Overview of Allergic Rhinitis

Allergic rhinitis (commonly known as “hay fever”) is a prevalent chronic illness that affects 40 to 60 million Americans. Allergic rhinitis (AR) is characterized by the inflammation of nasal mucosal membranes in response to exposure and sensitization to specific allergenic material via inhalation.

There are two main forms of AR:

- **Seasonal**: Symptoms usually occur in spring, summer, and early fall. This form is caused by seasonal allergens, such as airborne mold spores and pollens (from grass, trees, and weeds). In the spring, the most common triggers are grasses and pollens. In the fall, the most common trigger is ragweed.
- **Perennial**: Symptoms occur year-round. This form is caused by non-seasonal allergens, such as dust mites, pet hair or dander, cockroaches, or mold.

Additionally, seasonal and perennial AR can co-exist in the same patient.

Immune Response

Allergic rhinitis begins when a patient is exposed to an allergen and the allergen is processed by lymphocytes; at this point, patients who will develop the allergy will produce IgE antibodies against the allergen (or antigen). Upon re-exposure to the allergen, IgE on the surface of histamine producing mast cells bind the antigen leading to degranulation of the mast cell. Degranulation of this cell leads to an immediate reaction with the release of inflammatory mediators, such as histamines, leukotrienes, prostaglandins, kinins, and tryptase. These mediators act to vasodilate the capillary bed of the nasal capillary, increase vascular permeability, as well as to increase the production of nasal secretions.

This acute reaction produces bothersome symptoms, including itching, sneezing, rhinorrhea, and obstruction. A late phase reaction typically occurs some four to eight hours after the acute reaction when mast cells further degranulate to release lymphocytes and cytokines.

Diagnosis

Because there are several different causes of rhinitis, diagnosis of allergic rhinitis requires obtaining a medical history and interpretation of findings on the physical exam in addition to other diagnostic measures. Questions asked in obtaining the patient’s medical history should adequately assess the frequency and severity of symptoms, times of the year when symptoms become worse, times of the year when symptoms become better, environmental exposure (both indoor and outdoor), and previous medication therapies the patient has attempted to control symptoms.

Skin tests are commonly used to determine an allergy; and verifies specific allergens.

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prick or scratch test (Percutaneous test)</td>
<td>A tiny drop of a possible allergen is pricked or scratched into the skin. Most common test. Results in 10-20 minutes.</td>
</tr>
<tr>
<td>Intradermal test</td>
<td>A small amount of possible allergen is injected under the skin using a thin needle. More sensitive than the percutaneous test. Results in 20 minutes.</td>
</tr>
</tbody>
</table>
Subcutaneous and sublingual allergen-specific immunotherapy is recommended. Below is an introduction to the new oral sublingual allergen-specific immunotherapy agents that are covered as an outpatient benefit.

**Oral Immunotherapy**

<table>
<thead>
<tr>
<th>Grastek</th>
<th>Ragwitek</th>
<th>Oralair</th>
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</table>
| Approved for allergies caused by Timothy grass.  
  - Timothy grass is the allergen Phleum pretense | Approved for allergies caused by short-ragweed pollen  
  - Short ragweed is the allergen Ambrosia artemisiifolia | Approved for allergies caused by five types of grasses:  
  - Sweet Vernal, Orchard, Perennial Rye, Timothy, and Kentucky Blue grass |
| Approved between 5 and 65 years old | Approved between 18 and 65 years old | Approved between 10 and 65 years old |
| Treatment must begin at least 12 weeks prior to onset of each grass pollen season  
  - The common Timothy grass season starts in early- to mid-summer | Treatment must begin at least 12 weeks prior to onset of each grass pollen season  
  - The common ragweed season is between mid-August and October | Treatment must begin at least 4 months prior to onset of each grass pollen season  
  - The common grass pollen season starts in the spring and remains throughout the summer |
| Potential cross-reactivity includes: Rye grass, Canary grass, Meadow grass, Cocksfoot grass, Meadow Fescue, Velvet grass, Redtop, Meadow Foxtail, and Wild Rye grass | | |

References
2. Grastek (Timothy grass pollen allergen extract) [prescribing information]. Whitehouse Station, NJ: Merck & Co, Inc.; June 2014.
3. Oralair (Sweet Vernal, Orchard, Perennial Rye, Timothy, and Kentucky Bluegrass mixed pollens allergen extract) [prescribing information]. Lenoir, NC: Greer Laboratories Inc.; October 2014.
The Preferred Drug List (PDL) is maintained by KDHE-DHCF. Each MCO and KMAP follows the same PDL. Below is a list of current preferred agents. A complete list of both preferred and non-preferred agents may be found on the KDHE-DHCF Web site. The Preferred Drug List is typically updated on the first of each month; please visit the KDHE-DHCF Web site for the most recent version: http://www.kdhks.gov/health-pharmacy/pharmacy_druglist.html.

### Analgesics
- **Long-ACTing Opioids**
  - Afinia (morphine sulfate ER)
  - Duragesic (fentanyl)
  - MS Contin (morphine sulfate ER)
  - OxyContin (oxycodone SR)
- **Muscle Relaxants (Skeletal)**
  - Flexeril (cyclobenzaprine)
  - Parafon Forte DSC (chloroxazone)
  - Robaxin (methocarbamol)
  - Robaxin-750 (methocarbamol)
  - Robaxinal (methocarbamol/aspargin)
- **Analgesics**
  - Naprosyn (naproxen)
  - Motrin IB (ibuprofen)
  - Mobic (celecoxib)
  - Feneon (feneclav)
  - Exforge (amlodipine/valsartan)
  - Tiazac (atenolol/simvastatin)
  - Covera (amlodipine)
  - Cardizem (diltiazem)
  - Procardia (amlodipine)
  - Cardene (diltiazem)
  - Adalat CC (loratadine)
  - Alphaglucosidase Inhibitors
  - Mopran (mopran)
  - Zyneda (zyneda)
  - Olopatadine (beclomethasone)

### Anticholinergics for the Maintenance of COPD
- Spiriva (tiotropium)

### Combination Products for Allergic Rhinitis
- Zyrtec (cetirizine)

### Long-Acting Beta-Agonists
- *Clinical PA may be required*
  - Brovana (arformoterol)
  - Stiverdi Respiimat (olodaterol)

### Inhaled Long-Acting Beta-Agonists/Corticosteroids
- Advair (fluticasone/salmeterol)
  - Dulera (formoterol/mometasone)
  - Symbicort (budesonide/formoterol)

### Inhaled Corticosteroids
- Asmanex (mometasone)
  - Flovent (fluticasone)
  - Pulmicort Flexhaler (budesonide)
  - Pulmicort Respules (budesonide)*
  - *56 years of age only*
  - QVAR (beclomethasone)

### Intrasal Nasal Antihistamines
- Astelin (azelastine)
  - Astepro (azelastine)
  - Patanase (olopatadine)

### Intranasal Corticosteroids
- Flonase (fluticasone)
  - Nasonex (mometasone)

### Non-Nasal Antihistamines
- Claritin (loratadine)
  - Zyrtec (cetirizine)

### Ophthalmic Antihistamine/Mast Cell Stabilizer Combinations
- Alaway (ketotifen)
  - Pataday (olopatadine)
  - Patanol (olopatadine)
  - Refresh (ketotifen)
  - Zaditor (ketotifen)

### Muscle Relaxants (Spasticity)
- Lioresal (baclofen)
  - Zanaflex (tizanidine)*

### Muscle Relaxants (Skeletal)
- Flexeril (cyclobenzaprine)

### Parafon Forte DSC (chloroxazone)
- Robaxin (methocarbamol)
- Robaxin-750 (methocarbamol)
- Robaxinal (methocarbamol/aspargin)

### Combination Products for Hyperlipidemia
- Liptruzet (ezetimibe/atovastatin)
  - Vytorin (ezetimibe/simvastatin)

### Fibric Acid Derivatives
- Fenofibrate generics
  - Liptor (gemfibrozil)

### Statins
- Lipitor (atorvastatin)
  - Mevacor (lovastatin)
  - Pravachol (pravastatin)
  - Zocor (simvastatin)

### HoFH Agents
- Niasim ( mipomersen )

### Hypertriglyceridemia Agents
- Lovaza (omega-3 acid ethyl esters)

### Anti-Infectives
- Antiherpes Virus Agents
  - Zovirax (acyclovir)*
  - *oral dosage forms only*

### Hepatitis C Protease Inhibitors
- Victrelis (boceprevir)

### Inhaled Tobramycin Products
- Tobi (tobramycin)

### Biologics
- Adult Rheumatoid Arthritis
  - Enbrel (etanercept)
  - Humira (adalimumab)

### Ankylosing Spondylitis
- Enbrel (etanercept)
  - Humira (adalimumab)

### Crohn's Disease
- *Clinical PA may be required*
  - Humira (adalimumab)

### Juvenile Idiopathic Arthritis
- Enbrel (etanercept)
  - Humira (adalimumab)

### Psoriatic Arthritis
- *Clinical PA may be required*
  - Enbrel (etanercept)
  - Humira (adalimumab)

### Plaque Psoriasis
- *Clinical PA may be required*
  - Enbrel (etanercept)
  - Humira (adalimumab)

### Ulcerative Colitis
- *Clinical PA may be required*
  - Enbrel (etanercept)
  - Humira (adalimumab)

### Cardiovascular Agents
- ACE Inhibitors
  - Accupril (quinapril)

### ARBs
- Benicar (olmesartan)
  - Benicar HCT® (olmesartan/HCTZ)
  - Cozaar (losartan)

### CCBs (Dihydropyridines)
- Adalat CC® (nifedipine ER)
  - Cardene (nicardipine IR)

### CCBs (Non-Dihydropyridines)
- Calan® (verapamil IR)

### Central Nervous System Agents
- Adjunct Antiepileptics
  - Keppra (levitiracetam)
  - Keppra XR (levetiracetam XR)

### Diabetic Agents
- Alphaglucosidase Inhibitors
  - Glyset (miglitol)

### Biguanides
- Glucophage (metformin)

### Dipeptidyl Peptidase-4 Inhibitors
- Januvia (sitagliptin)
  - Bydureon (exenatide ER)

### Incretin Mimetics
- *Clinical PA may be required*
  - Byetta (exenatide)
  - Victoza (liraglutide)

The list of preferred drugs is continued on page 4. This list was updated on 5/1/2015. Please visit the KDHE-DHCF Web site for the most current version. Please note that when a generic product is available for a preferred or non-preferred agent, the pharmacy will receive a lower reimbursement rate for the branded product unless a DAW PA is approved.
## Preferred Drug List

### Insulin Delivery Systems
- All multi-dose vials
- Novolog® PenFill & FlexPen
- Novolog® Mix PenFill & FlexPen

### Long-Acting Insulin
- Lantus® (insulin glargine)
- Levemir® (insulin detemir)

### Meglitinides
- Prandin® (repaglinide)
- Starlix® (nateglinide)

### 2nd Generation Sulfonylureas
- Amaryl® (glimepiride)
- DiaBeta® (glyburide)
- Micronase® (glyburide)
- Glucovance® (glyburide/metformin)
- Glynase PresTab® (micronized glyburide)

### SGLT2 Inhibitors
- Farxiga® (dapagliflozin)
- Invokana® (canagliflozin)

### Thiazolidinediones
- Actos® (pioglitazone)
- ACTOplus Met® (pioglitazone/metformin)
- ACTOplus Met® XR (pioglitazone/metformin)

### Gastrointestinal Agents

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
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</thead>
<tbody>
<tr>
<td><em>H₂ Antagonists</em></td>
<td>Pepcid® (famotidine)</td>
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<td></td>
<td>Zantac® (ranitidine)</td>
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<tr>
<td><em>Oral Mesalamine Products</em></td>
<td>Apriso® (mesalamine DR)</td>
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<tr>
<td></td>
<td>Asacol® (mesalamine ER)*</td>
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<tr>
<td><em>non-HD formulation</em></td>
<td>Creon® (pancrelipase)</td>
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<tr>
<td></td>
<td>Ultresa® (pancrelipase)</td>
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<tr>
<td></td>
<td>Viokase® (pancrelipase)</td>
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<tr>
<td></td>
<td>Zenpep® (pancrelipase)</td>
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<tr>
<td><em>Pancreatic Enzyme Replacements</em></td>
<td>Proton Pump Inhibitors</td>
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<tr>
<td></td>
<td>Prilosec® (omeprazole)</td>
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<tr>
<td></td>
<td>Protonix® ( pantoprazole)</td>
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<tr>
<td><em>Serotonin 5HT₂ Antagonists</em></td>
<td>Zofran® (ondansetron)</td>
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<tr>
<td></td>
<td>Zofran® OD (ondansetron)</td>
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<tr>
<td><em>Xanthine Oxidase Inhibitors</em></td>
<td>Zyloprim® (allopurinol)</td>
</tr>
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### Injectables

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
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<tbody>
<tr>
<td><em>Erythropoiesis-Stimulating Agents</em></td>
<td>Aranesp® (darbepoetin alfa)</td>
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<td></td>
<td>Epogen® (epoetin alfa)</td>
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<td></td>
<td>Procrit® (epoetin alfa)</td>
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</tbody>
</table>

### Growth Hormones
- *Clinical PA may be required*
- Genotropin® (somatropin)
- Norditropin® (somatropin)
- Omnitrope® (somatropin)

### Ophthalmic Agents

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td><em>Ophthalmic Prostaglandin Analog</em></td>
<td>Xalatan® (latanoprost)</td>
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<td></td>
<td>Zioptan® (tafluprost)</td>
</tr>
<tr>
<td><em>Carbonic Anhydrase Inhibitors</em></td>
<td>Simbrinza® (brinzolamide/brimonidine)</td>
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<td></td>
<td>Trusopt® ( dorzolamide)</td>
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### Osteoporosis Agents

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<tr>
<th>Category</th>
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<tbody>
<tr>
<td><em>Bisphosphonates</em></td>
<td>Fosamax® ( alendronate)</td>
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<td></td>
<td>Fosamax Plus D® (alendronate/cholecalciferol)</td>
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<tr>
<td><em>Otic Anti-Infective/Steroid Combinations</em></td>
<td>Cipro HC® ( ciprofloxacin/hydrocortisone)</td>
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<td>Ciprofox HC® ( ciprofloxacin/dexameth)</td>
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<tr>
<td></td>
<td>Cortisporin® Otic ( neomycin/polyoxymycinB/HC)</td>
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### Urologic Agents

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<tr>
<th>Category</th>
<th>Examples</th>
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<tbody>
<tr>
<td><em>Anticholinergic Agents</em></td>
<td>Ditropan® (oxybutynin)</td>
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<tr>
<td></td>
<td>Ditropan XL® (oxybutynin ER)</td>
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<tr>
<td></td>
<td>Toviz® (fesoterodine)</td>
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<tr>
<td></td>
<td>Vesicare® (solifenacin)</td>
</tr>
<tr>
<td><em>Beta-3 Adrenergic Agonists</em></td>
<td>Myrbetriq® (mirabegron)</td>
</tr>
</tbody>
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