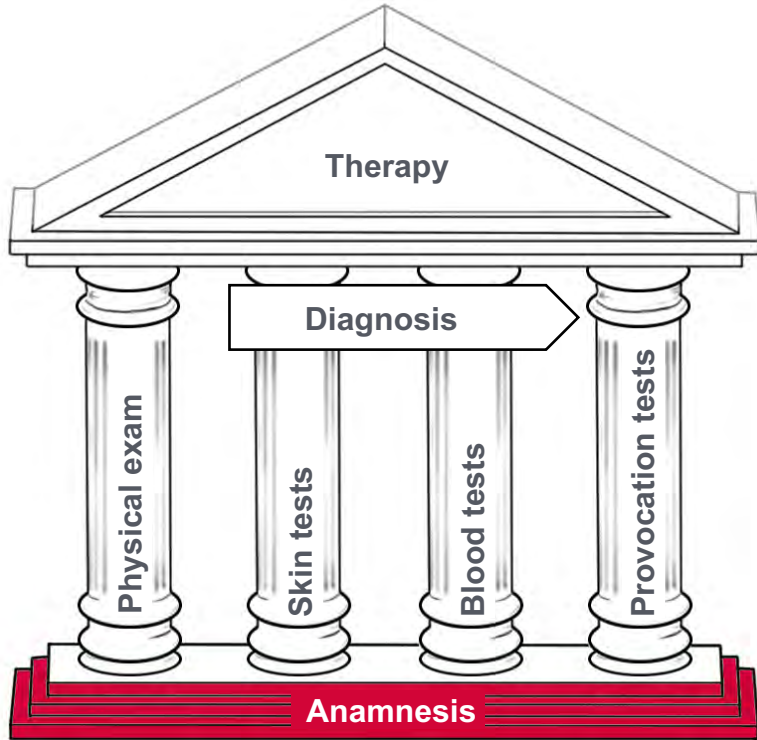


**University  
of Basel**

# **Diagnosing immediate type allergic disorders**

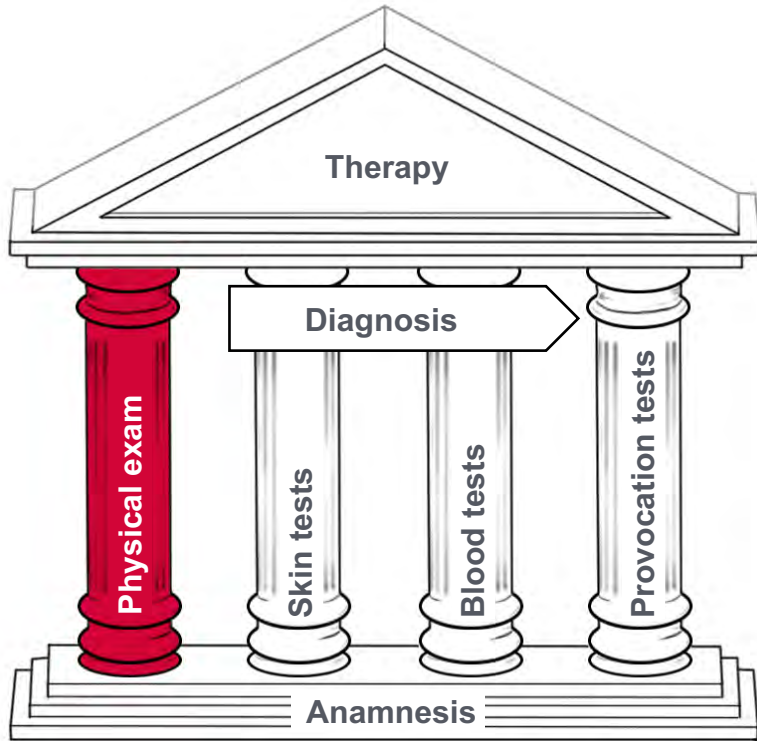
Prof. Andreas J. Bircher

# Anamnesis



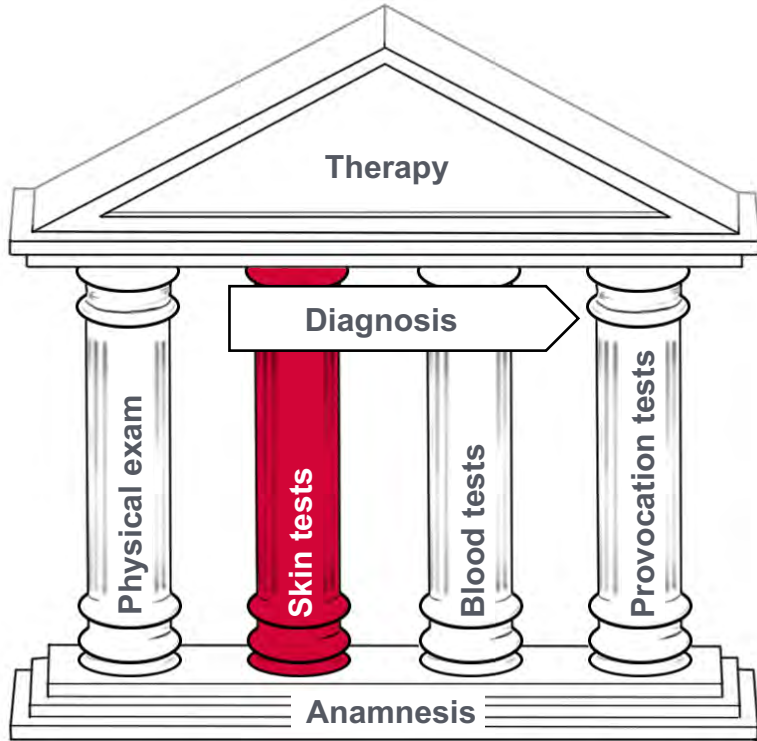
- History of personal / familial allergies
- Type / evolution of symptoms
- Suspected elicitors / known allergens

# Physical examination



- Physical exam of the skin, the mucosa of eyes and nose, the lungs and other organs
- Optionally, further examinations including lung function test, methacholine provocation test, sonography or X-ray

# Skin tests

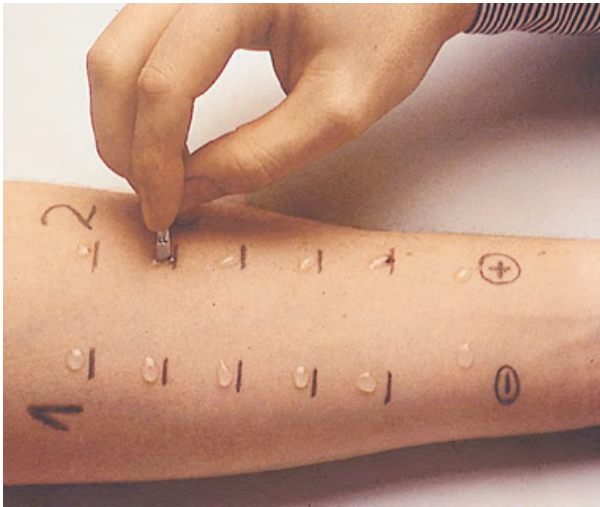


- Skin prick test
- Intradermal test

# Skin tests

## Skin prick

The allergen is applied using a prick needle.



Apply allergen



Measure skin reaction

# Skin tests

## Intradermal test

The allergen is applied using a syringe.

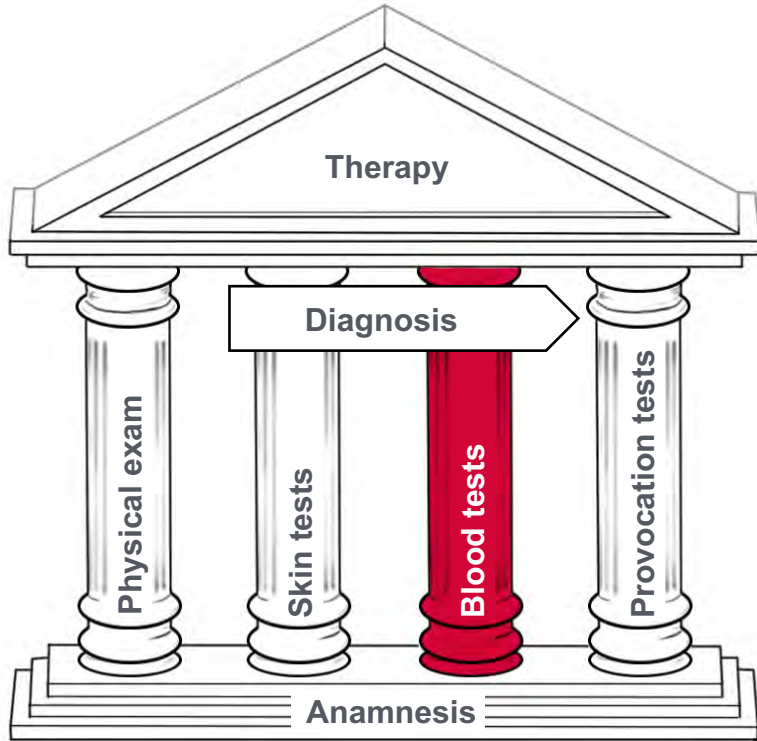


Apply allergen



Measure skin reaction

# Blood tests



- IgE determination using ELISA
- Basophil activation and degranulation test using FACS



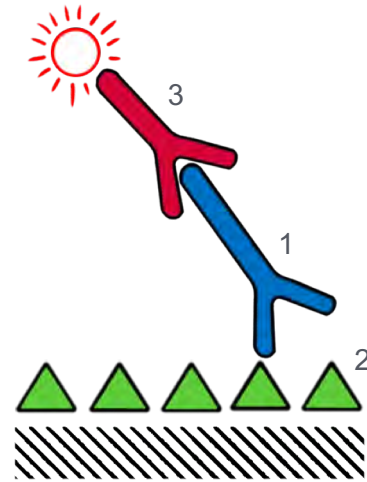
# Blood tests

## IgE determination

Using ELISA (= Enzyme-Linked-Immunosorbent-Assay)

### Classical method

Specific **IgE** (1) binds to attached **allergens** (2). This IgE is then marked using a **Anti-IgE-antibody** (3) with a fluorescent tag.



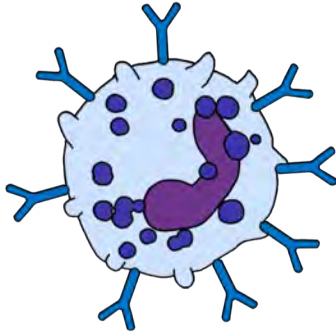
# Blood tests

## Basophil degranulation test

Using FACS (= Fluorescence-Activated-Cell-Sorting)

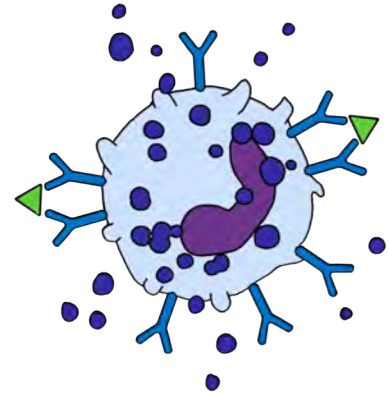
### Sensitization

Specific IgE are bound to surface of basophils.

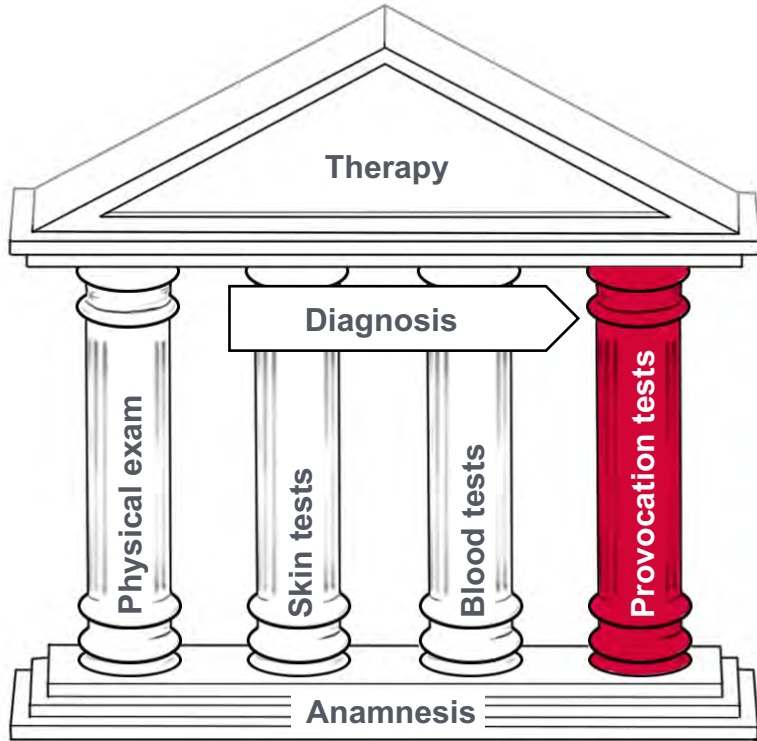


### Re-exposure

Allergen binding causes cross-linking of IgE on basophils, degranulation of the cell and release of histamine and other mediators.



# Provocation tests



- Conjunctival and nasal provocation

# Provocation tests

## Conjunctival and nasal provocation



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Marielle Volz

**Conjunctival provocation**



**Nasal provocation**