12
<i>AirDuo[™] Respiclick[®]</i> , 55/14, 113/14, 232/14 mcg fluticasone propionate and salmeterol inhalation powder	12
<i>Wixela[™] Inhub[™]</i> , 100/50, 250/50, 500/50 mcg fluticasone propionate and salmeterol xinafoate (approved generic of Advair Diskus)	12
<i>Breo[®] Ellipta[®]</i> , 100/25, 200/25 mcg fluticasone furoate and vilanterol inhalation powder	12
<i>Dulera[®]</i> , 100/5, 200/5 mcg mometasone furoate and formoterol fumarate dehydrate	12
<i>Symbicort[®]</i> , 80/4.5, 160/4.5 mcg budesonide and formoterol fumarate dehydrate	12



Long-Acting Beta₂-Agonist Bronchodilators (LABA) combined with Long Acting Muscarinic Antagonist (LAMA)

Medication Name	Recommended Withholding Time (Hours)
<i>Anoro[®] Ellipta[®]</i> , 62.5/25 mcg umeclidinium and vilanerol inhalation powder	12
<i>Bevespi Aerosphere[®]</i> , 9/4.8 mcg glycopyrrolate and formoterol fumarate	12
<i>Stiolto[™] Respimat[®]</i> , 2.5/2.5 mcg tiotropium bromide and olodaterol	12
<i>Utibron[™] Neohaler[®]</i> , 27.5/15.6 mcg indacaterol and glycopyrrolate inhalation powder	12

Long-Acting Beta₂-Agonist Bronchodilators (LABA) combined with Inhaled Corticosteroids and Long Acting Muscarinic Antagonist (LAMA)

Medication Name	Recommended Withholding Time (Hours)
<i>Trelegy[®] Ellipta[®]</i> , 100/62.5, 5/25 mcg fluticasone furoate, umeclidinium and vilanterol inhalation powder	12

Short-Acting Anticholinergic

Relieve cough, sputum production, wheeze and chest tightness associated with chronic lung diseases

Medication Name	Recommended Withholding Time (Hours)
<i>Atrovent[®]</i> , HFA 17 mcg ipratropium bromide	6

Short-Acting Anticholinergic combined with Short-Acting Beta₂-Agonist Bronchodilators (SABA)

Medication Name	Recommended Withholding Time (Hours)
<i>Combivent[®] Respimat[®]</i> , 200/100 mcg ipratropium bromide and albuterol	6

Long-Acting Anticholinergic

Medication Name	Recommended Withholding Time (Hours)
<i>Incruse[®] Ellipta[®]</i> , 62.5 mcg umeclidinium inhalation powder	24
<i>Seebri[™] Neohaler[®]</i> , 15.6 mcg glycopyrrolate inhalation powder	24
<i>Spiriva[®] HandiHaler[®]</i> , 18 mcg tiotropium bromide inhalation powder	24
<i>Spiriva[®] Respimat[®]</i> , 1.25, 2.5 mcg tiotropium bromide	24
<i>Tudorza[™] Pressair[™]</i> , 400 mcg aclidinium bromide inhalation powder	24