

Azelastine:

Adverse Reactions

>10%:

- Central nervous system: Bitter taste (4% to 20%), headache (1% to 15%), drowsiness ($\leq 12\%$)
- Infection: Cold symptoms (children $\leq 17\%$)
- Respiratory: Rhinitis (exacerbation; $\leq 17\%$), **cough** (children: 11%; infants and children: $\geq 2\%$)

2% to 10%:

- Central nervous system: Dysesthesia (8%), dizziness (2%), fatigue (2%)
- Dermatologic: Contact dermatitis
- Endocrine & metabolic: Weight gain (2%)
- Gastrointestinal: Dysgeusia (children: 2% to 4%), nausea (3%), xerostomia (3%), vomiting
- Infection: Upper respiratory tract infection (children: $\geq 2\%$ to 3%)
- Neuromuscular & skeletal: Myalgia ($\leq 2\%$)
- Ophthalmic: Conjunctivitis ($< 2\%$ to 5%)
- Otic: Otitis media (infants & children: $\geq 2\%$)
- Respiratory: Epistaxis (2% to 7%), asthma (5%), sinusitis (3% to $> 5\%$), burning sensation of the nose (4%), pharyngitis (4%), nasal discomfort ($\leq 4\%$), sneezing (1% to 3%), sore nose (infants and children: $\geq 2\%$), nasal mucosa ulcer ($\leq 2\%$), pharyngolaryngeal pain
- Miscellaneous: Fever

<2%:

- Cardiovascular: Flushing, hypertension, tachycardia
- Central nervous system: Abnormality in thinking, anxiety, depersonalization, depression, hypoesthesia, malaise, nervousness, sleep disorder, vertigo
- Dermatologic: Eczema, folliculitis, furunculosis
- Endocrine & metabolic: Albuminuria, amenorrhea
- Gastrointestinal: Abdominal pain, ageusia, aphthous stomatitis, constipation, diarrhea, gastroenteritis, glossitis, increased appetite, toothache
- Genitourinary: Hematuria, mastalgia
- Hepatic: Increased serum ALT
- Hypersensitivity: Hypersensitivity reaction
- Infection: Herpes simplex infection, viral infection
- Neuromuscular & skeletal: Back pain, dislocation of temporomandibular joint, hyperkinesia, limb pain, rheumatoid arthritis
- Ophthalmic: Eye pain, watery eyes
- Renal: Polyuria
- Respiratory: Bronchitis, bronchospasm, laryngitis, nasal congestion, paranasal sinus hypersecretion, paroxysmal nocturnal dyspnea, postnasal drip, sore throat
- Miscellaneous: Laceration

<1%, postmarketing, and/or case reports: Altered sense of smell, anaphylactoid reaction, anosmia, application site irritation, atrial fibrillation, blurred vision, chest pain, confusion, drug tolerance, dyspnea, facial edema, increased serum transaminases, insomnia, muscle spasm, nasal sores, palpitations, paresthesia, pruritus, skin rash, urinary retention, visual disturbance, xerophthalmia

Budesonide

Adverse Reactions

1% to 10%:

- Respiratory: Epistaxis (8%), pharyngitis (4%), bronchospasm (2%), **cough (2%)**, nasal mucosa irritation (2%)

<1%, postmarketing, and/or case reports: Anosmia, cataract, crusting of nose, dizziness, fatigue, glaucoma, growth suppression, headache, hypersensitivity reaction, increased intraocular pressure, mucous membrane ulceration, nasal septum perforation, nausea, pharyngeal disease (irritation, itchy throat, throat pain), wheezing

Desloratadine:

Adverse Reactions

>10%:

- Central nervous system: Headache (14%), irritability (infants: 12%)
- Gastrointestinal: Diarrhea (infants: 15% to 20%)
- Respiratory: Upper respiratory tract infection (infants: 11% to 21%), **cough** (infants: 11%)
- Miscellaneous: Fever (infants: 12% to 17%)

1% to 10%:

- Central nervous system: Drowsiness (infants: 9%), insomnia (infants: 5%), fatigue (2% to 5%), dizziness (4%), emotional lability (infants: 3%)
 - Dermatologic: Erythema of skin (infants: 3%), maculopapular rash (infants: 3%)
 - Gastrointestinal: Vomiting (infants: 6%), anorexia (infants: 5%), nausea (infants and children: 3% to 5%), dyspepsia (3%), increased appetite (infants: 3%), xerostomia (adults: 3%)
 - Genitourinary: Urinary tract infection (children: 4%)
 - Infection: Varicella zoster infection (4%), parasitic infection (infants: 3%)
 - Neuromuscular & skeletal: Myalgia (3%)
 - Otic: Otitis media (infants: 6%)
 - Respiratory: Bronchitis (infants: 6%), rhinorrhea (infants: 5%), pharyngitis (3% to 5%), epistaxis (infants: 3%)
 - Postmarketing and/or case reports: Dyspnea, hepatitis, hyperbilirubinemia, hypersensitivity reaction, increased liver enzymes, movement disorder, palpitations, pruritus, psychomotor agitation, seizure, skin rash, tachycardia
- The following adverse drug reactions and incidences are derived from product labeling unless otherwise specified.

QVAR (Beclomethasone)

Adverse Reactions

>10%:

- Central nervous system: Headache (1% to 25%)
- Respiratory: Pharyngitis (3% to 27%)

1% to 10%:

- Central nervous system: Pain (1% to 5%), voice disorder (4%)
- Gastrointestinal: Oral candidiasis (1% to 8%), vomiting (children: 3%), diarrhea (children: 1% to 3%), nausea (1% to 3%)
- Genitourinary: Dysmenorrhea (1% to 3%), viral gastroenteritis (children: 1% to 3%)
- Infection: Influenza (children: 1% to 3%)
- Neuromuscular & skeletal: Back pain (1% to 4%), myalgia (children: 1% to 3%)
- Otic: Otitis (children: 1% to 3%)
- Respiratory: Nasopharyngitis (2% to 9%), upper respiratory tract infection (3% to 8%), **cough (1% to 7%)**, viral upper respiratory tract infection (2% to 4%), oropharyngeal pain (1% to 4%), sinusitis (3%), allergic rhinitis ($\leq 3\%$)
- Miscellaneous: Fever (children: 3%)

<1%, postmarketing, and/or case reports: Aggressive behavior, blurred vision, depression, dysgeusia (Tuccori 2011), psychomotor agitation, retinopathy, sleep disorder, suicidal ideation The following adverse drug reactions and incidences are derived from product labeling unless otherwise specified.

Albuterol:

Adverse Reactions

>10%:

- Central nervous system: Excitement (children and adolescents 2 to 14 years: 20%), nervousness (4% to 15%)
- Neuromuscular & skeletal: Tremor ($\geq 5\%$ to 38%; frequency increases with age)
- Respiratory: Upper respiratory tract infection ($\geq 5\%$ to 21%), rhinitis (5% to 16%), bronchospasm (8% to 15%; exacerbation of underlying pulmonary disease), pharyngitis (14%), exacerbation of asthma (11% to 13%)

1% to 10%:

- Cardiovascular: Tachycardia ($\leq 7\%$), hypertension (1% to 3%), chest pain ($< 3\%$), edema ($< 3\%$), extrasystoles ($< 3\%$), chest discomfort, flushing, palpitations
- Central nervous system: Shakiness (children and adolescents 6 to 14 years: 9%), headache (3% to 7%), dizziness ($< 7\%$), insomnia (1% to 3%), anxiety ($< 3\%$), ataxia ($< 3\%$), depression ($< 3\%$), drowsiness ($< 3\%$), rigors ($< 3\%$), voice disorder ($< 3\%$), hyperactive behavior (children and adolescents 6 to 14 years: 2%), malaise (2%), pain (2%), migraine ($\leq 2\%$), emotional lability (1%), fatigue (1%), restlessness, vertigo
- Dermatologic: Diaphoresis ($< 3\%$), skin rash ($< 3\%$), urticaria ($\leq 2\%$), pallor (children 2 to 6 years: 1%)
- Endocrine & metabolic: Increased serum glucose (10%), diabetes mellitus ($< 3\%$)
- Gastrointestinal: Nausea (2% to 10%), vomiting (3% to 7%), unpleasant taste (inhalation site, 4%), gastroenteritis (3%), increased appetite (children and adolescents 6 to 14 years: 3%), viral gastroenteritis (1% to 3%), diarrhea ($< 3\%$), eructation ($< 3\%$), flatulence ($< 3\%$), glossitis ($< 3\%$), xerostomia ($< 3\%$), gastrointestinal signs and symptoms (children 2 to 6 years: 2%), dyspepsia (1% to 2%), anorexia (children 2 to 6 years: 1%)
- Genitourinary: Urinary tract infection ($\leq 3\%$), difficulty in micturition

- Hematologic & oncologic: Decreased hematocrit (7%), decreased hemoglobin (7%), decreased white blood cell count (4%), lymphadenopathy (3%)
 - Hepatic: Increased serum ALT (5%), increased serum AST (4%)
 - Hypersensitivity: Hypersensitivity reaction (3% to 6%)
 - Infection: Cold symptoms (3%), infection (<3%; skin/appendage: ≤2%)
 - Local: Application site reaction (HFA inhaler: 6%)
 - Neuromuscular & skeletal: Muscle cramps (1% to 7%; frequency increases with age), musculoskeletal pain (3% to 5%), back pain (2% to 4%), hyperkinesia (≤4%), leg cramps (<3%)
 - Ophthalmic: Conjunctivitis (children 2 to 6 years: 1%)
 - Otic: Otitis media (≤4%), ear disease (<3%), otalgia (<3%), tinnitus (<3%)
 - Respiratory: Throat irritation (10%), viral upper respiratory tract infection (7%), respiratory tract disease (6%), nasopharyngitis (≥5%; children: 2%), oropharyngeal pain (≥5%; children: 2%), sinusitis (≥5%), upper respiratory tract inflammation (5%), **cough (≥3%)**, flu-like symptoms (3%), dyspnea (<3%), laryngitis (<3%), oropharyngeal edema (<3%), pulmonary disease (<3%), bronchitis (≥2%), increased bronchial secretions (2%), wheezing (1% to 2%), epistaxis (children and adolescents 6 to 14 years: 1%), nasal congestion (1%), sinus headache (1%)
 - Miscellaneous: Fever (≥5% to 6%), accidental injury (<3%)
- <1%,** postmarketing, and/or case reports: Anaphylaxis, angina pectoris, angioedema, atrial fibrillation, dysgeusia, exacerbation of diabetes mellitus, gag reflex, hoarseness, hyperglycemia, hypokalemia, hypotension, irritability, ketoacidosis, lactic acidosis, metabolic acidosis, muscle spasm (children and adolescents 6 to 14 years), mydriasis (children and adolescents 6 to 14 years), oropharyngeal irritation, paradoxical bronchospasm, peripheral vasodilation, stomach pain (children and adolescents 6 to 14 years), supraventricular tachycardia, tongue ulcer, weakness

Xhance (Fluticasone)

Adverse Reactions

>10%: Central nervous system: Headache (4% to 16%)

1% to 10%:

- Central nervous system: Body pain (1% to 3%), dizziness (1% to 3%), generalized ache (1% to 3%)
 - Endocrine & metabolic: Weight gain (1% to <3%)
 - Gastrointestinal: Nausea and vomiting (3% to 5%), abdominal pain (1% to 3%), diarrhea (1% to 3%), abdominal distress (1% to <3%), toothache (1% to <3%)
 - Local: Local irritation (nose: 4% to 6%)
 - Ophthalmic: Increased intraocular pressure (1% to <3%)
 - Respiratory: Epistaxis (6% to 12%), nasal mucosa ulcer (3% to 8%; includes nasal septal ulceration), pharyngitis (3% to 8%), nasopharyngitis (8%), acute asthma (7%), nasal congestion (6%), acute sinusitis (5%), **cough (4%)**, blood in nasal mucosa (1% to 3%), bronchitis (1% to 3%), flu-like symptoms (1% to 3%), rhinorrhea (1% to 3%), dry nose (1% to <3%), oropharyngeal pain (1% to <3%), sinusitis (1% to <3%)
 - Miscellaneous: Fever (1% to 3%)
- <1%,** postmarketing, and/or case reports: Altered sense of smell, anaphylactoid reaction, anaphylaxis, angioedema, blurred vision, bronchospasm, cataract, conjunctivitis, contact dermatitis, dry eye syndrome, dry throat, dysgeusia, dyspnea, esophageal candidiasis, eye irritation, facial edema, glaucoma, growth suppression, hoarseness, hypersensitivity reaction, intestinal candidiasis, nasal candidiasis, nasal septum perforation, pharyngeal candidiasis, pruritus, skin rash, sore throat, throat irritation, tongue edema, urticaria, voice disorder, wheezing