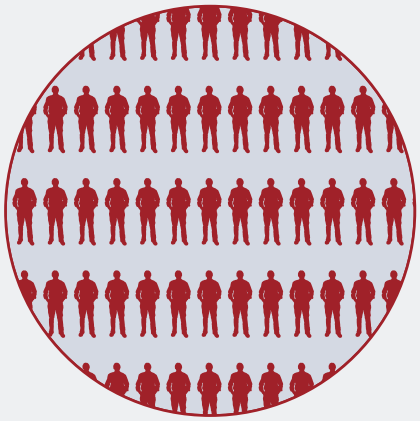
RABIES EPIDEMIOLOGY

RABIES IS NEARLY ALWAYS FATAL

ONCE SYMPTOMS OF THE DISEASE DEVELOP

YET IT IS
HIGHLY PREVENTABLE
WITH IMMUNIZATION



59,000 DEATHS
CAUSED BY RABIES
PER YEAR GLOBALLY [1]

1 DEATH
EVERY
9 MINUTES [2]

1. World Health Organization. Weekly epidemiological record. Rabies vaccines: WHO position paper. April 2018. N0 16, 2018, 93, 201-220.

2. CDC. Every 9 Minutes, Someone in the World Dies of Rabies. September, 28 2015. Available at https://www.cdc.gov/media/releases/2015/p0928-rabies.html

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RABIES PATHOGENESIS

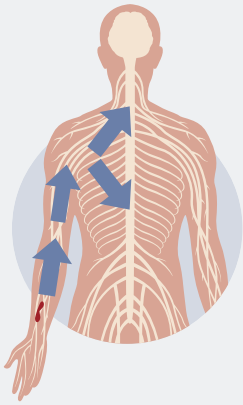
1

CONTAMINATION

2

BEFORE SYMPTOMS BEGIN

EARLY POST PROPHYLAXIS EXPOSURE PROPHYLAXIS INTERVENTION MAY PREVENT THE DISEASE



INCUBATION PERIOD [1]

2 TO 3 MONTHS GENERALLY (AS SHORT AS 5 DAYS, LONGER THAN 1 YEAR)

AFTER SYMPTOMS BEGIN

NOTHING CAN BE DONE TO STOP PROGRESSION OF THE DISEASE

3

PRODROMAL PHASE [2]

- Non specific, flu-like symptoms
- Severe itching of the skin beginning at the site of bite and progressing to whole limb or face
- Myoedema (mounding of the muscle)

4

ACUTE NEUROLOGICAL PHASE [2]

(VIRUS ENTERS THE CENTRAL NERVOUS SYSTEM)

TWO FORMS:

Furious rabies (67% of patients)

- Persistent fever, agitation, confusion, seizures
- Hydrophobia, aeophobia, hypersalivation, language disorder

Paralytic rabies (33% of cases)

- Piloerection (erection or bristling of hairs)
- Involuntary muscle twitch or contraction
- Paralysis
- Persistent fever
- Lump formation in muscle
- Bladder dysfunction
- Tremor; muscle contraction; motor or sensory deficits (particularly with bat-related rabies)

5

COMA & DEATH [3]

occur generally 7-10 days after the first symptoms appear

1. Factsheet. Rabies.21 April 2020. Available at: https://www.who.int/news-room/fact-sheets/detail/rabies
World Health Organization. WHO Expert Consultation on Rabies, third report. Geneva: World Health Organization; 2018 (WHO Technical Report Series, No. 1012). Licence: CC BY-NC-SA 3.0 IGO. Available at: https://apps.who.int/iris/bitstream/handle/10665/272364/9789241210218-eng.pdf?ua=1.

2. Crowcroft N., Thampi N. The prevention and management of rabies. BMJ 2015;350:g7827 doi: 10.1136/bmj.g7827. Available at https://www.bmj.com/content/bmj/350/bmj.g7827.full.pdf

3. World Health Organization. Weekly epidemiological record. Rabies vaccines: WHO position paper. April 2018. N0 16, 2018, 93, 201-220.

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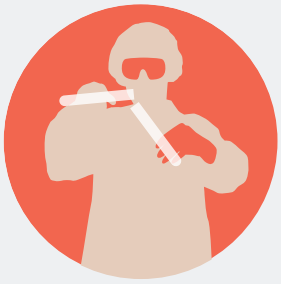
POPULATION AT RISK OF RABIES

FOUR MAIN TARGET GROUPS FOR WHICH PRE-EXPOSURE PROPHYLAXIS IS RECOMMENDED

Sub-populations in highly endemic settings with limited access to timely and adequate post-exposure treatment [1]



Individuals frequently exposed to potentially infected animals (laboratory staff, veterinarians, animal handlers, wildlife rangers,…) [2]

Travelers to areas with high risk of rabies [2]

Children living in, or visiting, remote, high-risk areas.
As they play with animals, they may be exposed to more severe bites or scratches, which they may not report [2]

1. World Health Organization. Weekly epidemiological record. Rabies vaccines: WHO position paper. April 2018. N0 16, 2018, 93, 201-220.

2. World Health Organization. Factsheet. Rabies.21 April 2020. Available at: https://www.who.int/news-room/fact-sheets/detail/rabies

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RABIES TRANSMISSION

RESERVOIRS AND VECTORS INCLUDE **DOMESTIC AND WILD MAMMALS** [1]

RABIES IN DOGS IS THE SOURCE OF **99%** OF HUMAN INFECTIONS [1]

ON AVERAGE **40%** OF RABIES CASES IN HUMAN OCCUR IN CHILDREN UNDER **15 YEARS** OF AGE [1]

The overall economic cost of dog-mediated rabies is estimated to be **$8.6 billion** [2]

1. World Health Organization. Factsheet. Rabies.21 April 2020. Available at: https://www.who.int/news-room/fact-sheets/detail/rabies

2. World Health Organization - Epidemiology and burden of disease. Available at https://www.who.int/rabies/epidemiology/en/ (accessed March 2021)

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