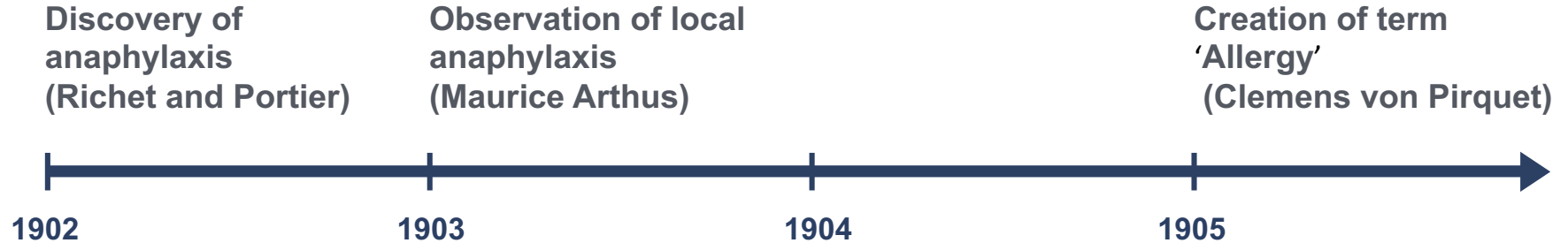


**University  
of Basel**

# **A carriage ride in Central Park**

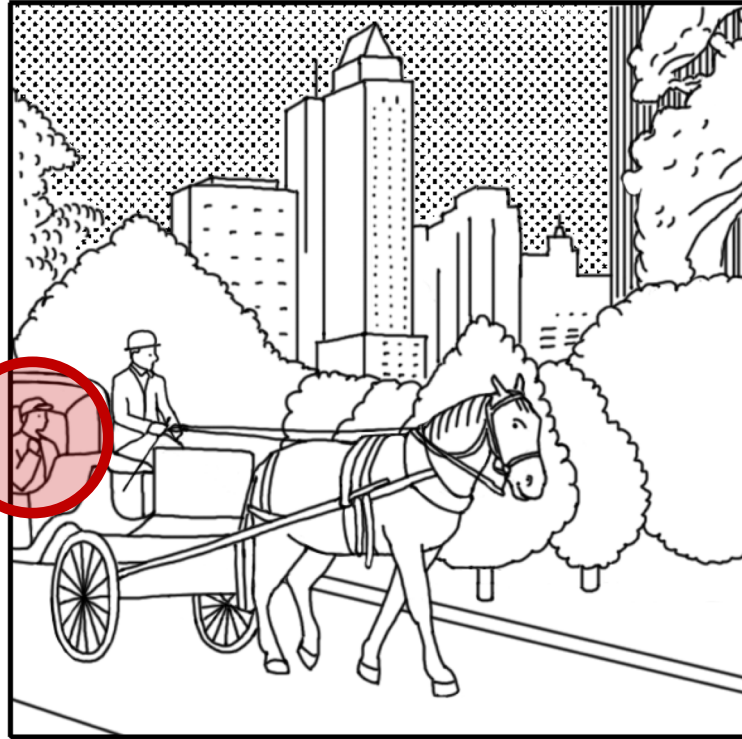
Prof. Andreas J. Bircher

# Discoveries stimulate research



What soluble serum protein or cell provokes the observed effects?

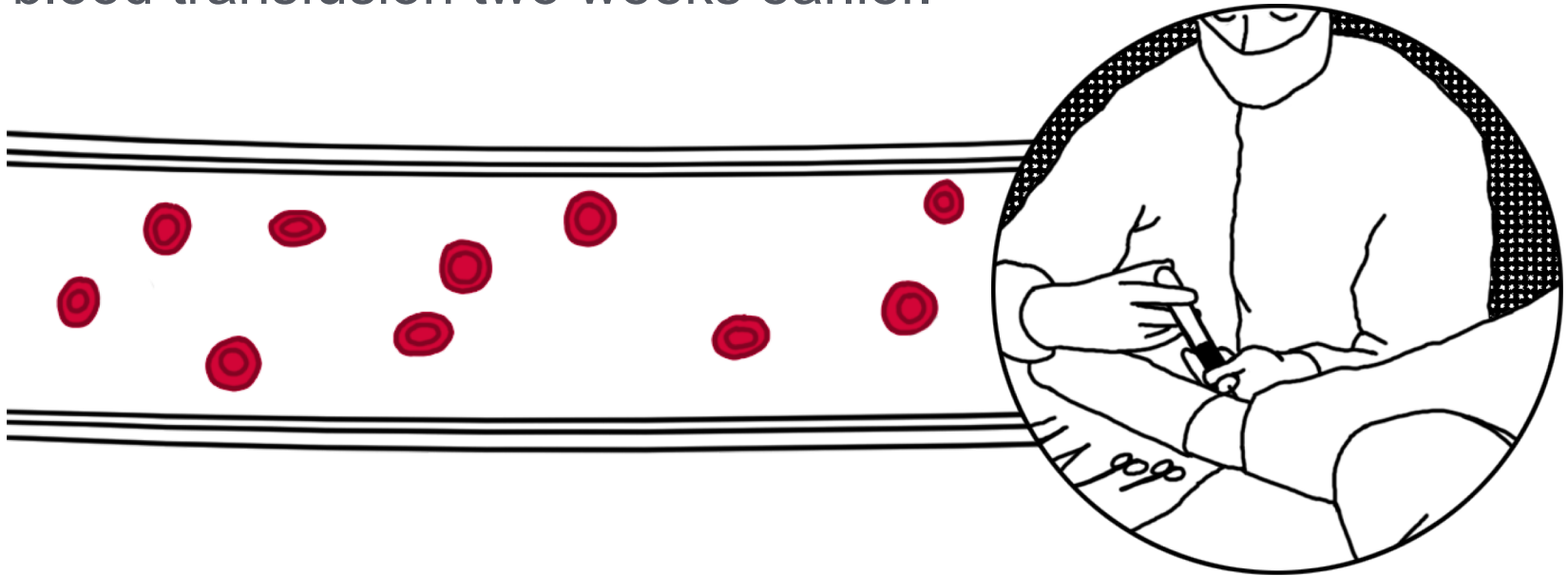
# 1919: Central Park, New York



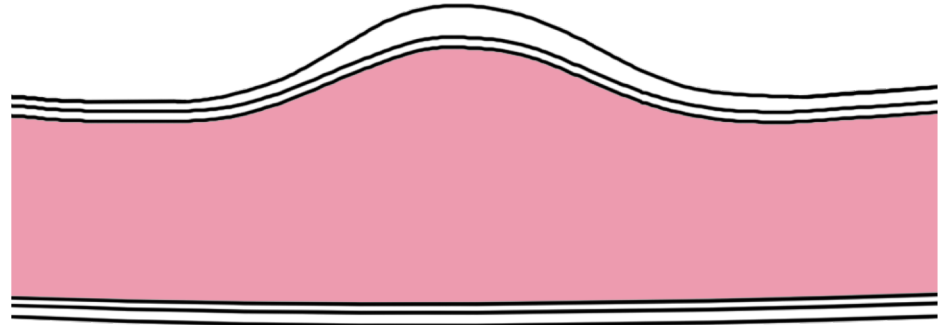
- Waiter, 35 years old
- experiences asthmatic attack, when entering horse carriage
- No previous allergic reactions

# 1919: Central Park, New York

Suffering from anaemia, the patient had received a blood transfusion two weeks earlier.



# 1919 Tests

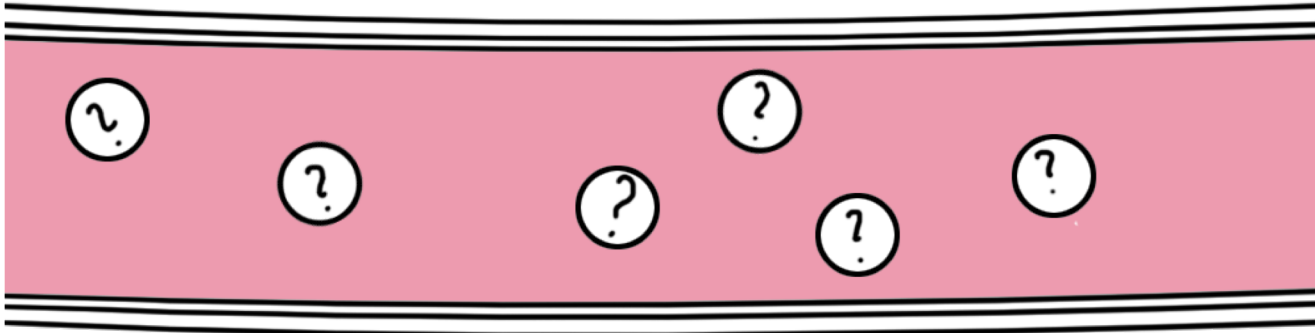


- Positive testing to horse at a dilution 1:20'000
- Blood donor: chronic asthma and bronchitis. Positive testing to horse at dilution 1:50'000

Dr. M. Ramirez

# 1919 Tests

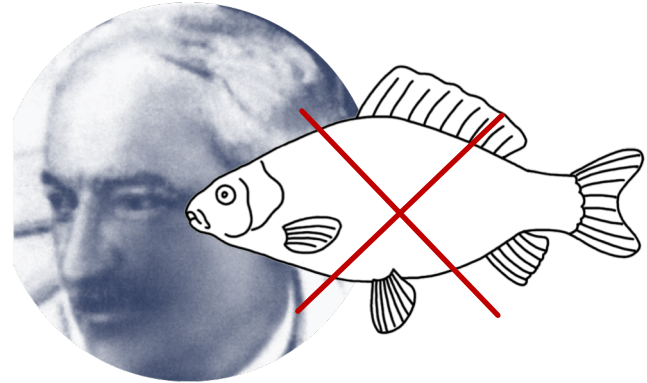
- Source of allergic reaction = transfer of ‘anaphylactic reaction bodies’.
- The patient’s allergic condition disappears after a few weeks.



# 1921, Hygiene Institute Breslau (Wroclaw)



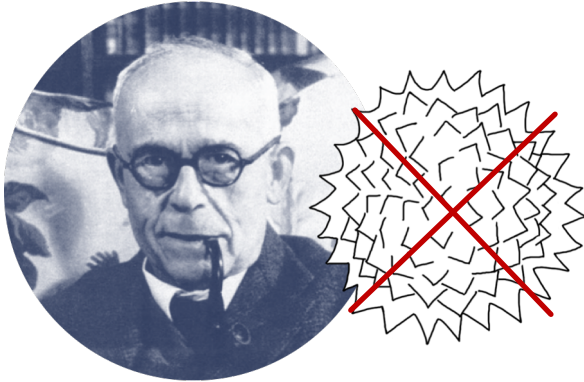
Carl Prausnitz



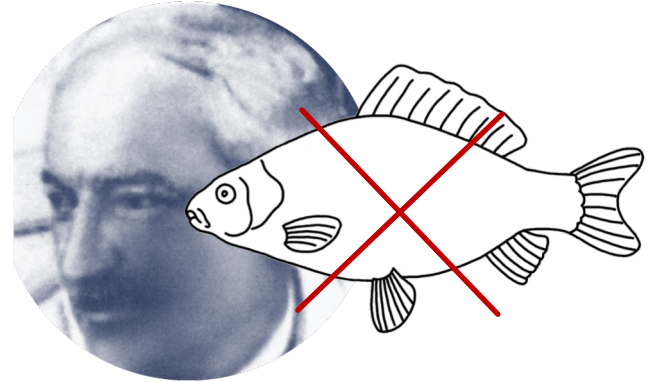
Heinz Küstner



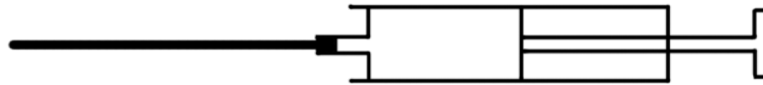
# 1921, Hygiene Institute Breslau (Wroclaw)



Carl Prausnitz

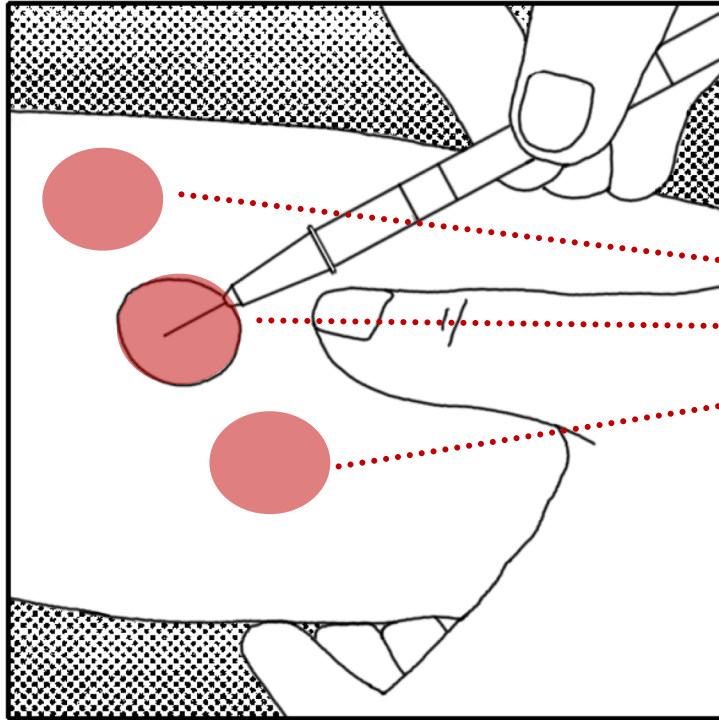


Heinz Küstner

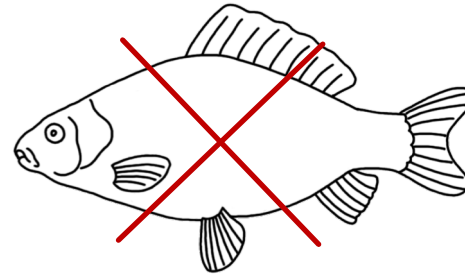


Serum injection

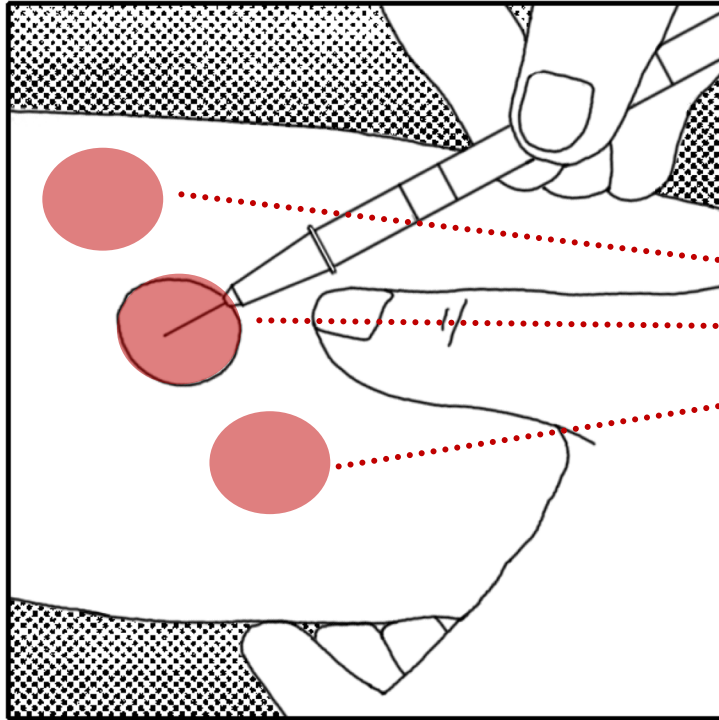
# 1921, Hygiene Institute Breslau (Wroclaw)



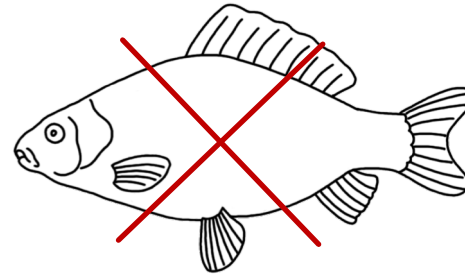
Positive reactions only where  
serum had been injected.



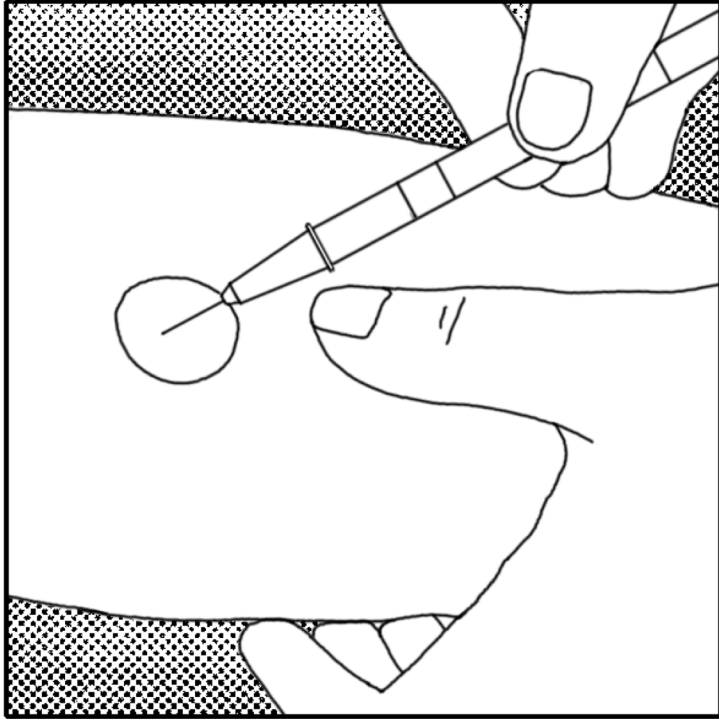
# 1921, Hygiene Institute Breslau (Wroclaw)



Proof of factor in serum responsible  
for local allergic reaction.



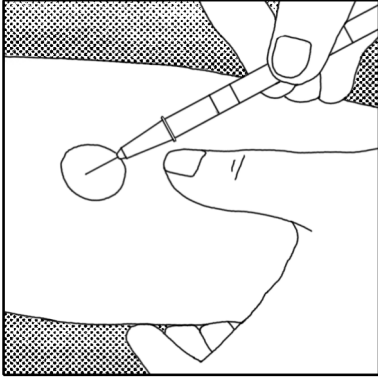
# 1921, Hygiene Institute Breslau (Wroclaw)



Prausnitz - Küstner test or P-K  
reaction: used to demonstrate and  
quantify allergen-specific antibodies

(no longer in use)

# 45 Years to get IgE



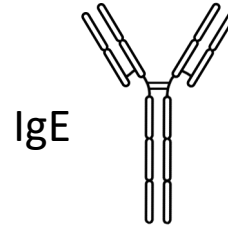
Prausnitz and Küstner

1921



Kimishige and Teruko Ishizaka

1966



# Two observations

## Richet, Portier & von Pirquet:

- Injection of foreign protein
- Memory B cell: IgE, IgG
- Production of antibodies results in allergic reaction

## Active sensitization

## Ramirez, Prausnitz & Küstner:

- Injection of IgE antibodies as part of blood serum
- Temporary allergic reaction
- No antibodies produced by receiving organism

## Passive sensitization

# Passive and active vaccination

## **Passive vaccination:**

Puts antibodies directly to use in the patient's organism.

## **Active vaccination:**

Patient's organism needs time to build up sufficient protective antibodies.

# Today

IgE quantification in blood serum as a complement to skin tests.

