



## Methacholine Challenge Test

### Examples of Medications to Withhold

#### Short-Acting Beta<sub>2</sub>-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 Beta<sub>2</sub>-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	48
<i>Serevent® Diskus®</i> , 50 mcg salmeterol xinafoate inhalation powder	36
<i>Striverdi® Respimat®</i> , 2.5 mcg olodaterol hydrochloride	48

#### Long-Acting Beta<sub>2</sub>-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	36
<i>Advair® HFA</i> , 45/21, 115/21, 230/21 mcg fluticasone propionate and salmeterol xinafoate	36
<i>AirDuo™ Respiclick®</i> , 55/14, 113/14, 232/14 mcg fluticasone propionate and salmeterol inhalation powder	36
<i>Wixela™ Inhub™</i> , 100/50, 250/50, 500/50 mcg fluticasone propionate and salmeterol xinafoate (approved generic of Advair Diskus)	36
<i>Breo® Ellipta®</i> , 100/25, 200/25 mcg fluticasone furoate and vilanterol inhalation powder	48
<i>Dulera®</i> , 100/5, 200/5 mcg mometasone furoate and formoterol fumarate dehydrate	36
<i>Symbicort®</i> , 80/4.5, 160/4.5 mcg budesonide and formoterol fumarate dehydrate	36



**Long-Acting Beta<sub>2</sub>-Agonist Bronchodilators (LABA) combined with Long Acting Muscarinic Antagonist (LAMA)**

Medication Name	Recommended Withholding Time (Hours)
<i>Anoro<sup>®</sup> Ellipta<sup>®</sup></i> , 62.5/25 mcg umeclidinium and vilanterol inhalation powder	36
<i>Bevespi Aerosphere<sup>®</sup></i> , 9/4.8 mcg glycopyrrolate and formoterol fumarate	36
<i>Stiolto<sup>™</sup> Respimat<sup>®</sup></i> , 2.5/2.5 mcg tiotropium bromide and olodaterol	48
<i>Utibron<sup>™</sup> Neohaler<sup>®</sup></i> , 27.5/15.6 mcg indacaterol and glycopyrrolate inhalation powder	48

**Long-Acting Beta<sub>2</sub>-Agonist Bronchodilators (LABA) combined with Inhaled Corticosteroids and Long Acting Muscarinic Antagonist (LAMA)**

Medication Name	Recommended Withholding Time (Hours)
<i>Trelegy<sup>®</sup> Ellipta<sup>®</sup></i> , 100/62.5, 5/25 mcg fluticasone furoate, umeclidinium and vilanterol inhalation powder	48

**Short-Acting Anticholinergic**

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

Medication Name	Recommended Withholding Time (Hours)
<i>Atrovent<sup>®</sup></i> , HFA 17 mcg ipratropium bromide	12

**Short-Acting Anticholinergic combined with Short-Acting Beta<sub>2</sub>-Agonist Bronchodilators (SABA)**

Medication Name	Recommended Withholding Time (Hours)
<i>Combivent<sup>®</sup> Respimat<sup>®</sup></i> , 200/100 mcg ipratropium bromide and albuterol	12

**Long-Acting Anticholinergic**

Medication Name	Recommended Withholding Time (Hours)
<i>Incruse<sup>®</sup> Ellipta<sup>®</sup></i> , 62.5 mcg umeclidinium inhalation powder	168 (7 days)
<i>Seebri<sup>™</sup> Neohaler<sup>®</sup></i> , 15.6 mcg glycopyrrolate inhalation powder	168 (7 days)
<i>Spiriva<sup>®</sup> HandiHaler<sup>®</sup></i> , 18 mcg tiotropium bromide inhalation powder	168 (7 days)
<i>Spiriva<sup>®</sup> Respimat<sup>®</sup></i> , 1.25, 2.5 mcg tiotropium bromide	168 (7 days)
<i>Tudorza<sup>™</sup> Pressair<sup>™</sup></i> , 400 mcg aclidinium bromide inhalation powder	168 (7 days)

**Xanthines**



<b>Medication Name</b>	<b>Recommended Withholding Time (Hours)</b>
<i>Uniphyll</i> , Theophylline	24