

Specific inflammation

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Theodor Langhans 1839 – 1915

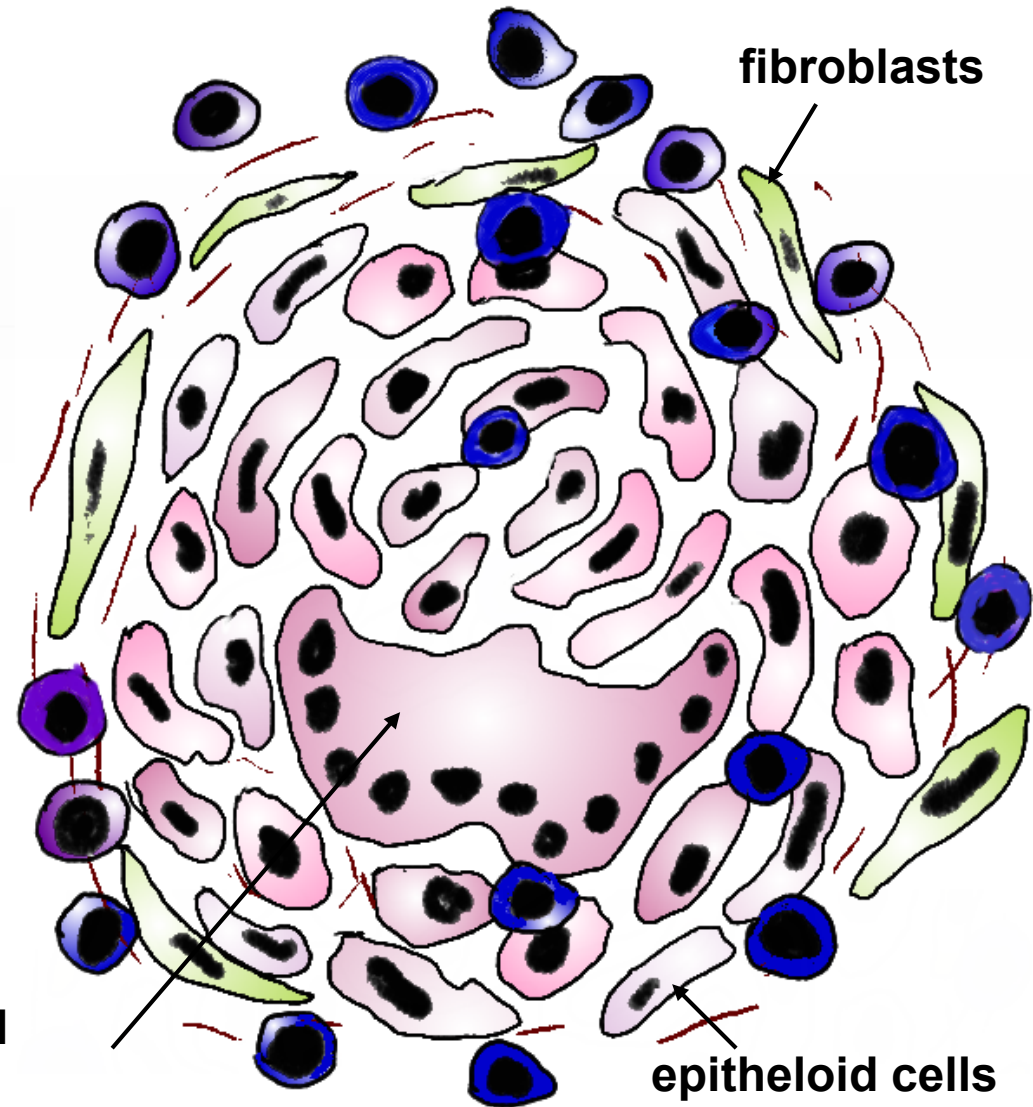
- study under Henle, Virchow
- occupied under von Recklinghausen

1872 professor of pathology in Giessen
1872 – 1915 professor of pathology in Bern

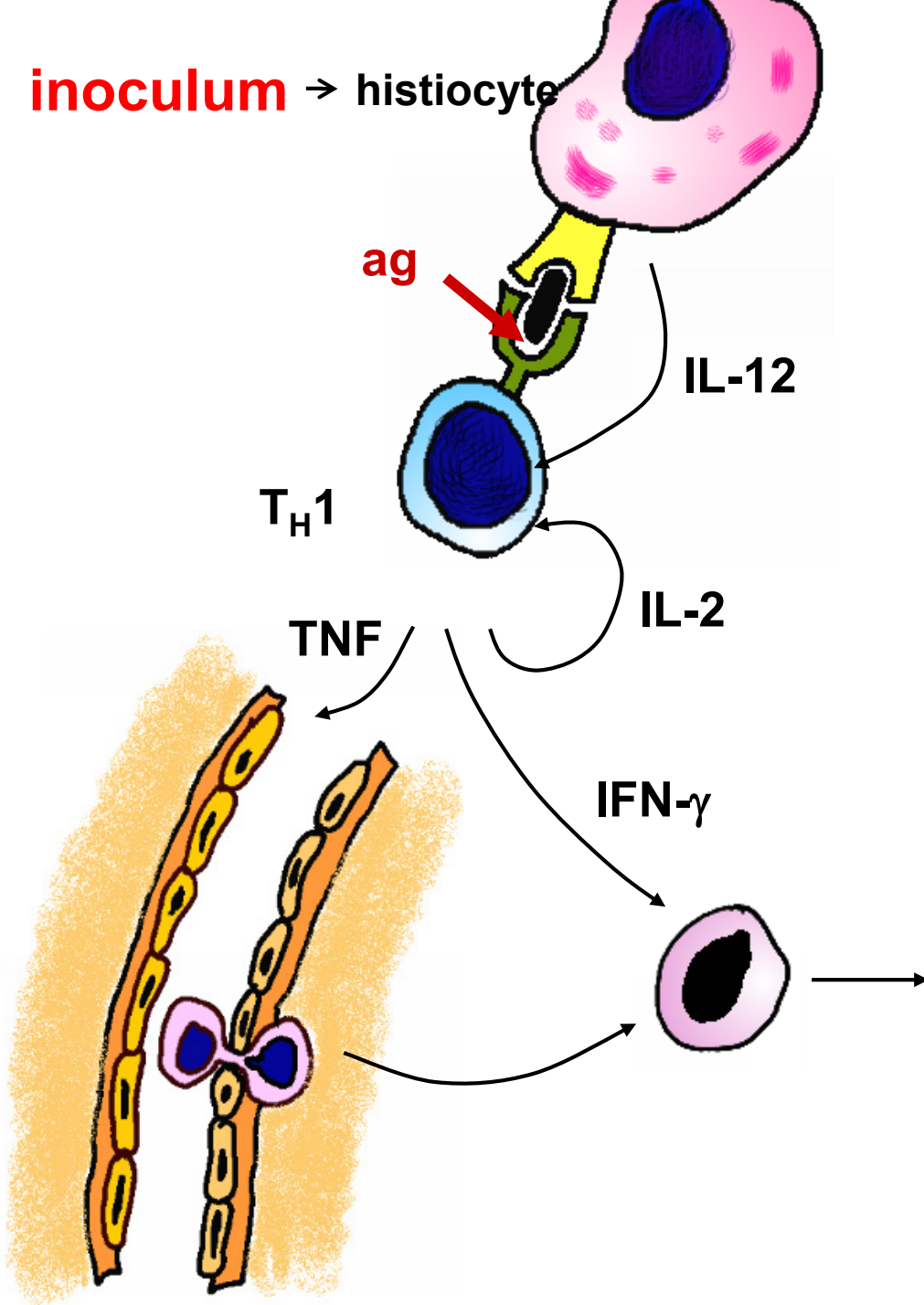
- describe cytotrofoblastic layer of cells in placental villi
- giant multinucleated cells in tbc

Langhans cell
1867

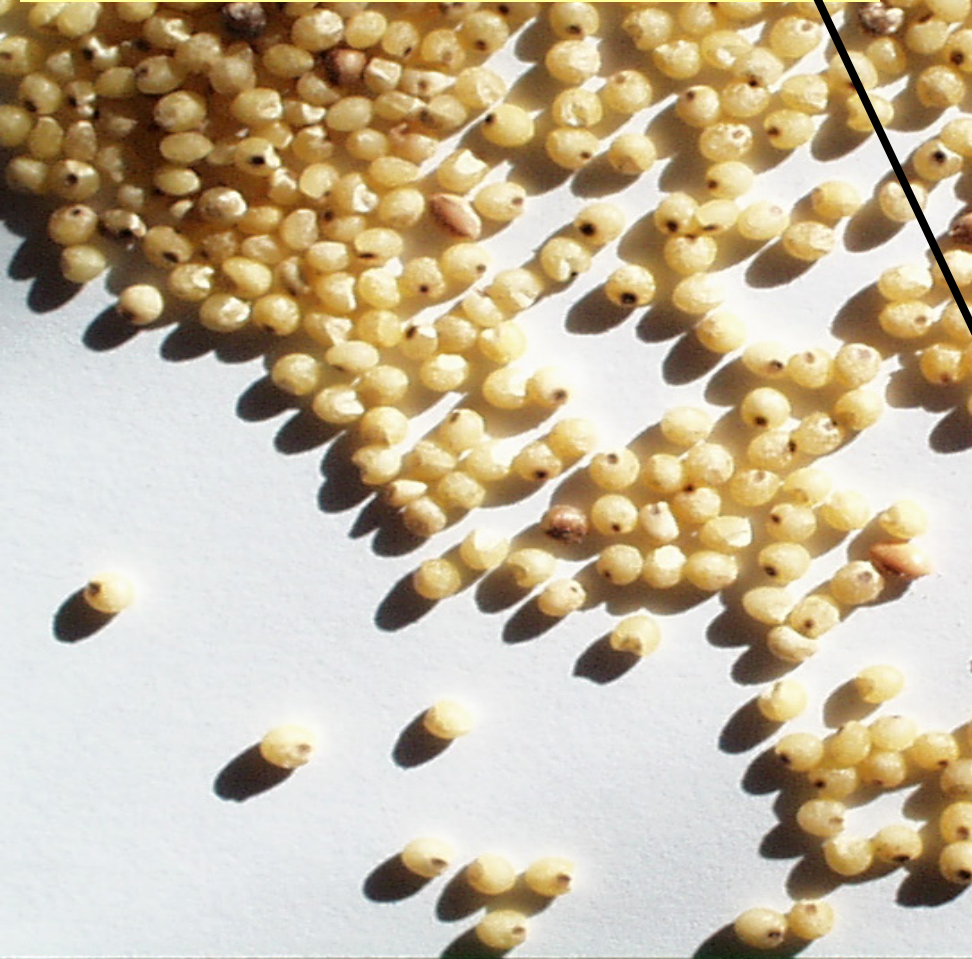
tuberculous granuloma



inoculum → histiocyte



milium - miliary tbc
tuberculous granuloma –
up to 2mm



**tuberculous granuloma – further
development**

**tuberculous granuloma –
epithelioid cells (histiocytes)**

Exsudativní tbc

Exsudative specific inflammation - tbc – basillary meningitis

Mycobacterium tuberculosis - acid fast stain

Mycobacterium tuberculosis - pathogenity

Cord factor, surface glykolipid / virulent strains

- induces granulomatous inflammation – granuloma formation

Lipoarabinomannan (LAM), heteropolysacharide – similar to endotoxin

- inhibition of macrophagic activation by interferon- γ
- induces secretion of TNF \rightarrow fever, weight loss, tissue damage
- induces sekretion of IL-10 \rightarrow supresses proliferation of Th cells

Complement opsonization

- CR3R (Mac1-integrin) \rightarrow fagocytosis, but... without bacterial oxidation

Urease

- inhibition of fagosome – lysosome fusion

Heat shock protein HSP (65 kD), highly immunogenic, similar to human HSP

- autoimmunity

Tuberculosis, morphologic signs

Proliferative - tbc granuloma

organs – lungs, spleen, liver, kidneys and genitourinary, bones ...

development ...

Exsudative - serous-**fibrinous**-hemorrhagic exsudate

a feature of tbc, not of the other types of ethiology

pleural cavity, leptomeninges, perikardium, peritoneum

development ...

Two clinically distinct subtypes of TBC

1. **TBC primary** (formerly – childhood type of tbc)

- development of

primary complex – Ghon complex
(*primary infect + lymphadenitis*)

- tendency to
- tendency to

lymfogenic spread
hematogenic dissemination

Two clinically distinct subtypes of TBC

2. TBC postprimary / secondary (formerly adult type of tbc)

- reactivation (early, but commonly late - after years)
- reinfection

- tendency to
- tendency to

local spread → ***apical TBC***
porogennic spread

Pathogenesis of specific inflammation in tbc

**clinical manifestation develops after BK infection
in about 5% people *who met BK* !**

polymorfisms in several genes

- HLA
- IFN- γ
- receptor of IFN- γ
- pro TLR2 (*toll like receptor* of natural immune system)

TBC proliferative and caseating / primary / primary infect

TBC proliferative and caseating / primary / lymphadenopathy

TBC proliferative and caseating / primary / lymfo + hemato spread

TBC proliferative and caseating / postprimary / porogenic spread

TBC proliferative and caseating / postprimary / porogenic spread

TBC proliferative and caseating / postprimary / hematogenous spread

Other types of mycobacteria in CR

M. avium	47
M. kansasii	18
M. xenopi	15
M. intracellulare	9
M. other	17

Other diseases eliciting specific inflammation

SARCOIDOSIS

lymph nodes

lungs

uvea / parotis – febris uveoparotidea

skin

bones – ostitis multiplex

spleen, liver, bone marrow

brain

SARCOIDOSIS

osteitis cystica multiplex, Jüngling (Adolph Otto J. 1884 - 1944, German surgeon)

Other, in Europe rare causes of specific inflammation

MYCOSES (*only certain types*)

example:

Histoplasma capsulatum - **histoplasmosis**

Other causes of specific inflammation

SYPHILIS

cave!

3rd stage only - gumma

Fritz Schaudinn, 1871 - 1906

Trepanoma pallidum 1905

Other causes of specific inflammation

LEPROSY

Gerhard Henrik Armauer Hansen (1841 v Bergenu - 1912)

bacteria spread in Schwann cells
require low temperature

Other causes of specific inflammation

LEPROSY

two major subtypes

- lepromatous
- tuberculous

- combination – indetermined leprosy

Other causes of specific inflammation

RHINOSCLEROMA

Klebsiella rhinoscleromatis

Ebert Edwin **Klebs** 1834 – 1913

A combination types of inflammatory response

specific + non-specific

granulomatous – purulent inflammation

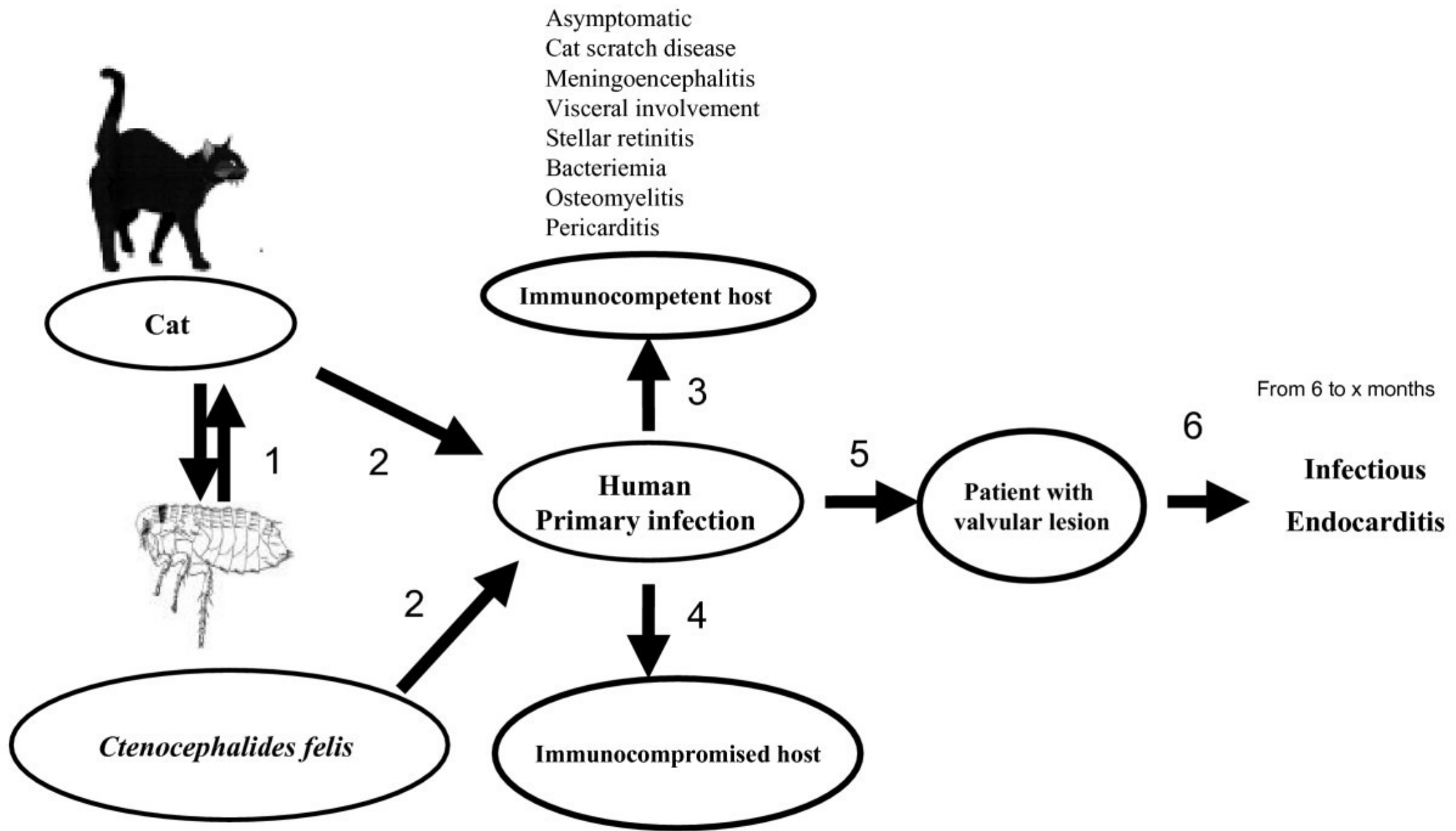
cat scratch disease

tularemia

Yersinia enterocolica

lymphogranuloma venereum

cat scratch disease



Asymptomatic
 Cat scratch disease
 Meningoencephalitis
 Visceral involvement
 Stellar retinitis
 Bacteriemia
 Osteomyelitis
 Pericarditis

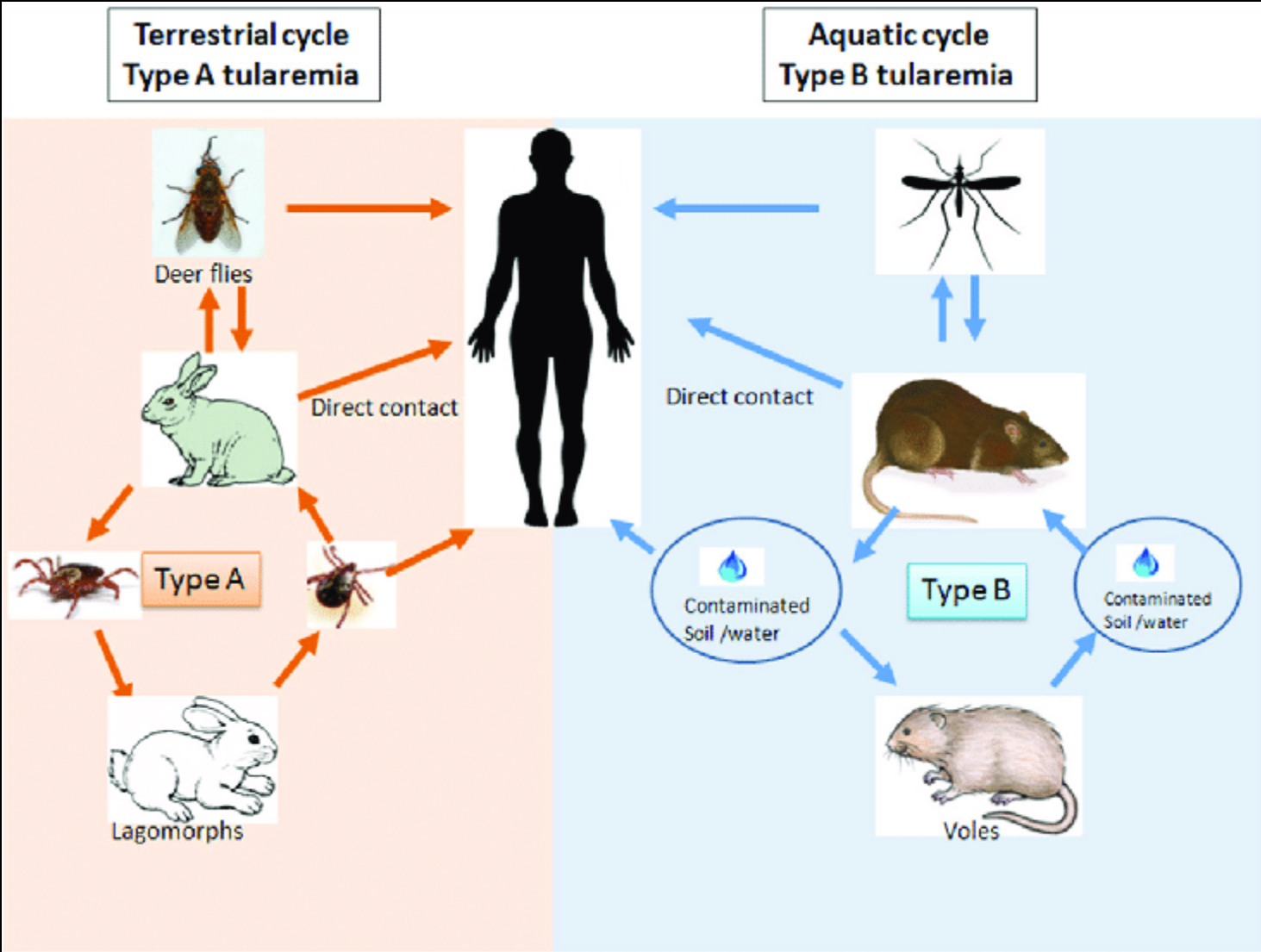
From 6 to x months

Bacillary angiomatosis
 Peliosis hepatitis
 Chronic bacteremia

Bartonella henselae

tularemia

tularemia



Yersinia pseudotuberculosis

contaminated

water

vegetables