



**CLUSTER IMMUNOTHERAPY**  
**“INDUCTION PHASE WITH CLUSTER ALLERGY SHOTS”**  
**WHAT YOU SHOULD KNOW BEFORE YOU BEGIN**

**What are allergy shots/injections?**

Allergy shots (often referred to as “immunotherapy”) are injections given on a regular basis with the goal of decreasing sensitivity to a specific, allergy-producing substance. With treatment for symptoms from inhaled allergens, you probably will not notice any difference in how you feel until you have received maintenance therapy for at least 5-6 months. It can take up to 18-24 months before any benefit is noticed. This approach does NOT provide immediate relief. For venom immunotherapy patients, the treatment usually takes 4-6 months of maintenance injections to reach a level offering protection.

Cluster immunotherapy represents accelerated schedules of immunotherapy. They are designed to allow a patient to reach a maintenance dose in a shorter time than the more traditional weekly immunotherapy.

**There are two phases of immunotherapy:** Build up and Maintenance

**What is the difference between cluster induction and traditional induction?**

1. **Cluster therapy:**

Cluster immunotherapy schedules are designed to accelerate the buildup phase of immunotherapy to achieve a maintenance dose more rapidly than with conventional schedules. With cluster schedules, 2 or more injections are given per visit. The injections are given 30 minutes apart.

Visits may be once or twice a week with a dosing schedule that has fewer total injections than are used with traditional immunotherapy. Maintenance dose can be reached in as little as four weeks. The cluster or accelerated dosing schedule is associated with the same or a slightly increased frequency of systemic reactions compared with traditional immunotherapy. The occurrence of reactions can be reduced with administration of antihistamine two hours before injections.

2. **Traditional therapy:**

Traditional immunotherapy schedules have a longer build up period, as much as eight to twelve months. Injections are given on a weekly basis and have more doses to reach maintenance. Noticeable benefit from traditional immunotherapy may take longer because it takes longer to reach maintenance. Those with poorly-controlled asthma or extremely high sensitivity to the allergens, may be better candidates for traditional immunotherapy.

**What are the advantages?**

There are a number of advantages to using an accelerated immunotherapy schedule. It may be more convenient if the duration of weekly visits is shortened. There is improved adherence. Clinical benefit may occur more rapidly.

**Is there a risk?**

Though an accelerated schedule may provide increased convenience, it also is associated with an increased risk of allergic reactions. Reactions can occur locally (where the injection is given) or be generalized (involving any portion of the body). It may be necessary to stop giving injections if a large local reaction develops or there's evidence of a systemic reaction.

Local swelling following an allergy shot is not unusual and may indicate a need to lower the injected dose or repeat a dose.

Generalized reactions to immunotherapy are uncommon but very rarely **may be life threatening or even fatal if untreated**. They almost always begin within 20-30 minutes after the injection. Because of this risk, immunotherapy **MUST** be given under direct supervision of a physician and in a place where you can receive immediate emergency medical care if you should have a reaction to the injection. Therefore, **always** wait at least 30 minutes in the treatment area in between injections and one hour after the series of injections for each visit. This precaution must be taken with **EVERY** shot, because serious reactions can happen even after you have

been receiving immunotherapy at the same dose for several years. A nurse will check your site before you leave the office.

## What is a reaction?

**Local reaction:** A reaction of itching, redness or swelling (less than the size of a 50 cent piece) going away overnight is quite common: larger and longer lasting reactions are a cause for concern. **Before** you get your next shot, be sure to report the size and duration of any reaction to the person giving your treatment. The nurse will also assess this in between injections while in the office. This helps in determining your next safe dose.

**General/Systemic:** Symptoms of a general reaction may include:

- Unexpected hay fever symptoms such as itchy eyes, nose or throat, runny nose or nasal stuffiness
- Tightness in the chest, wheezing, cough, asthma
- Hives
- Itching of palms, scalp, soles of feet, or elsewhere
- Swelling of eye lids, face, or extremities
- Flushing or feeling of intense warmth
- Faintness
- Sudden development of nausea, abdominal cramps, or diarrhea
- Anaphylactic shock

Because an untreated general/systemic reaction could be dangerous, inform the person who gave you your shot **immediately** if you feel different (unwell) in any way.

If a **General/Systemic** reaction occurs after leaving our office, you must go to the nearest Emergency Department or call 911. If a **local** reaction occurs (such as mild itching or local swelling at the injection site or mild nasal symptoms) you may call the office at 219-769-6177. Please wait to speak with the receptionist and inform her of the nature of your call.

If after hours, follow the allergy action plan. Administer Epinephrine, call 911, take oral liquid benadryl, repeat Epinephrine treatment if needed.

For non-life threatening concerns, you may reach Dr. Patel after hours you may call 219-779-7407.

## Your part in the treatment:

Each time you get a shot, notice if you have any local itching, redness or swelling or feel different (unwell) in any way. If you have **more** allergy symptoms promptly following your shot, report this **immediately** to the person who gave you your shot. Any type of reaction should be reported to the person giving your shots **before** you get the next shot, so your dose can be adjusted appropriately.

You should also take your medications consistently, as prescribed and keep any emergency medications on hand as directed. Although it is not always possible to make every appointment, you should try to stay on a regular schedule in order to get the most benefit out of your therapy.

## Medications and Allergy Shots

### Current medications/Change in medications:

- Please continue on all your prescribed allergy medications. Please talk to you your Allergist before discontinuing any allergy medication. Please also inform your Allergist or Allergy Nurse of any changes to your medications prescribed by your other Health Care Professionals. Beta-Adrenergic Blocking Agents (Beta Blockers) are a class of medications you may NOT take while receiving Immunotherapy. These medications may be prescribed for high blood pressure, migraines, glaucoma or other heart problems. If there is any question please ask before receiving your shot!

### Premedication:

- Premedication is given in an attempt to reduce the risk and severity of a systemic reaction during the procedure. Your physician may prescribe an antihistamine (H-1 antagonist: Allegra, Zyrtec, Claritin, etc.), an antacid (H-2 antagonist: ranitidine/Zantac, cimitidine/Tagamet, etc.) and Singulair for you to take two hours before your injection. If your physician prescribes these, it is very important that you take your medications as directed.

## Medications on hand:

- Be sure you have an antihistamine and, if prone to asthma, a bronchodilator available. You will also be prescribed an Epi-pen auto-injector to keep on hand. The Epi-pen auto-injector is an easy to use pre-filled syringe designed for the self-administration of epinephrine in acute allergic reactions. Please bring these medications with you to your appointment. If increased symptoms occur after leaving our office, it may be necessary to use these medications promptly and then contact your physician.

## How often do I get my shots?

Your physician has designed a schedule for your treatment specifying the frequency of your shots. To begin, you should get two-three shots every 30 minutes, twice a week on non-consecutive days. **This is called a cluster accelerated building process. This process can take approximately eight visits, if there are no interruptions or complications.** If immunotherapy is interrupted for a week or more, your next dose may need to be repeated or reduced for safety. Your physician will decide the frequency of your maintenance dose, once you have completed the induction building process, which will most likely follow traditional injection schedules. If there are any questions, contact our office at 219-769-6177

## When shouldn't I get my injection?

Certain conditions increase the risk of adverse reactions and require that treatment be omitted or changed. **Avoid strenuous exercise and exposure to excessive heat for 2 hours before and after shots.** If you have had a recent change in your health status, including a "cold", fever, pregnancy, excessive hay fever or any asthma symptoms, please report this to the person giving you your shots, since dosage adjustments may need to be made. **If ill, please make an appointment to see a physician.** If you are unsure of whether or not you should get your shot, please call our office.

## How long will I need to continue my injections?

Successful treatment usually involves receiving immunotherapy year-round for several (often at least 5) years: thereafter, shots often may be stopped. Questions of treatment type and duration should be discussed when you are at your initial visit and later clinic visits. At a **minimum**, a routine visit every 4-6 months with your allergist is needed to continue to receive allergy extract (your specific mixture for your shots).

## What happens when I reach maintenance and get new bottles of my extract?

When starting new bottles the dose will be decreased by one third, due to the freshness of the bottle. You will need to receive your allergy shots every one to two weeks until maintenance dose is reached.

## REFERENCES:

Cox, Linda. "Accelerated immunotherapy schedules: review of efficacy and safety." *Annals of allergy, asthma & immunology* 97.2 (2006): 126-138.

Cox, Linda, et al. "Allergen immunotherapy: a practice parameter third update." *Journal of Allergy and Clinical Immunology* 127.1 (2011): S1-S55.