ALLERGIES

- Allergies are hypersensitive immune response to substances that are usually harmless to must people. These substances, called allergens, can include pollen, dust mites, spores, pet dander, certain foods, insects stings, and medications. When someone with an allergy encounters an allergens, their immune system mistakenly identifies it as a threat and overreacts, producing various symptoms.

- Common types of Allergies

1. Seasonal Allergies (Hay Fever or Allergic Rhinitis):
2. Food Allergies:
3. Drug Allergies:
4. Insect Sting Allergies:
5. Pet Allergies:
6. Allergic Asthma:

Cause of Allergies

- Allergies are caused by the immune system's overreaction to typically harmless substances, known as allergens. The exact cause of why certain individuals develop allergies while other's do not is complex and involves a combination of genetic and environmental factors. Here are the main contributors:

1. Genetics: A family history of allergies can increase the likelihood of developing allergies.
2. Immune system Response: In individuals with allergies, the immune system mistakenly identifies a harmless substance as a threat and produces antibodies called Immunoglobulin E (IGE). These antibodies trigger the release of chemicals like histamine from the mast cells, leading to allergic symptoms.(most of allergies occurs due to this reason)
3. Environmental factors: Exposure to certain environmental factors can contribute to the development of allergies. These factors include:

   . Pollution:

   . Hygiene Hypothesis:

   . Diet and lifestyle:

4. Common Allergens:

   . Pollen

   . Dust mites

   . Medications: Certain drugs

Site of infection in Allergy

In the context of allergies, the “site of infection” refers to the specific parts of the body where allergic reactions manifest, rather than actual infections. Allergic reactions occur when the immune system overreacts to an allergen. Common sites of allergic reaction include:

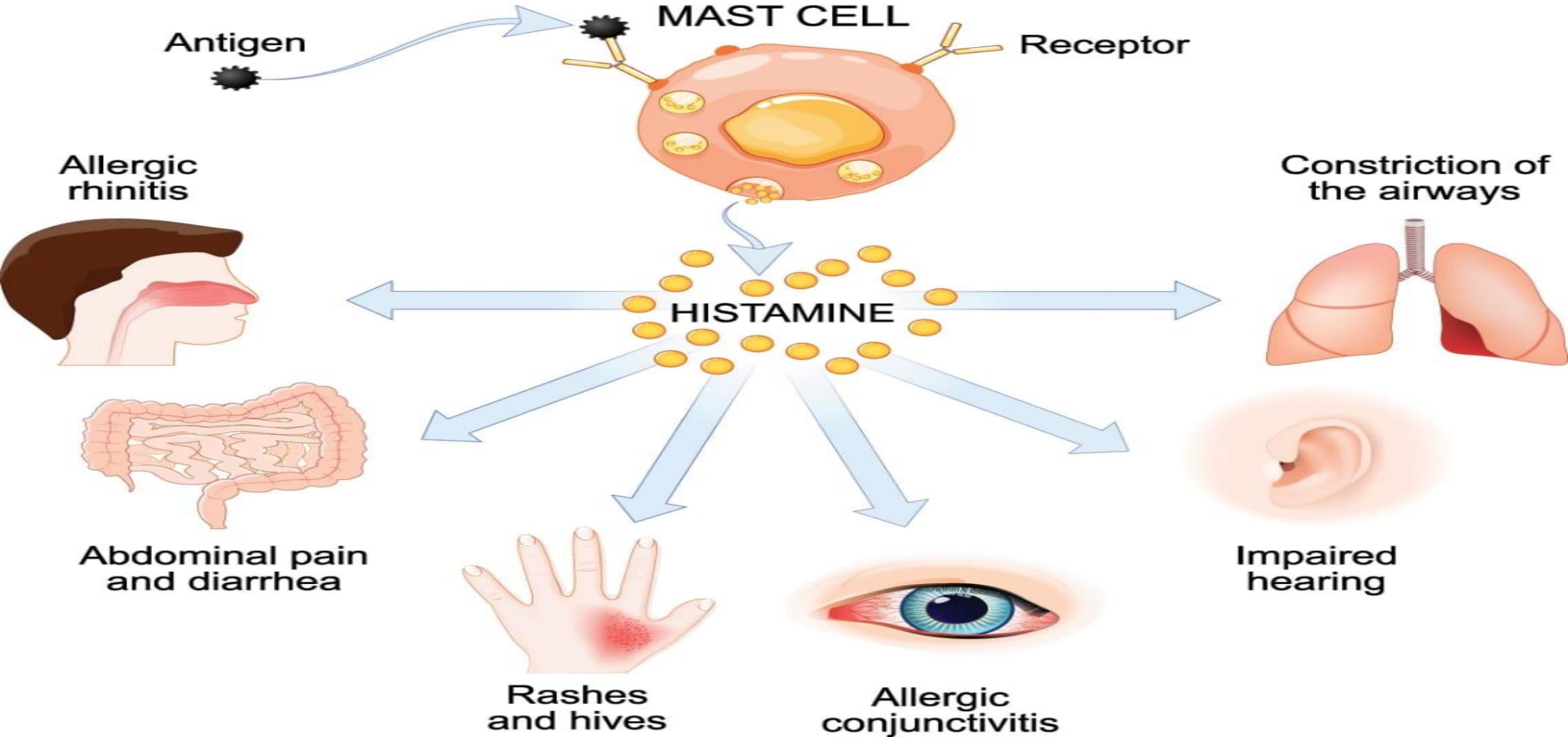
1. Respiratory System:
   . Nose and Sinuses
   . Lungs and Airways:
2. Skin:
   . Dermatitis: Contact dermatitis occurs when the skin comes into direct contact with allergens.
   . Hives (Urticaria): Raised, red, itchy welts on the skin, often due to food allergies, insect stings or medications.
3. Eyes:
4. Gastrointestinal Tract: like food allergies
5. Mouth and Throat:

Mode of transmission of Allergies:

- Allergies themselves are not transmitted between people in the way infectious diseases are. However, the propensity to develop allergies can be influenced by genetics and environmental factors.

HOW ENVIRONMENTAL FACTOR’S CAUSES ALLERGY ?

The mechanisms of allergy



Symptoms of Allergies

- Allergies can manifest with a variety of symptoms, depending on the allergen involved and the part of the body affected. Here are common symptoms associated with different types of allergies:

Respiratory Allergies (e.g., pollen, dust mites, pet dander)

. Itchy or watery eyes . Sneezing . Itchy throat or ears

. Runny or stuffy nose . Coughing . Shortness of breath

Skin Allergies (e.g., contact dermatitis, insect stings, food allergies)

. Rashes or hives (red, itchy bumps or patches on the skin) . Redness

. Itching . Swelling

Food Allergies

. Itching and tingling in the mouth

. Swelling of lips, tongue, faces, or throat

. Stomach pain, vomiting

Insect Sting Allergies

. Localized swelling and redness at the sting site

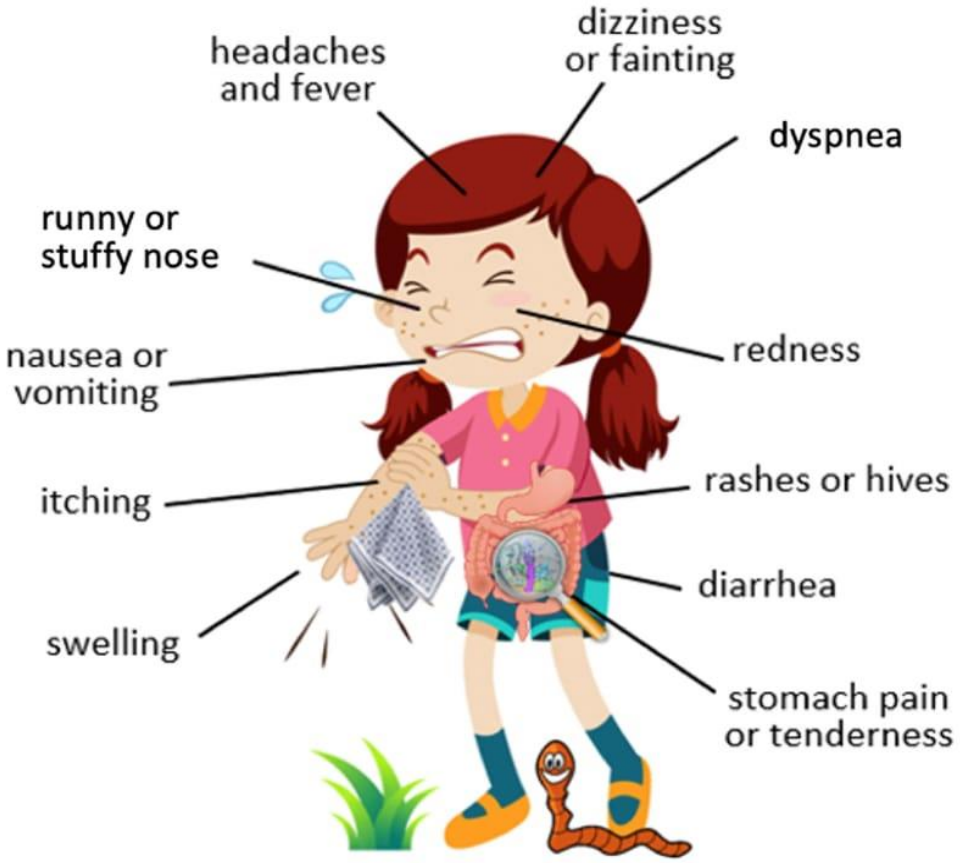
. Itching

. Rash over a large area of the body

Allergic Conjunctivitis (eye allergies)

. Red, itchy eyes . Watery eyes

. Swollen eyelids



Treatment

- Treatment for allergies depends on the type and severity of the allergic reaction. Here are some common approaches:

1. **Avoidance:** The first line of defense against allergies is to avoid exposure to allergens whenever possible. This may involve identifying and avoiding specific triggers such as pollen, dust mites, pet dander, certain foods, or insect stings.

2.Medications:

- **Antihistamines:** These drugs can help relieve symptoms such as sneezing, itching, and runny nose by blocking the effects of histamine, a chemical released during allergic reactions. They are available over-the-counter (e.g., cetirizine, loratadine) or by prescription (e.g., fexofenadine, desloratadine).
- **Decongestants:** Decongestants can help reduce nasal congestion by shrinking swollen nasal passages. They are available in oral forms (e.g., pseudoephedrine) or nasal sprays (e.g., oxymetazoline), but nasal spray decongestants should be used for short periods to avoid rebound congestion.
- **Nasal corticosteroids:** These prescription medications reduce inflammation in the nasal passages and can effectively relieve symptoms such as nasal congestion, sneezing, and runny nose. Examples include fluticasone (Flonase), mometasone (Nasonex), and budesonide (Rhinocort).
- **Bronchodilators:** For allergies affecting the lungs, bronchodilators such as albuterol may be prescribed to relieve bronchospasm and improve breathing.
- **Epinephrine:** For severe allergic reactions (anaphylaxis), epinephrine is used as a life-saving treatment to rapidly reverse symptoms and stabilize blood pressure. It is available in auto-injector devices (e.g., EpiPen) and should be carried by individuals with known severe allergies.

3. **Immunotherapy:** Allergy shots (subcutaneous immunotherapy) or allergy tablets (sublingual immunotherapy) are options for individuals with allergic rhinitis, allergic asthma, or insect sting allergies who do not respond well to medications or have significant allergy symptoms despite allergen avoidance. These treatments involve gradually exposing the individual to increasing doses of allergens to desensitize the immune system and reduce allergic reactions over time.

4. **Other treatments:** Depending on the specific allergy and symptoms, other treatments may be recommended, such as eye drops for allergic conjunctivitis, topical corticosteroids for skin allergies, or oral corticosteroids for severe allergic reactions.

It’s important to work with a healthcare provider to develop an individualized treatment plan tailored to your specific allergies, medical history, and lifestyle. This may involve a combination of strategies to effectively manage symptoms and improve quality of life.

Essential nutrients needed during Allergy

- During allergies, ensuring you maintain a balanced diet that supports your immune system and overall health is crucial. While there aren't specific nutrients that directly treat allergies, certain nutrients can help alleviate symptoms and support your immune system. Here are some essential nutrients that can be beneficial during allergies:

1. Vitamin C: Known for its antioxidant properties, vitamin C can help reduce inflammation and boost your immune system. It's found in fruits like oranges, strawberries, and kiwi, as well as vegetables like bell peppers and broccoli.
2. Vitamin E: Another antioxidant, vitamin E can help protect your cells from damage caused by inflammation. You can find vitamin E in nuts, seeds, and vegetables oils.
3. Omega-3 fatty acids: Found in fatty fish like salmon, mackerel, and sardines, as well as flaxseeds, chia seeds, and walnuts, omega – 3 fatty acids have anti-inflammatory properties that may help alleviate allergy symptoms.
4. Quercetin: A flavonoid found in foods like onions, apples, berries, and leafy greens, quercetin has anti-inflammatory and anti-histamine properties that may help relieve allergy symptoms.
5. Probiotics: These "good" bacteria can help maintain a healthy balance of gut flora, which is important for a strong immune system. Probiotics can be found in fermented foods like yogurt, kefir, sauerkraut, and kimchi.
6. Zinc: This mineral plays a role in immune function and may help reduce the duration and severity of allergy symptoms. Zinc-rich foods include meat, shellfish, legumes, seeds, and nuts.
7. **Nettle**: While not a nutrient per se, nettle is a herb that has been traditionally used to alleviate allergy symptoms due to its anti-inflammatory properties.

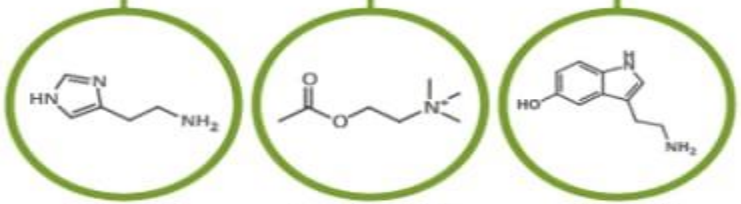
THE CHEMISTRY OF STINGING NETTLES

Stinging nettles are an unpleasant supplement to country walks. Their stings cause tingling, inflammation, and pain that can last for several hours. But what are the chemicals behind their venom, and what truth is there in some of the oft-suggested remedies to try and relieve the pain of a nettle sting?

STINGING NETTLE VENOM

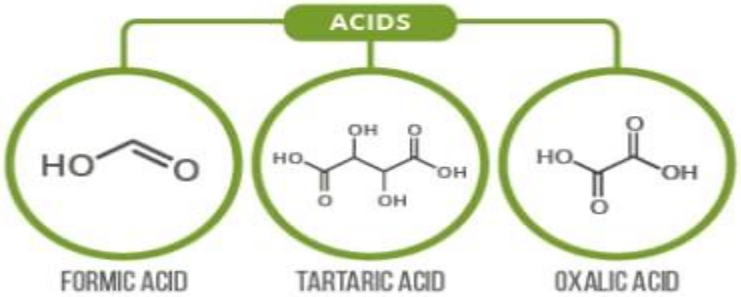
Stinging nettles are covered in tiny hollow hairs (trichomes). When you brush against them, you break the fragile silica tips off the hairs, and they then act like a needle, piercing the skin, and causing the nettle's venom to be injected.

NEUROTRANSMITTERS



The primary source of pain from nettle stings was orginally thought to be formic acid, but it is present in too low a concentration. Histamine, acetylcholine and serotonin cause inflammation & pain, whilst tartaric & oxalic acid in some nettle species have been linked with extended pain duration.

ACIDS



NETTLE STING REMEDIES

DOCK LEAVES

Dock leaves are an oft-suggested nettle sting remedy. Some incorrectly state that dock sap is alkaline, and it neutralises the acidic nettle venom. It's also claimed that dock leaves contain a natural antihistamine; there is no evidence of this. There is some evidence it could contain a chemical that reduces the effect of serotonin in the venom.

ANTIHISTAMINES

Antihistamine creams combat the action of histamine, blocking the receptors that it usually binds to. Histamine isn't the only sting component, but by preventing its action the inflammation and some of the pain from the sting can be reduced. This is likely the most effective remedy. Topical corticosteroid medications can also help prevent histamine's effects.

OTHER REMEDIES

Calamine lotion is often claimed to help, and as it has an anti-pruritic (anti-itching) effect, it may provide mild relief (though its anti-pruritic properties have been disputed). Plantain leaves and urinating on the sting are other common suggestions, though again, there is no scientific evidence that these remedies have a chemical effect.