In this lecture we will discuss 2 main rhinopathologies: rhinitis and sinusitis. Both are very common pathologies seen in general practice and antihomotoxic therapy has shown to be very effective in treating them.
Embedded in the facial bone structure the nasal airway provides, beside the mouth, one of the two breathing pathways. For many reasons nasal breathing is preferable to oral breathing.

The nasal cavity is divided vertically in the center by a cartilaginous septum and is in communication with the paranasal sinuses, named according to the bone in which they lie (maxillary, frontal, ethmoid and sphenoid sinuses). Paranasal sinuses are mucus-lined air-filled bony cavities. The significance of these cavities or sinuses is not completely clear, but they do decrease the weight of the bones and buffer trauma, increase the voice resonance, provide an insulating effect on the delicate roots of some upper teeth and portions of the eye structures, in addition to modifying the inhaled air (heating and humidifying it).

Also, the Eustachian tube or pharyngotympanic tube (see figure), connecting the middle ear to the lateral nasopharynx is in direct contact with the upper respiratory pathway. The Eustachian tube aerates the middle ear and allows air pressure changes between the middle ear and the external air in order to guarantee a good functioning of the tympanum.
On each lateral wall of the nasal cavity there are 3 turbinates (inferior, middle, superior), which are bony shelves that increase the surface area, thereby allowing more effective “air treatment”. The presence of turbinates also provide a partial obstruction that generates air turbulence, thereby maximizing mucosal contact of the incoming air.

In the space between the middle and inferior turbinate is the middle meatus, into which the maxillary and most of the ethmoid sinuses drain.

The nasal cavity being covered with a highly vascular mucosa will warm and humidify incoming air. Polyps may also develop between the turbinates, often in association with allergy, asthma, cystic fibrosis or even with aspirin use/abuse.

In figure 2 we see the location of the olfactory bulb exactly at the most strategic location possible: in the 90 degree angle, where the full speed inspired air contacts the superior mucosal wall. In this way even the smallest concentration of aromatic substances or any other olfactory stimulating substance is detected.
The nasal physiologic functions, such as warming and humidification, are vital for upper airway function. It has been estimated that an adult inspires up to 10,000 liters of air daily (Kerr, 1997).

Nasal breathing is healthy breathing as the air is treated in many ways by the structures of the nose, paranasal sinuses and the peculiarities of their lining mucosa.

1. **Filtering the air**
   Filtration of environmental particles occurs first in the nasal cavity. Nasal mucus traps incoming particulate matter. The largest particles are filtered by nasal hairs (vibrissae).

2. **Moistening the air**
   Humidification is another important process of nasal physiology. The nasal cavity is covered with a highly vascular mucosa that warms and humidifies incoming air, increasing the relative humidity to 95% before air reaches the nasopharynx.

3. **Warming the air**
   Inhaled air must have a temperature between at least 33 and 35 degree Celsius to not cause pathological reactions at the level of the alveoli. Again, by the turbulence, the cold air is forced to make contact with the warm surface of the mucosa and thus heated during its passage. A number of nasal neurovascular reflexes occur as well. If needed, underlying capillaries will dilate and warm up the upper laying mucosa, giving more heat to the passing air.

4. **The sense of smell**
   Nasal aerodynamics also contributes to the olfactory system. In addition, the active process of sniffing allows environmental particles to reach the olfactory system located at the skull base.
   Even the smallest particles are detected by the olfactory receptors, warning us about danger, food, or any other biologically meaningful sign detectable through the sense of smell.

5. **The nasal cavity as a sound box**
   The nose and sinuses serve as contributing factors in voice modification. Authors have noted that nasal aerodynamics may have a role in modifying high-frequency sounds and consonants (Kerr, 1997).
   The resonance created within the nasal cavity is characteristic, similar to a finger print and for each person is different (except in identical twins). Nasal pathologies such as polyps or rhinitis will directly influence the resonance spectrum and we will “hear” that the person has a cold or something has changed in his/her voice.
Definition of rhinitis

• Rhinitis is an inflammation of the nasal mucosa

Acute rhinitis is defined as an inflammation of the mucosal surface of the nasal cavity. Objective signs (rhinoscopy): presents differently depending on the type and cause. E.g. for acute rhinitis: redness – swelling – hypersecretion
Subjective: nasal discharge (rhinorrhea) – sneezing – congestion – discomfort etc. depending on the cause.

Types of Rhinitis

Acute rhinitis – the usual manifestations are seen in a common cold that induce vasodilation and edema of the nasal mucous membrane with resultant rhinorrhea and obstruction.

Causes:
- Rhinoviruses (over 100 serotypes) (in about 50% of ‘colds’)
- Other viruses may include: coronaviruses, influenza, parainfluenza and syncytial viruses (these may present initially as common ‘cold’)
- Bacterial infections: include staphylococcal, streptococcal and pneumococcal

Chronic rhinitis – usually is a repetitive or prolongation of acute/subacute inflammatory processes caused by the same microbial agents as described above, but may also be due to less common conditions such as TB, histoplasmosis, rhinosporidiosis (fungal infections), leishmaniasis, rhinoscleroma etc. that are characterized by granulomatous formations and tissue destruction.

Atrophic rhinitis – characterized by atrophy and sclerosis of the nasal mucous membranes (normal ciliate pseudo-stratified columnar epithelium changes to stratified squamous epithelium, and with reduced thickness and number of vessels. The condition usually occurs with advanced age and in Wegener’s granulomatosis

Vasomotor rhinitis – the cause is not certain. No allergens can be identified, but dry air seems to aggravate the condition. It is a chronic condition with intermittent vascular engorgement of the nasal mucous membranes responsible for watery rhinorrhea and sneezing.
Causes of acute rhinitis

- Upper respiratory infection
- Common cold
- Influenza
- Hay fever
- Bacterial infections
- Certain medications

Many causes are described for acute rhinitis. The most common are:

**Upper respiratory infection**
Micro-organism infection at the level of the nasal mucosa will trigger inflammation, a mobilization and manifestation of local defense, meant to eliminate the foreign organisms.

**Common cold**
Viral infections, of mainly rhinoviruses, very common in wintertime, will trigger what is called the “common cold”.

**Influenza**
Influenza, caused by the influenza virus, will initially trigger an acute rhinitis.

**Bacterial infections**
Bacteria can cause acute rhinitis. This type of rhinitis is mainly seen as a secondary infection, following a viral infection

**Hay fever**
Hay fever induces an acute rhinitis but due to an allergic reaction of the organism against an allergen such as pollen, house dust or any other substance that the patient is allergic to. A clear differentiation should be made between allergic rhinitis and acute rhinitis due to a common cold, as in allergic rhinitis the inflammatory reaction is not purposeful, as it is in acute rhinitis due to common cold.

**Certain medications**
Some medications are able to trigger inflammation of the nasal mucosa. It is often seen after the (ab-)use of nasal sprays. In this case the acute rhinitis is called “rhinitis medicamentosa”.
Acute rhinitis may present with a number of objective and subjective signs and symptoms:

**Stuffiness** - as the nasal mucosa is congested through vasodilatation and hypersecretion. Stuffiness is the main reason for oral breathing in conditions of rhinitis, increasing the risk for lower respiratory infections due to the non-treated air reaching lower levels of the respiratory structures.

**Sore throat** - rhinitis often will also affect adjacent mucosae, first of the nasopharynx, causing sore throat. Laryngitis or even tracheitis and/or bronchitis may follow.

**Headache** - is often seen in acute rhinitis. It might be sinus-related or purely due to the extended feeling of pressure in the nasal cavity.

**Runny nose** - especially in the beginning of a viral rhinitis, is often seen. After a few days the nose can “dry up”, causing a sensation of burning and difficult breathing.

**Cough** - is not directly related to the inflammation of the nasal mucosa. It is the consequence of the type of micro-organism infecting the body or to a progressing respiratory infection that reaches the nasopharynx and beyond.

**Malaise** is, as in most infections, often seen. After a while a feeling of tiredness is also often observed.

**Loss of appetite** is a symptom of the general condition the patient is in. Especially in children a loss of appetite can be seen during acute rhinitis.
Rhinitis = inflammation

What is inflammation?

• Inflammation is a (usually local) pronounced manifestation of the body’s own defense system

We mentioned already that rhinitis is an inflammation of the nasal mucosa. Inflammation is a local pronounced manifestation of defense. The organism is mobilizing defense cells to eliminate intruding homotoxins. This defense is purposeful (if not allergic) and should therefore not be suppressed as then the homotoxins will remain for a longer period.
Biophysical changes during inflammation

Characteristics of inflammation:
• pain
• swelling
• redness
• feeling of warmth
• and loss of function in the affected tissue

The biophysical causes of these symptoms are:
• an increased blood supply (redness, warmth)
• an increased permeability of the vascular wall
• easier elimination of fluids and defense cells, metabolic substances etc. (swelling, pains, loss of function through pressure)

As in any inflammation, rhinitis and sinusitis are characterized by symptoms such as pain (burning or tickling sensation), swelling (nose obstructed), redness, catarrh, feeling of warmth (due to vasodilatation) and loss of function of the affected tissue (the nasal mucosa will not "treat" the air as it is supposed to do (risks for lower respiratory infections due to mucosal deficient function or oral breathing).

The biophysical changes during inflammation are at the origin of the clinical symptoms:
There is an increased blood supply by vasodilatation and an increased permeability of the vessel walls causing extravasations of fluids.
The biophysical process of inflammation are deployed via a multiple triggering of mediators. This complex cascade will end up with pro-inflammatory mediators causing finally the clinical symptoms seen in the patient. Especially at the level of the degranulation of the mast cell, liberating histamine, heparin and phospholipids, the inflammation pathway is enhanced.
If an inflammation is fully expressed and shows tendency to extend the terrain of affected tissue, hormonal steering is added to the cytokine-activities already existing and will keep the process between “acceptable levels”. This is done through many feed-back systems, keeping the process balancing around a set point.

Desoxycortisol will facilitate TH-1 inflammatory reactions and cortisol will inhibit them. Both hormones have an opposite objective effect and by using them both a fine tuned steering of the inflammatory process is possible. It is as driving a car with one foot on the gas pedal and other on the break. Using both feet simultaneously a subtle acceleration or deceleration is achieved.
Many forms of rhinopathologies are known:

Viral rhinitis: rhinitis caused by viral infection
Bacterial rhinitis: rhinitis caused by bacterial infection
Allergic rhinitis: rhinitis caused by allergen
Rhinitis atrophicans: rhinitis in which we see an atrophy of the nasal mucosa
Rhinitis sicca: rhinitis in which we see a completely dried up mucosa
Rhinitis hyperplastica: rhinitis with an oversecretion of (often thick) mucosa
Rhinitis medicamentosa: rhinitis caused by the use or abuse of nasal medication (mostly sprays)
Ozena: bacterial infection of the nose causing destruction of nasal tissues
Organic and mechanical obstructions: inflammation due to a foreign object in the nasal cavity (in children often due to objects pushed in nasal opening: e.g. a pea
Sinusitis: inflammation of the sinuses, mostly one or both of the frontal sinuses
Polyps: polyps in the nasal cavity obstruct the air passage, forcing the patient to oral breathing
Sinusitis is a particular form of a rhinopathology. Although often seen as a complication after a rhinitis, this is not always the case. Many parameters might influence the occurrence of a sinusitis, such as the diameter of the ventilation canal or meatus (obstruction risk).

A sinusitis can be acute due to an acute infection, but we often see that the same patients present recurrences or even a continuous chronic sinusitis.
In conventional medicine different medications are developed to treat inflammation in general. Some of them are also used to treat rhinitis, and sinusitis particularly.

**Mast cell stabilizers** are molecules that blocks the receptors of mast cells so that they do not degranulate. Consequence is that essential substances for expressed inflammation are not liberated. Mast cell stabilizers are used prophylactic, especially in the treatment of hay fever.

**Cyclo-oxygenase inhibitors** are the most known antiphlogistics. They inhibit the synthesis of pro-inflammatory prostaglandins and block the inflammatory process at the end of the cascade. COX-inhibitors have numerous side effects and should not be used for long term treatments.

**Lipo-oxygenase-inhibitors** inhibit the synthesis of leukotrienes and are mainly used in asthmatic conditions as leukotrienes create a spasmodic effect at the level of the alveoli.

**Corticosteroids** are the strongest inhibitors of inflammation as they act at different levels of the inflammatory process at the same time. Beside a strong blocking effect they have a destructive effect on the tissue they are used in/on.

**Anti-histamines (H1-blockers)** block histamine receptors. As a consequence, vasodilatation is strongly inhibited. Anti-histamines can cause a variety of side effects such as dry mouth, fatigue and blurred vision.
The main groups of medications used for the treatment of rhinitis are:

- Antihistamines
- Corticosteroids
- Decongestants
- Antibiotics
- Cromolyn sodium
- Anticholinergic drugs
Disadvantages of using conventional nasal medications

- Block the autoregulation
- Atrophy of the nasal mucosa
- “Atrophication” of the immune system

Most conventional medications used in rhinitis and sinusitis have a few risks in common, especially if used on long term:

The inflammation is an auto-regulating process, meant to eliminate homotoxins in the affected tissue. Blocking this system by suppressing one or more pathways can have rigidity consequences for the future.

Many molecules used in conventional nasal drugs are causing atrophy of the nasal mucosa. Corticosteroids especially should not be used on long term basis!!! Blocking off defense mechanisms might disturb the immune system itself.
For the antihomotoxic treatment of rhinitis and sinusitis, Euphorbium comp.-Nasal Spray is available as nasal spray, oral drops and even ampules.
We should clearly differentiate Euphorbium comp.-Nasal Spray with another antihomotoxic drug called Luffeel. Luffeel is indicated in allergic rhinitis and has a totally different formula.

Euphorbium comp.-Nasal Spray is indicated in acute and chronic rhinitis and sinusitis and is less effective in allergic rhinitis.
The advantages of Euphorbium comp.-Nasal Spray

- carrier is a 0.9% NaCl-solution
- for all types of rhinitis and sinusitis; no absolute differential diagnosis required for accurate prescription of the product
- 20 ml flacon
- after opening, do not keep for longer than 1 month
- not habit-forming
- no contra-indications (except oversensitivity to benzalkonium chloride)
- no interaction with other medication
- for all ages, even infants
- proven therapeutic effect
- does not block the body’s natural regulation mechanisms
- no reactive hyperemia
- no drying out of mucous membranes or risk for rhinitis medicamentosa

Compared to conventional medications used in rhinitis and sinusitis we see a number of advantages in using Euphorbium comp.-Nasal Spray:

The carrier is a 0.9% NaCl-solution (has an immediate cleansing effect on the nasal mucosa)
For all types of rhinitis and sinusitis; no absolute differential diagnosis required for accurate prescription of the product
20 ml flacon (most sprays are in 10 or 15 ml)
Not habit-forming, not even after long term use
No contra-indications (except hypersensitivity to benzalkonium chloride)
No interactions with other medications have been seen
For all ages, even infants
Proven therapeutic effect
Does not block the body’s natural regulation mechanisms
No reactive hyperemia or rebound effect
No drying out of mucous membranes or risk for rhinitis medicamentosa
Other forms of packaging: drops and ampules

- encapsulated sinusitis
- catarrh of the Eustachian tube
- moisture collected in the middle ear / in connection with otitis media
- intolerance towards benzalkonium chloride
- defective motoricity
- very chronic rhinitis sicca

There are a few reasons why Euphorbium comp.-Nasal Spray is also available in other galenic forms. As the spray has a mainly topographic effect, systemic strategy might be more effective in some cases mentioned on the slide above. Problems in handling the nasal spray (e.g. rheumatic fingers) or the need to use cocktail therapy protocols might be a reason to use other galenic forms like drops or injections.
Causes of Respiratory Infections

• Acute rhinitis: nearly 100% viral (bacterial mainly as secondary infection)
• Acute sinusitis: 15% - 20% viral 80% - 85% bacterial
• Chronic sinusitis

Acute rhinitis is mainly viral induced. Some literature even mentions a close to 100% viral cause and sees the bacterial infection mainly as secondary, as a complication.

Acute sinusitis is according to the literature only for 15 till 20% virally caused and for more than 80% bacterial.
An acute rhinitis or sinusitis is at an orodermal level on the Disease Evolution Table. A viral infection is always an intra-cellular intoxication, positioning the infection at the right side of the Regulation/Compensation Division. A bacterial rhinitis is an inflammation phase. When the defense system is efficient, a viral rhinitis quickly shows a Health Evolution towards the inflammation phase on the Disease Evolution Table.
Risks of suppression therapy in rhinitis & sinusitis

- Damage to the mucous membranes
- Causing reduced function (filtering, warming, humidifying, …)
- Risk of regulation rigidity
- Complications into lower airways
- Habit forming
- Side effects

More than one reason to think twice!!!

There is more than one reason why we should well consider the use or not use of conventional medications in rhinitis or sinusitis. As the slide above mentions, a number of risks are involved when suppression therapy is used:

- Damage to the mucous membranes
- Causing reduced function (filtering, warming, humidifying, …)
- Risk of regulation rigidity
- Complications in lower airways structures
- Habit forming
- Side effects
Scientific arguments

Antiviral action of a Homeopathic Medication
Glatthaar-Saalmüller, B

Euphorbium compositum nasal spray has been tested and monitored in different studies. The *in vitro* study of Metelmann and Glatthaar-Saalmüller showed direct inhibiting effects on the proliferation of certain rhinitis inducing viruses.
3 groups of plaques with cultured test cells were used.

-1. The first group was infected with the virus together with the test substance Euphorbium comp. -Nasal Spray

-2. The second group was infected with the same virus together with a saline solution (carrier in the Euphorbium comp. -Nasal Spray and known for having a therapeutic effect by itself in rhinitis). The saline solution was used as a placebo to differentiate from the active components in the Euphorbium comp. -Nasal Spray formula.

-3. The third group only the saline solution was added to provide a negative control.
The slide above shows the test setup. The number of affected cells were counted and compared to the initial situation. By this a proliferation growth could be determined and the inhibition effect of Euphorbium comp. -Nasal Spray versus the placebo measured.
The inhibition on the proliferation (versus placebo) by Euphorbium comp. -Nasal Spray was:

35% for herpes simplex virus (HSV-1)
35% for respiratory syncytial virus (RSV)
15 % for Influenza A virus

By this in vitro test it was proven that Euphorbium comp. -Nasal Spray inhibits the viral proliferation of RSV, HSV-1 and Influenza A virus. Especially the results on RSV are interesting as acute rhinitis is often caused by this virus in winter time, especially in children.
Euphorbium comp.-Nasal Spray indeed strengthens the immune system, inhibiting the proliferation of certain rhinitis inducing viruses. Many hypotheses remain open although analogous other known immunomodulating effects of antihomotoxic drugs are possible. Euphorbium might induce an increased release of interferon gamma, inhibiting viral propagation. Its “down regulating” effect on the inflammatory process may be due to an increased secretion of transforming growth factor beta, inhibiting the TH-1 and TH-2 pathway in inflammation. Research showed Euphorbium comp.-Nasal Spray (as component) to induce the secretion of a high amount of TGF-beta.

In practice, Euphorbium comp.-Nasal Spray has shown to be very effective in acute and chronic rhinitis and sinusitis (1), and therefore should be the number one choice before more aggressive and suppressive medications are used.

(1) Ammerschläger, H. et al, Treatment of Inflammatory Diseases of the Upper Respiratory Tract – Comparison of a Homeopathic Combination Preparation with Yylometazoline, Forschende Komplementärmedizin und Klassische Naturheilkunde, 2005; 12, 24-31
Important

• Euphorbium comp.-Nasal Spray is indicated in most acute rhinitis and sinusitis. Allergic rhinitis however is the main indication for Luffa comp.-Heel / Luffeel nasal spray
• Chronic rhinitis and sinusitis should be approached therapeutically conform to the 3 pillars of antihomotoxic treatment.

Euphorbium comp.-Nasal Spray indeed is indicated in most acute rhinitis and sinusitis. As mentioned before a particular form of rhinitis is the allergic one. The antihomotoxic medication „Luffeel” (nasal spray and tablets in most countries) is most indicated to treat it.

Chronical forms of rhinitis and sinusitis will be more located at the right side of the Disease Evolution Table and need to be treated with more than an immunomodulator alone, although inflammation is the main characteristic. Drainage and detoxification and also cell support for the affected tissue cells (mainly mucosa) is needed. To set up a therapy plan for chronic rhinitis and/or sinusitis please study reference lecture „IAH AC The 3 pillars of antihomotoxic treatment and the treatment plan“