Some people experience allergies when their immune system begins to manufacture an excessive quantity of a particular antibody, IgE, which is specific to one or more allergens. Once produced, this antibody binds to the mast cells, which are found in the skin and the mucous. This is called *sensitization,* and when re-exposed to the same allergens, the mast cells release various chemical substances, including *histamine,* which cause allergic symptoms.

Treating this with medication controls the allergic symptoms and inflammation after they are triggered, but it does not attack the source of the problem.

The goal of immunotherapy is to build a tolerance to the allergens responsible for allergic reactions, by regulating, controlling, and producing the specific IgE that started the allergic reaction.

WHAT IS IMMUNOTHERAPY?

Immunotherapy involves gradually exposing the patient to the allergens to which they are sensitive, in order to strengthen their tolerance.

Subcutaneously: The person will receive injections under mandatory medical supervision, in increasing weekly doses until reaching a maximum dose.

Peri-annual treatments require monthly doses and continue for 3 to 5 years.

Pre-seasonal treatments are a series of 11 injections, whose maximum dose must be reached before the beginning of the pollen season. The treatment will then be interrupted and resume the following year, and this cycle will continue for 3 or 4 years.

Orally (sublingual): The first dose will be administered under medical supervision followed by doses taken at home according to the frequency indicated in the product monograph.

HOW EFFECTIVE IS IMMUNOTHERAPY?

Scientists agree that immunotherapy is 80-85% effective against airborne allergens such as pollen, mites, animal hair, etc., and 98% effective for allergies to hymenoptera venoms.

It is clearly shown that improvement continues after treatment is completed. Improvement is permanent in more than half of the cases of allergies to airborne allergens, but in other cases, symptoms may reappear after a dozen years. It will then be possible to resume treatment if the doctor deems it necessary.

KINDS OF TREATMENT

THERE ARE THREE KINDS OF TREATMENT AVAILABLE IN CANADA. TWO ARE INJECTABLE AND THE THIRD IS SUBLINGUAL (ORAL)

A — Perennial treatments (injectable) A treatment kit should combat all the allergens pertinent to each patient, but two kits might be required to combat all allergies.

Injections are administered for the entire year according to a two-phase protocol:

The Progression Phase:

In this phase, the treatment is introduced with a very low dose of allergen(s). The dose volume and concentration is gradually increased over a series of weeks until reaching a maximum dose (maintenance dose), that will be determined as follows:

A 0.5 ml dose of vial 4 (the most concentrated) for 2 consecutive weeks, or

A dose inducing a local reaction of 5 cm, 3 times in a row.

This initial phase can last for 5-6 months depending upon each patient's sensitivity (whether or not they can tolerate a twice-weekly injection frequency).

The Maintenance Phase:

It immediately follows the progression phase:

Injections will be administered every two weeks, three weeks, four weeks, then once per month. This monthly frequency will continue for a period of 3-5 years.

The specialist will evaluate the patient's condition annually or as needed.

B —Annual or Pre-Seasonal Treatments *(injectable)*

Each kit can only consist of a single category of seasonal allergens (trees, grass ragweed, or weeds). These treatments apply only to patients who are allergic to one of these pollen categories.

Injections are administered once/week for a period of 9 to 11 weeks. The treatment must be finished before the beginning of the pollen season. These treatments must be

repeated every year for 3-5 consecutive years.

C —Treatments in Pill Form *(orally)*

These treatments are only available right now for certain pneumoallergens such as grasses and ragweed, but others are being studied and may eventually be offered to people suffering from allergies.

The first dose must be taken under medical supervision followed by weekly doses taken at home. Secondary and local reactions occur less frequently and less severely than with injections. They must be taken according to the manufacturer's recommendations.

POSSIBLE REACTIONS TO TREATMENTS

1- INJECTION TREATMENTS

Immediate local reactions such as redness, burning, itching or swelling are usually harmless and will disappear after a few hours.

Induration, which is normal after injecting an allergen, must be **meticulously measured 30 minutes after the injection, and noted on the tracking sheet.** The oedema must not exceed 5 cm.

Occasionally, systemic reactions such as hives, coughing, nasal congestion, difficulty breathing etc. may occur that may require quick medical attention. These reactions generally occur within 30 minutes after the injection and are treated effectively by the doctor, using appropriate medications and equipment. This potential risk alone justifies the requirement for a 30-minute observation period.

Swelling reactions to at treatment injection site may continue for several hours and persist up to several days. They are inflammatory and not dangerous, but can be very uncomfortable. Applying ice, taking antihistamines or antileukotrienes might relieve this discomfort.

Even though there is a lower risk of these reactions occurring during the maintenance phase, it still exists, and the recommendations are the same as they are during the progression phase.

2- TREATMENTS TAKEN ORALLY

Different manufacturers provide these treatments, so it is very important to follow their

recommendations regarding how to recognize secondary reactions and the care to provide to patients when they occur.

There are also fewer systemic reactions with these non-injectable treatments. This is because reactions occur more frequently because of injection errors such as injecting the wrong volume, injecting into muscles or capillaries, failing to read the size of the oedema after injection etc.

FREQUENTLY-ASKED QUESTIONS

Are these vaccinations dangerous?

In immunotherapy, we don't use the word *vaccination*. (A vaccine is the injection of a harmless form of an infectious organism, bacteria or virus, in order to prevent or stop the serious illness it would have otherwise caused). Here, we use the word *treatment*.

In immunotherapy, we talk moreso about *treatment.* The allergens injected are *naturally inoffensive* and if the treatment administration protocol is followed meticulously, the risk of a serious systemic reaction is low.

For your safety, always comply with the following directions:

Wait 30 minutes after the injection in the doctor's office. Measure and record the induration at the site of the injection. Do not increase the dose if the induration exceeds 5cm. Do not increase doses during pollen season.

Can doses be spaced out further or skipped entirely?

No

This would require the doctor to reduce the doses, which would slow down the treatment progression and therefore delay the results.

If such a situation occurs, always inform your specialist so that they may adjust the new doses adequately.

Can other medications be taken during pollen season?

Yes... but

Some medications may be allowed to relieve uncomfortable symptoms as needed, provided that they do not hide a reaction to treatment or prevent response to a systemic reaction. **Ask a healthcare professional before taking any medications.**

In some situations, they may prescribe taking an antihistamine before each injection. You must notify your doctor if this was forgotten or altered.

HERE ARE THE STEPS TO FOLLOW ONCE TREATMENT IS PRESCRIBED

Contact your family doctor or a clinic authorized to administer these treatments in order to ensure they are available to do your desensitization according to a predetermined schedule.

Order the treatments in order to have them for the beginning of the injections. Allow two to three weeks to receive them.

WHEN YOU HAVE RECEIVED YOUR KIT, CALL THE NURSE AT THE CLINIC WHERE YOU WILL BE RECEIVING YOUR FIRST TREATMENT DOSE.

Space reserved to identify the clinic

Also call the nurse at this number:

RENEWING THE TREATMENT

You must order a new kit:

When kit's expiration date is imminent, it should be close to the date of the annual visit with the specialist.

When the liquid level in the bottle is low (0.5 cm).

Reminder:

- ✓ The first dose must be administered at the specialist's office.
- ✓ Make an appointment and take into account the preparation time.
- ✓ Bring the ***old*** *and* ***the new kits,*** as well as your injection tracking ***sheets****.*

MEDICATIONS NOT TO TAKE BEFORE INJECTIONS

In some circumstances, the specialist may recommend taking antihistamines before the injections.

Do not take the following medications unless otherwise directed by your specialist:

Antihistamines such as Reactine (cetirizine), Aerius (desloratadine), Benadryl (diphenhydramine) etc., 48 hours before the injection.

Warning, some medications may have similar effects:

Cold medicines (decongestants or cough syrups)

Anti-nausea medication (Gravol/dimenhydrinate), Serc /bethahistine, etc.

H2 receptor blockers/antacids (Pepcid/famotidine), Zantac ranitidine, etc.

Certain antidepressants (Sinequan/Doxepin, Remeron/mirtazapine, etc.).

Beta-blockers such as Monocor/bisoprolol, Tenormin/atenolol, Lopressor/metoprolol, etc., 48 hours before the injection.

Consult your pharmacist to ensure that your medication does not contain these ingredients.

To get a new prescription near your treatment's expiration date or there is a low amount of liquid (0.5 cm) remaining in the bottle.

To get the first dose of a renewal.

If you have a systemic reaction.

If the vaccination schedule contains a delay greater than 14 days (in progression phase), or 8 weeks (in maintenance phase).

For any other questions about your treatment.

Treatment Storage

Treatment must always be kept refrigerated between 2° and 8°C and transported in a small cooler containing ice packs. The treatment must not be in direct contact with the ice packs.

It should never be frozen or overheated, so do not leave it in a vehicle in the summer or

winter.

Restrictive Warning

Please note that this guide provides recommendations consistent with the scientific information available at the time of its publication on (month/year). These recommendations do not in any way replace the opinion of a clinician. If you have any questions, please contact the team of health professionals that will provide you with any information you need. If you misuse the content of this document in any way, Allergo Inc. cannot be held liable for any damages whatsoever in this regard.