

Equine infectious diseases

The 32 pathogens on a typical lab request form – what they are, how they spread, what to look out for and how to protect your horse.



32

pathogens

8

sections

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pages · A4

Pathogen list and test methods taken from page 2 ("Testing for Equine Infectious Diseases") of the request form "Request Form Infection" by Labor Dr. Böse GmbH, Harsum (DE), version 2025-11-09. Independent educational material – not issued by or affiliated with the laboratory. Facts checked against WOA and FLI where they cover the topic; other sources are labelled. Status: October 2026.

These sheets do not replace veterinary advice. If your horse is ill, call your vet.

How to read the fact sheets

Badges

WOAH-listed

On the World Organisation for Animal Health list (Terrestrial Code ch. 1.3, 2024). Countries report outbreaks to WOAHP; relevant for travel and trade.

DE: notifiable · owner reports

Germany, TierSeuchMeldV 2026 § 3: owners must report even a *suspicion* straight away to the local veterinary office (Veterinärämte).

DE: reportable · lab/vet reports

TierSeuchMeldV § 4: laboratories and vets report positive findings to the authorities. No action needed by the owner.

Sources & certainty

✓ WOAHP ✓ FLI ✓ StlKo Vet

Statement checked against WOAHP or the German Friedrich-Loeffler-Institut (StlKo Vet is FLI's vaccination commission).

RKI Lit.

WOAHP/FLI do not cover this point; taken from the Robert Koch Institute (human health) or veterinary literature. Numbers point to the source list at the bottom of each page.

?1

Uncertain: sources disagree, data in horses are limited, or the point could not be confirmed. The reason is given in the footnotes.

○ ○ ○ Moderate

Risk for people: none · low · moderate · high.

Test methods on the form

PCR	Polymerase chain reaction – finds the pathogen's genetic material. Shows a current infection or carrier state.
Culture (BE)	Bacteriological examination – the lab grows the bacteria from the sample; with a resistogram it tests which antibiotics still work.
ELISA	Enzyme-linked immunosorbent assay – detects antibodies (in serum) or pathogen proteins (antigen, e.g. in faeces).
VNT · HI · IFAT · MAT	Antibody tests (virus neutralisation, haemagglutination inhibition, immunofluorescence, microagglutination). Antibodies show contact or vaccination – often two samples 2–3 weeks apart are needed.
Coggins test	Agar gel immunodiffusion test for equine infectious anaemia antibodies – the classic official test.
Western blot (WB)	Antibody test that separates proteins; used for <i>Sarcocystis neurona</i> (EPM).
Flotation · sedimentation	Worm eggs are floated or settled out of the droppings and counted.
Migration (Baermann)	Lungworm larvae crawl out of the droppings into water and are counted.

Symbols from the form

★	performed by an accredited partner laboratory
◦	method not accredited
cooled	sample must travel cooled overnight (24 h, form symbol ★)
#1234	the order code on the form – handy when you talk to your vet
Dry swab · culture swab	dry swabs are for PCR; culture swabs (with transport gel) are for growing bacteria

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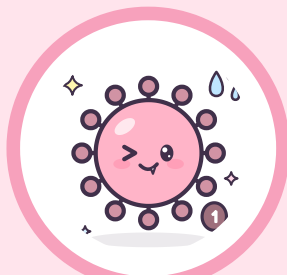
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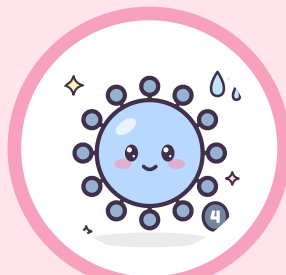
SECTION 1

Abortion

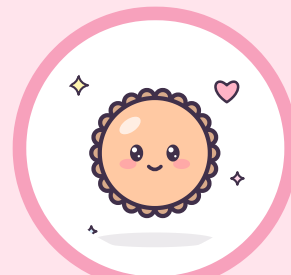
Infections that can make a pregnant mare lose her foal. Samples come from the afterbirth discharge (lochia), the uterus lining or the aborted foal.



EHV-1



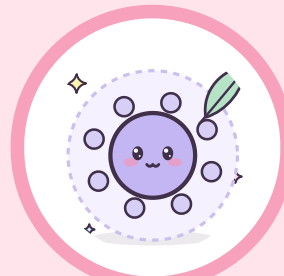
EHV-4



EVA



Leptospirosis



Chlamydia

Fact sheets

EHV-1	Equine herpesvirus 1 (EHV-1)	5
EHV-4	Equine herpesvirus 4 (EHV-4)	6
EVA	Equine viral arteritis (EVA)	7
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General tests in this section (not pathogen-specific)

Aerobic culture incl. resistograms	culture swab	#5020
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Sampling note on the form: PCR: dry swab, cooled 24 h · BE aerobic: culture swab · sample sites: lochia, endometrium, lung puncture aspirate (foetal), others

ABORTION

also on the form under Respiratory Disorders · CNS Disorders

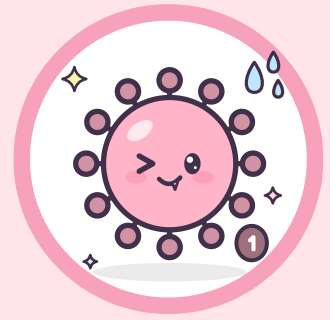
EHV-1

Equine herpesvirus 1 · *Varicellovirus equidalpha1* (Equid alphaherpesvirus 1)

Virus

WOAH-listed

DE: reportable · lab/vet reports



A very common horse herpesvirus. It causes airway infections, abortion storms in pregnant mares and a dangerous neurological form, and hides in the body for life.

Type

✓ WOAHH ✓ StIKo Vet Lit. 1 2 7

DNA virus (alphaherpesvirus, genus Varicellovirus)

Incubation

✓ WOAHH ✓ StIKo Vet Lit. 1 2 4

Fever after 1–2 days, other signs 2–8 days; abortion weeks to months later

Transmission

✓ WOAHH ✓ StIKo Vet Lit. 1 2 4

Mainly by close contact and breathing in droplets from coughing or snorting horses; also via contaminated clothing, tack and buckets. Aborted foetuses, afterbirth and birth fluids carry huge amounts of virus. Latent carriers can restart shedding.

Risk for people

✓ WOAHH Lit. 1 4

No known risk

No known risk. WOAHH reports no evidence that EHV-1 poses any health risk to people, including laboratory staff working with the virus.

Key symptoms in horses

✓ WOAHH ✓ StIKo Vet Lit. 1 2 4

- Fever, sometimes in two waves
- Nasal discharge and cough
- Dullness, poor appetite, swollen glands under the jaw
- Abortion in late pregnancy, often without warning
- Weak newborn foals that die within days
- Wobbly hind legs, urine dribbling, unable to stand

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR Abortion · Respiratory · CNS	dry swab (cooled), EDTA blood; abortion: lochia, endometrium, foetal lung aspirate	#1912
PCR panels with EHV-4 (+ EVA / + influenza) Abortion · Respiratory	dry swab (cooled)	#8620 / 8660 / 8720 / 8760
VNT (antibodies) CNS	serum, preferably paired samples	#1910

Prevention

✓ StIKo Vet 2 3

- Core vaccine in Germany: 3-dose course, 6-monthly boosters
- Vaccine supply has been patchy, so ask your vet
- Vaccinate the whole yard, not just single horses
- Pregnant mares: 2–3 doses, the last near foaling
- Quarantine newcomers 3 weeks; keep pregnant mares separate

Good to know

Vaccines reduce airway disease and abortion but do not prevent the neurological form. Infected horses carry the virus for life. During outbreaks, take temperatures twice daily.

WOAHH list: "Infection with equid herpesvirus-1 (Equine rhinopneumonitis)" (Terrestrial Code ch. 1.3); Germany: TierSeuchMeldV 2026, Annex 3 No. 31.

1 WOAHH – Terrestrial Manual 2024, ch. 3.6.9 Equine rhinopneumonitis (EHV-1 and -4) · woah.org/.../3.06.09_EQUINE_RHINO.pdf

2 StIKo Vet – Leitlinie zur Impfung von Pferden, 5th ed., 06.01.2025 (copy hosted by bpt) · tieraerzteverband.de/.../Impfleitlinie_Pferd_2025-01-06.pdf

3 StIKo Vet – Impftabelle Pferd (StIKo Vet at FLI) · stiko-vet.fli.de/.../b-pferd

4 Lit. – AAEP Infectious Disease Guidelines: EHV-1 and EHV-4 (2025) · aaep.org/.../Equine-Herpesvirus-EHV-1-and-EH...

5 Lit. – Updated ACVIM consensus statement on EHV-1 (2024) · pmc.ncbi.nlm.nih.gov/.../PMC11099706

6 Lit. – Merck Veterinary Manual: Equine herpesvirus infection · merckvetmanual.com/.../equine-herpesvirus-infection

7 Lit. – NCBI Taxonomy: Varicellovirus equidalpha1 · ncbi.nlm.nih.gov/.../wwwtax.cgi

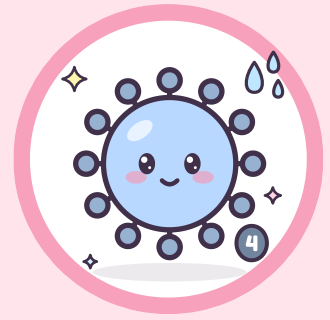
ABORTION

also on the form under Respiratory Disorders

EHV-4

Equine herpesvirus 4 · *Varicellovirus equidalpha4* (Equid alphaherpesvirus 4)

Virus



The most common viral cause of airway infection in horses. Usually a mild fever and runny nose, rarely abortion. Like EHV-1, it stays in the body for life.

Type

✓ WOAH ✓ StlKo Vet Lit. 1 2 5

DNA virus (alphaherpesvirus, genus Varicellovirus)

Incubation

✓ WOAH Lit. 1 4

Usually 2–8 days; fever may start within 1–2 days

Transmission

✓ WOAH ✓ StlKo Vet Lit. 1 2 4

Breathing in droplets and close contact with infected horses, plus contaminated tack, buckets and clothing. Common at shows and where young horses mix. Carriers can reactivate and shed the virus under stress.

Risk for people

✓ WOAH Lit. 1 4

No known risk

No known risk. WOAH reports no evidence that EHV-4 poses any health risk to people, including laboratory staff working with the virus.

Key symptoms in horses

✓ WOAH ✓ StlKo Vet Lit. 1 2 4

- Fever, usually milder than with EHV-1
- Nasal discharge
- Cough
- Dullness and poor appetite
- Swollen glands under the jaw
- Rarely abortion or neurological signs

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR	dry swab (cooled), EDTA blood; abortion: lochia, endometrium, foetal lung aspirate	#1942
PCR panels with EHV-1 (+ EVA / + influenza)	dry swab (cooled)	#8620 / 8660 / 8720 / 8760

Prevention

✓ StlKo Vet Lit. 2 3 4

- Core vaccine in Germany: 3-dose course, 6-monthly boosters
- Combined EHV-1/EHV-4 vaccine is licensed in Germany
- Vaccinate the whole yard, not just single horses
- Quarantine newcomers for 3 weeks
- Reduce stress; isolate horses with fever or discharge

Good to know

Most horses are infected young and reinfected repeatedly. EHV-4 stays dormant in a nerve cluster in the head and can reactivate under stress.

¹ WOAH – Terrestrial Manual 2024, ch. 3.6.9 Equine rhinopneumonitis (EHV-1 and -4) · woah.org/.../3.06.09_EQUINE_RHINO.pdf

² StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed., 06.01.2025 (copy hosted by bpt) · tieraerzteverband.de/.../Impfleitlinie_Pferd_2025-01-06.pdf

³ StlKo Vet – Impftabelle Pferd (StlKo Vet at FLI) · stiko-vet.fli.de/.../b-pferd

⁴ Lit. – AAEP Infectious Disease Guidelines: EHV-1 and EHV-4 (2025) · aaep.org/.../Equine-Herpesvirus-EHV-1-and-EH...

⁵ Lit. – NCBI Taxonomy: *Varicellovirus equidalpha4* · ncbi.nlm.nih.gov/.../wwwtax.cgi

ABORTION

also on the form under Respiratory Disorders · Additional Tests

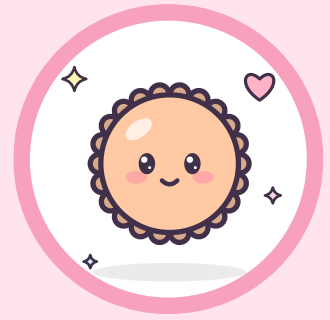
EVA

Equine viral arteritis · *Alphaarterivirus equi* (equine arteritis virus, EAV)

Virus

WOAH-listed

DE: notifiable · owner reports



A contagious virus spread by breathing and by breeding. Often silent, it can cause fever, swelling and abortion, and some stallions shed it in semen for years.

Type

✓ WOAH ✓ FLI Lit. 1 3 5

Enveloped RNA virus (arterivirus, family Arteriviridae)

Incubation

✓ StlKo Vet Lit. 2 4

Usually 3–10 days (range 2–14), shorter after airborne spread

Transmission

✓ WOAH ✓ StlKo Vet ✓ FLI Lit. 1 2 3 4

By droplets from acutely infected horses and by mating or artificial insemination with infected semen. Carrier stallions are the main reservoir. Urine, aborted foetuses, afterbirth and contaminated equipment can also spread it.

Risk for people

✓ WOAH Lit. 1 4

○ ○ ○ No known risk

No. WOAH states the virus does not present a human health hazard, and there is no evidence that it infects people.

Key symptoms in horses

✓ WOAH ✓ StlKo Vet ✓ FLI 1 2 3

- Often no signs at all
- Fever, dullness and poor appetite
- Swelling of legs, belly, scrotum or sheath
- Red, runny eyes ('pink eye'), swollen eyelids
- Nasal discharge and hive-like skin rash
- Abortion; severe pneumonia in very young foals

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR Abortion / Respiratory / Additional	dry swab (cooled), EDTA blood (cooled)	#1502
PCR panel 2 (EHV-1, EHV-4, EVA) Abortion	dry swab (cooled)	#8660
VNT (antibodies) Additional	serum	#1500

Prevention

✓ StlKo Vet ✓ FLI Lit. 2 3 4

- Inactivated vaccine licensed in Germany, from 9 months
- Vaccinate breeding colts before puberty to prevent carriers
- Blood-test before first vaccination; record in passport
- Test stallions and their semen before breeding
- Isolate new arrivals for 3–4 weeks

Good to know

Mares, geldings and young colts do not become carriers. Vaccinated horses test antibody-positive, which can block exports; the vaccine is not advised in pregnant mares.

WOAH list: "Infection with equine arteritis virus" (Terrestrial Code ch. 1.3); Germany: TierSeuchMeldV 2026, Annex 2 No. 8.

1 WOAH – Terrestrial Manual 2024, ch. 3.6.10 Equine viral arteritis · woah.org/.../3.06.10_EVA.pdf

2 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed., 06.01.2025 (copy hosted by bpt) · tieraerzteverband.de/.../Impfleitlinie_Pferd_2025-01-06.pdf

3 FLI – National reference laboratory for equine viral arteritis · fli.de/.../hrl-for-eva

4 Lit. – Merck Veterinary Manual: Equine viral arteritis · merckvetmanual.com/.../equine-viral-arteritis

5 Lit. – NCBI Taxonomy: Alphaarterivirus equi · ncbi.nlm.nih.gov/.../wwwtax.cgi

ABORTION also on the form under Additional Tests

Leptospirosis

Leptospira spp. (pathogenic species, e.g. *Leptospira interrogans*, *Leptospira kirschneri*)

Bacterium

DE: reportable · lab/vet reports



A bacterial infection spread mainly in urine. In horses it is linked to abortion and recurrent eye inflammation (moon blindness). People can catch it too.

Type

✓ WOA^H 1

Spiral-shaped bacterium (spirochaete) with many serovars

Incubation

Lit. 2 3

2–20 days to fever; abortion 2–4 weeks later; eye disease months–years later

Transmission

Lit. ✓ WOA^H 1 2 3

Contact with urine of infected rodents, wildlife or horses, often via stagnant water, wet soil or flooded pasture, or with aborted tissue and birth fluids. Recovering horses can shed bacteria in urine for up to 3 months.

Risk for people ?₁

✓ WOA^H RKI Lit. 1 2 4

Moderate

Yes. People are infected through urine-contaminated water, soil or animal contact entering skin cuts or mucous membranes. Farm workers, vets and water-sport enthusiasts are most at risk; illness ranges from flu-like to severe.

Key symptoms in horses

Lit. ✓ WOA^H 1 2 3

- Often no signs, or a few days' fever
- Abortion in late pregnancy (mostly after 8 months)
- Weak or jaundiced newborn foals
- Recurrent painful eye inflammation (moon blindness)
- Kidney disease: dullness, blood in urine (uncommon)

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR Abortion / Additional	dry swab (cooled), EDTA blood, tissue, urine°, aqueous humour°	#1622
MAT (antibodies) Additional	serum	#1600

Prevention

Lit. ✓ StlKo Vet 2 5 6

- Keep rodents away from feed, water and bedding
- Fence off stagnant water and flooded pasture
- Wear gloves handling urine, placentas and aborted foals
- Isolate aborting mares 3–4 weeks; test urine (PCR)
- No horse vaccine licensed in Germany

Good to know

Leptospira can survive up to 10 months in water but is killed by drying and common disinfectants. Moon blindness tends to flare repeatedly and can end in blindness.

?₁ **Risk for people:** Recognised zoonosis, but horse-to-human disease cases are not documented (AAEP).

Germany: TierSeuchMeldV 2026, Annex 3 No. 5.

1 WOA^H – Terrestrial Manual Chapter 3.1.12 Leptospirosis (2021) · woah.org/.../3.01.12_LEPTO.pdf

2 Lit. – AAEP Infectious Disease Guidelines: Leptospirosis · aaep.org/.../Leptospirosis_DZ_Guidelines_IDC...

3 Lit. – Merck Veterinary Manual: Leptospirosis in Horses · merckvetmanual.com/.../leptospirosis-in-horses

4 RKI – RKI-Ratgeber Leptospirose · rki.de/.../Ratgeber_Leptospirose.html

5 Lit. – Paul-Ehrlich-Institut: licensed veterinary vaccines for horses (German licensing authority) · pei.de/.../pferde-node.html

6 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. (Stand 06.01.2025) · tieraerzteverband.de/.../Impfleitlinie_Pferd_2025-01-06.pdf

ABORTION

Chlamydia

Equine chlamydiosis · *Chlamydia psittaci* (main species found in equine abortion; other *Chlamydia* species rarely)

Bacterium



A bird-associated bacterium that can cause late abortion and fatal illness in newborn foals. Infected placentas can give people psittacosis, a serious pneumonia.

Type

✓ WOA 1

Tiny bacterium that multiplies only inside host cells

Incubation ?1

Lit. ✓ WOA 1 RKI 136

Unknown in horses; in people usually 5–14 days, sometimes longer

Transmission ?3

Lit. ✓ WOA 1 RKI 1345

Horses probably catch it from infected birds (in Australia, wild parrots), likely via droppings or dust. People are infected by inhaling material from infected placentas, aborted or sick newborn foals, or bird droppings.

Risk for people ?2

Lit. ✓ WOA 1 ✓ FLI 12456

Moderate

Yes. Five vet-school staff and students caught psittacosis from equine foetal membranes; further cases are suspected. Infection is by inhalation and causes fever, headache and pneumonia. Foaling staff and vets are most exposed.

Key symptoms in horses

Lit. 46

- Abortion in late pregnancy (about 8–11 months)
- Mare usually shows no illness beforehand
- Very sick newborn foals that die quickly
- Inflamed placenta and foetal membranes

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR	dry swab (cooled) – lochia, endometrium, foetal lung aspirate	#5062

Prevention ?4

✓ WOA 1 Lit. 167

- Gloves and mask when handling placentas or aborted foals
- Have every abortion investigated by a laboratory
- Keep wild birds away from feed and water
- No vaccine for horses licensed in Germany

Good to know

C. psittaci has also been found in equine abortions in Europe, including Germany. Dried bird material can stay infectious for about four weeks. Australian cases cluster in winter and spring.

?1 **Incubation:** No incubation period established for horses.

?3 **Transmission:** Bird-to-horse route suspected from genotyping, not proven; most data from Australia.

1 WOA – Terrestrial Manual Chapter 3.3.1 Avian chlamydiosis (2018) · woah.org/.../3.03.01_AVIAN_CHLAMYD.pdf

2 FLI – WOA and National Reference Laboratory for Chlamydiosis · fli.de/.../woah-and-nrl-for-chlamydiosis

3 RKI – RKI-Ratgeber Chlamydiosen (Teil 2): Chlamydia psittaci · rki.de/.../Ratgeber_Chlamydiosen_Teil2.html

4 Lit. – Epizootic of *C. psittaci* equine reproductive loss, suspected parrot spillover (Emerg Microbes Infect 2018) · pmc.ncbi.nlm.nih.gov/.../PMC5953950

?2 **Risk for people:** Horse-linked human cases reported mainly from Australia; European evidence limited.

?4 **Prevention:** No horse-specific prevention studies; measures derived from bird reservoir and human exposure reports.

5 Lit. – 25-year retrospective study of *C. psittaci* in equine reproductive loss in Australia (J Med Microbiol 2021) · pmc.ncbi.nlm.nih.gov/.../PMC8131020

6 Lit. – Equine psittacosis in southeastern Australia: retrospective analysis (Animals 2023) · pmc.ncbi.nlm.nih.gov/.../PMC10416985

7 Lit. – Paul-Ehrlich-Institut: licensed veterinary vaccines for horses (German licensing authority) · pei.de/.../pferde-node.html

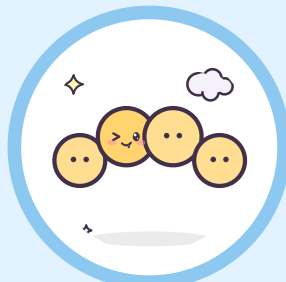
SECTION 2

Respiratory Disorders

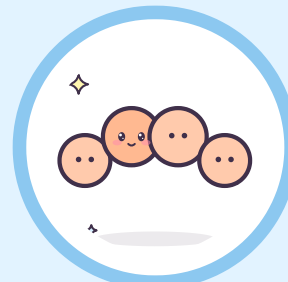
Coughing, nasal discharge and fever – the classic yard outbreaks. Nasal or throat swabs and blood samples help to find the cause.



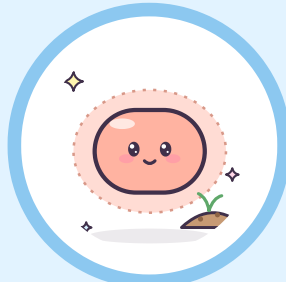
Equine influenza



Strangles



S. zooepidemicus



Rhodococcus equi

Fact sheets

Equine influenza	Equine influenza virus (equine flu)	11
Strangles	Strangles (Streptococcus equi subsp. equi)	12
S. zooepidemicus	Streptococcus zooepidemicus (S. zooepidemicus)	13
Rhodococcus equi	Rhodococcus equi (foal pneumonia)	14

Also tested in this section

EHV-1	on the form here too – fact sheet in “Abortion”	5
EHV-4	on the form here too – fact sheet in “Abortion”	6
EVA	on the form here too – fact sheet in “Abortion”	7

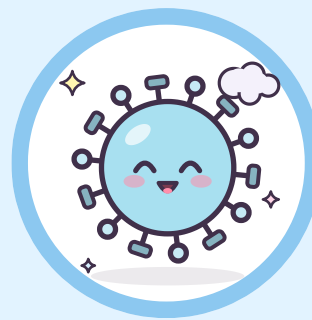
Equine influenza

Equine influenza virus (equine flu) · *Alphainfluenzavirus influenzae* (influenza A virus, subtype H3N8)

Virus

WOAH-listed

DE: reportable · lab/vet reports



Highly contagious 'horse flu' that spreads fast through yards and events. Rarely fatal, but causes fever, harsh cough and weeks off work; vaccination is core in Germany.

Type

✓ WOAHH ✓ StIKo Vet Lit. 1 2 5

RNA virus (influenza A, H3N8; family Orthomyxoviridae)

Incubation

✓ WOAHH Lit. 1 4

1–3 days; can be under 24 hours

Transmission

✓ WOAHH ✓ StIKo Vet 1 2

Breathing in droplets from coughing horses (airborne up to about 40 m) and close contact. People, vehicles, tack and buckets can carry it. Vaccinated horses may shed virus without showing signs.

Risk for people

✓ WOAHH 1

Low

Very unlikely. Equine flu has not been shown to cause illness in people; antibodies were found mainly in people exposed through their work. It has spread to dogs.

Key symptoms in horses

✓ WOAHH Lit. 1 4

- High fever
- Harsh, dry cough that can last weeks
- Watery nasal discharge, later thick if bacteria join
- Milder or missing signs in vaccinated horses
- Rarely pneumonia in young foals and donkeys

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
HI (antibodies), A equi II European and American type	serum	#2055, 2060
PCR	dry swab (cooled)	#2075
PCR panel 2 (EHV-1, EHV-4, influenza)	dry swab	#8760

Prevention

✓ StIKo Vet Lit. 2 3 4

- Core vaccine in Germany: 3-dose course, 6-monthly boosters
- Low-risk horses at home: 12-monthly may suffice
- Choose vaccines with current Florida clade 1/2 strains
- Follow competition vaccination rules (e.g. FN)
- Isolate sick horses until 21 days after recovery

Good to know

Rest at least 3 weeks after illness, about one week per day of fever, because damaged airways need around 3 weeks to heal.

?₁ **Risk for people:** No human illness shown; only antibodies in occupationally exposed people (WOAHH).

WOAHH list: "Infection with equine influenza virus" (Terrestrial Code ch. 1.3); Germany: TierSeuchMeldV 2026, Annex 3 No. 32.

1 WOAHH – Terrestrial Manual 2019, ch. 3.6.7 Equine influenza · woah.org/.../3.06.07_EQ_INF.pdf

2 StIKo Vet – Leitlinie zur Impfung von Pferden, 5th ed., 06.01.2025 (copy hosted by bpt) · tieraerzverband.de/.../Impfleitlinie_Pferd_2025-01-06.pdf

3 StIKo Vet – Impftabelle Pferd (StIKo Vet at FLI) · stiko-vet.fli.de/.../b-pferd

4 Lit. – Merck Veterinary Manual: Equine influenza · merckvetmanual.com/.../equine-influenza

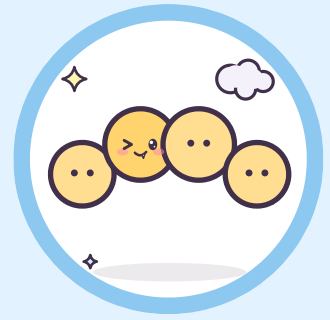
5 Lit. – NCBI Taxonomy: equine H3N8 isolate, species Alphainfluenzavirus influenzae · ncbi.nlm.nih.gov/.../wwwtax.cgi

RESPIRATORY DISORDERS

Strangles

Streptococcus equi subsp. equi

Bacterium



A highly contagious bacterial infection of the throat and head lymph nodes. It spreads quickly through yards, and some recovered horses silently carry it for years.

Type

✓ StlKo Vet 1

Gram-positive bacterium (Lancefield group C streptococcus), horse-adapted

Incubation

Lit. ✓ StlKo Vet 1 2 3

Usually 3–14 days until fever (StlKo Vet: mostly 3–8 days)

Transmission

✓ StlKo Vet Lit. 1 2 3

Direct contact and droplets from nasal discharge or coughing, and indirectly via shared water troughs, buckets, tack, grooming kit, clothing and hands. Horses that are incubating, recovering or silent carriers can all spread it.

Risk for people

?1

Lit. 2 3 4

Low

Very rarely. Isolated human infections have been reported, mainly in people with weakened immunity, who should avoid contact with sick horses. Strangles is essentially a disease of horses, donkeys and mules.

Key symptoms in horses

✓ StlKo Vet Lit. 1 3

- High fever (around 40 °C), dullness, poor appetite
- Nasal discharge, turning thick yellow-green
- Swollen, painful lymph nodes under jaw and throat
- Abscesses that burst and release thick pus
- Difficulty swallowing or breathing; head held stretched
- Cough

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
Culture (BE aerobic) + PCR + resistogram	culture swab	#5099
PCR	culture swab	#5093
ELISA (antibodies)	serum	#5089
Panel <i>S. equi</i> (<i>equi</i> + <i>zooepidemicus</i>): culture + PCR + resistogram	culture swab	#5094

Prevention

Lit. ✓ StlKo Vet 1 2 3 5

- Quarantine newcomers 3 weeks; test before mixing
- Isolate any horse with fever immediately
- Separate staff, kit and water for sick horses
- Test recovered horses (guttural pouch wash, PCR) before release
- Vaccines licensed in Germany: for high-risk horses only

Good to know

About 1 in 10 infected horses become long-term carriers in the guttural pouches (air sacs behind the throat). Bacteria survive weeks in water but only days on dry surfaces.

?1 **Risk for people:** Merck: disease only in equids; ACVIM/AAEP: rare cases in debilitated people.

1 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. (Stand 06.01.2025) · tieraerzteverband.de/.../impfleitlinie_Pferd_2025-01-06.pdf

2 Lit. – ACVIM revised consensus statement: Streptococcus equi infections in horses (Boyle et al., J Vet Intern Med 2018) · academic.oup.com/.../8449558

3 Lit. – AAEP Infectious Disease Guidelines: Strangles (rev. 2020) · aaep.org/.../Strangles_DZ_Guidelines_FINAL_2...

4 Lit. – Merck Veterinary Manual: Strangles in Horses · merckvetmanual.com/.../strangles-in-horses

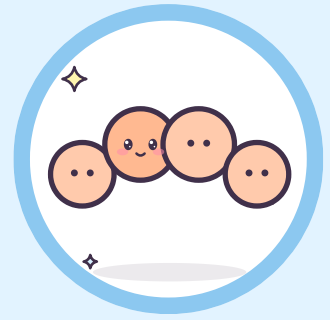
5 Lit. – Paul-Ehrlich-Institut: licensed veterinary vaccines for horses (German licensing authority) · pei.de/.../pferde-node.html

RESPIRATORY DISORDERS

S. zooepidemicus

Streptococcus zooepidemicus · *Streptococcus equi* subsp. *zooepidemicus*

Bacterium



A normal resident of horses' airways and genital tract that causes disease when defences drop. It is a leading cause of pneumonia, womb infection and abortion in horses.

Type

✓ StlKo Vet 1

Gram-positive bacterium (Lancefield group C streptococcus), opportunist

Incubation ?1

Lit. ✓ StlKo Vet 1 2

Not defined: opportunistic infections appear when the horse's defences drop

Transmission

Lit. ✓ StlKo Vet 1 2 3

Most infections come from the horse's own bacteria after stress, transport, viral infection or injury. Outbreaks between horses occur occasionally, and people in close contact can rarely be infected.

Risk for people

Lit. ✓ StlKo Vet 1 2 3

Low

Rarely, but infections can be severe (meningitis, blood poisoning, joint infection). Cases mostly involve people in close daily contact with horses, sometimes with weakened immunity. Wash hands; avoid nose-to-nose contact.

Key symptoms in horses

✓ StlKo Vet Lit. 1 2

- Fever, cough, nasal discharge (pneumonia)
- Fertility problems or uterine discharge in mares
- Abortion, premature or weak foals (placentitis)
- Infected wounds; navel or joint infections in foals
- Strangles-like swollen lymph nodes (occasionally)

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
Panel <i>S. equi</i> (<i>equi</i> + <i>zooepidemicus</i>): culture + PCR + resistogram	culture swab	#5094

Prevention ?2

Lit. ✓ StlKo Vet 1 2 4

- Reduce transport and training stress where possible
- Clean wounds and newborn foals' navels promptly
- Wash hands after handling horses
- No specific vaccine licensed in Germany

Good to know

Healthy horses commonly carry it, so laboratories must distinguish it from the strangles bacterium, a closely related subspecies that is far more contagious.

?1 **Incubation:** No incubation period given in sources; disease is opportunistic.

1 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. (Stand 06.01.2025) · [tieraerzteverband.de/impfleitlinie_pferd_2025-01-06.pdf](https://www.tieraerzteverband.de/impfleitlinie_pferd_2025-01-06.pdf)

2 Lit. – AAEP: *S. zooepidemicus* Infections (Boyle, 2025) · aaep.org/s-zooepidemicus-infections

?2 **Prevention:** Few specific prevention data; measures derived from known risk factors.

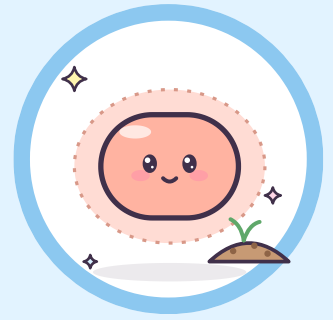
3 Lit. – Transmission of *S. equi* subsp. *zooepidemicus* from horses to humans (Emerg Infect Dis 2013) · wwwnc.cdc.gov/12-1365_article

4 Lit. – Paul-Ehrlich-Institut: licensed veterinary vaccines for horses (German licensing authority) · pei.de/pferde-node.html

Rhodococcus equi

Foal pneumonia · *Rhodococcus equi* (conserved name; synonyms *Prescottella equi*, *Rhodococcus hoagii*)

Bacterium



A soil bacterium causing slow-developing pneumonia with lung abscesses in foals aged 1–6 months. It is common on some breeding farms and early signs are easily missed.

Type

Lit. 1 4

Gram-positive soil bacterium that survives inside immune cells

Incubation ?1

Lit. 1 2

Infected in first weeks of life; signs usually at 1–6 months

Transmission

Lit. 1 2

Foals inhale dust containing virulent bacteria in their first weeks of life. The bacteria live in soil and herbivore manure; sick foals shed large numbers in droppings. It does not spread directly between foals.

Risk for people

Lit. 1 3

Low

Rarely. It can cause severe lung or whole-body infection in people with weakened immunity (e.g. HIV, transplant patients), usually from soil or manure. Infection in healthy people is extremely rare.

Key symptoms in horses

Lit. 1 2

- Fever, dullness, poor appetite (easily missed early)
- Fast or laboured breathing, flared nostrils
- Cough or nasal discharge (not always)
- Diarrhoea and poor growth (gut abscesses)
- Swollen joints or lameness
- Eye inflammation (uveitis)

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
Culture (BE aerobic) + PCR + resistogram	culture swab	#5053

Prevention

Lit. 1 2 5

- No vaccine available
- Hyperimmune plasma for newborn foals on affected farms
- Check foals often for fever and fast breathing
- Ultrasound screening on problem farms; treat selectively
- Remove manure promptly; sick foals shed many bacteria

Good to know

Survives over a year in soil. Adult horses are rarely affected unless immunocompromised. Many infected foals recover without treatment; unnecessary antibiotics promote resistant strains.

?1 Incubation: Field incubation not precisely known; experimental 9 days to 4 weeks.

1 Lit. – AAEP Infectious Disease Guidelines: *Rhodococcus equi* (2025) · aaep.org/.../Rhodococcus-equi-Disease-Guidel...

2 Lit. – Merck Veterinary Manual: *Rhodococcus equi* Pneumonia in Foals · merckvetmanual.com/.../rhodococcus-equi-pneumonia-in-f...

3 Lit. – Merck Veterinary Manual: *Rhodococcus* Infection in Animals · merckvetmanual.com/.../rhodococcus-infection-in-animals

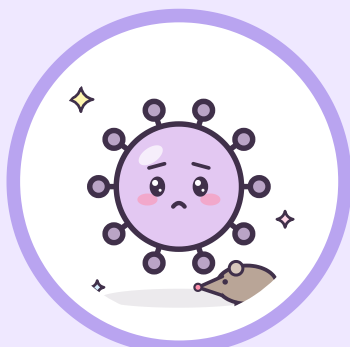
4 Lit. – LPSN (DSMZ): *Rhodococcus equi* nomenclature · lpsn.dsmz.de/.../rhodococcus-equi

5 Lit. – Paul-Ehrlich-Institut: licensed veterinary vaccines for horses (German licensing authority) · pei.de/.../pferde-node.html

SECTION 3

CNS Disorders

Infections of the brain and spinal cord: wobbliness, weakness, behaviour changes.
Always an emergency for your vet.



Borna disease



West Nile virus

Fact sheets

Borna disease Borna disease (Borna disease virus 1, BoDV-1)

16

West Nile virus West Nile virus (WNV)

17

Also tested in this section

EHV-1 on the form here too – fact sheet in “Abortion”

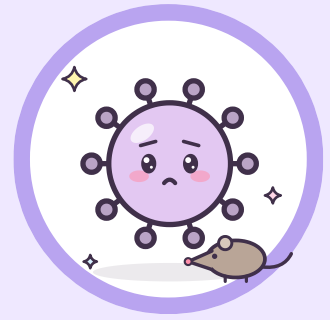
5

Borna disease

Orthobornavirus bornaense (Borna disease virus 1, BoDV-1)

Virus

DE: reportable · lab/vet reports



A rare, usually fatal brain inflammation of horses in parts of Germany, Austria, Switzerland and Liechtenstein. The virus comes from a wild shrew; infected horses do not pass it on.

Type

Lit. 5

Enveloped negative-sense RNA virus (orthobornavirus) that attacks the brain

Incubation ?1

Lit. 3

About 1–3 months

Transmission ?3

✓ FLI Lit. 134

Horses probably pick up virus from urine, droppings or saliva of infected bicoloured white-toothed shrews, e.g. via contaminated hay, the nose or small wounds. Horses are dead-end hosts: no horse-to-horse spread.

Risk for people ?2

RKI ✓ FLI 12

Low

People can develop fatal brain inflammation, but very rarely (about 5–10 cases a year in Germany, mostly rural Bavaria). The source is shrews, not horses; infected horses do not shed virus.

Key symptoms in horses

Lit. ✓ FLI 134

- Fever (up to 41 °C), poor appetite
- Behaviour change, dullness or aggression
- Empty chewing, difficulty swallowing
- Stumbling, poor balance, head tilt
- Compulsive walking, seizures, going down
- Death or euthanasia within days to weeks

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
IFAT* (antibodies)	serum	#2200
PCR*	cerebrospinal fluid (liquor), cooled	#2204

Prevention

Lit. RKI 234

- Store hay, feed and bedding safe from shrews
- Remove shrew food: pet food, compost, open rubbish
- Gloves and FFP2 mask when removing dead shrews
- No vaccine; treatment only relieves signs
- Isolate suspects until diagnosed; other diseases look similar

Good to know

Shrews are protected and must not be killed. A definite diagnosis usually needs virus detection in brain tissue after death; blood antibody tests can give false positives.

?1 Incubation: Single source (LMU equine clinic); FLI and RKI give no horse figure.

?3 Transmission: Exact route from shrew to horse not yet established.

Germany: TierSeuchMeldV 2026, Annex 3 No. 8.

1 FLI – Bornaviren (Tierseuchengeschehen) · fli.de/.../bornaviren

2 RKI – Humane Infektion mit BoDV-1: Merkblatt von RKI, BNITM und FLI · rki.de/.../Merkblatt.pdf

3 Lit. – LMU Munich Equine Clinic: Informationen zur Borna-Virus-Erkrankung (2025) · pferd.vetmed.uni-muenchen.de/.../merkblattborna.pdf

?2 Risk for people: Shrew-to-human route unknown; horse-to-human transmission never shown.

4 Lit. – LGL Bayern: Borna'sche Krankheit beim Pferd – information for horse keepers · lgl.bayern.de/.../infoblatt_pferdehalter_borna.pdf

5 Lit. – ICTV Report: Genus Orthobornavirus · ictv.global/.../orthobornavirus

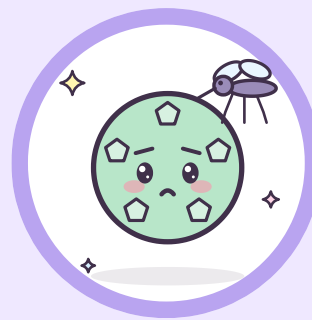
West Nile virus

WNV · *Orthoflavivirus nilense* (West Nile virus)

Virus

WOAH-listed

DE: notifiable · owner reports



Mosquito-borne virus circulating in wild birds, present in Germany since 2018. Most infected horses stay healthy, but some develop severe, sometimes fatal brain and spinal cord disease.

Type

✓ WOAHLit. 17

Mosquito-borne RNA virus (flavivirus family)

Incubation

✓ WOAHL1

About 3–15 days after the infected mosquito bite

Transmission

✓ WOAHL✓ FLI123

Spread by bites of infected mosquitoes (mainly *Culex*), which pick up the virus from wild birds. Horses and people are dead-end hosts: they do not pass the virus on, so infected horses are no risk to others.

Risk for people

✓ WOAHL✓ FLI123

Low

People are infected by mosquito bites, not by horses. Most have no symptoms; about 20% get flu-like illness and under 1% severe brain inflammation. Protect yourself from mosquitoes too.

Key symptoms in horses

✓ WOAHL✓ StlKo Vet125

- Most infected horses show no signs
- Stumbling, wobbly gait, weakness, especially of hind legs
- Muscle twitching, dullness, loss of appetite
- Partial paralysis; may lie down, unable to rise
- Impaired vision, circling, difficulty swallowing, fits

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
ELISA IgM (recent infection)	serum	#2916
ELISA IgM and IgG	serum	#2931
PCR	EDTA blood, cerebrospinal fluid (cooled)	#2950

Prevention

✓ WOAHL✓ FLI✓ StlKo Vet23456

- Vaccinate: three horse vaccines are licensed in Germany
- StlKo Vet: vaccinate in affected areas and northern lowlands
- Two primary doses 3–6 weeks apart, then yearly boosters
- Complete primary vaccination before mosquito season starts in spring
- Reduce mosquito exposure and mosquito breeding around the yard

Good to know

About 8% of infected unvaccinated horses develop nervous signs; 30–50% of these die and survivors often keep lasting damage. Cases peak late summer to autumn.

WOAH list: "West Nile fever (multiple species)" (Terrestrial Code ch. 1.3); Germany: TierSeuchMeldV 2026, Annex 1 Sect. 2 No. 5.

1 WOAHL – Terrestrial Manual ch. 3.1.26 West Nile fever (2018 update) · woah.org/.../3.01.26_WEST_NILE.pdf

2 WOAHL – West Nile fever – disease page · woah.org/.../west-nile-fever

3 FLI – Anstieg von West-Nil-Virus Fällen in Deutschland (press release, 19 Sep 2024) · fli.de/.../anstieg-von-west-nil-virus-fael...

4 FLI – Tierseuchengeschehen: West-Nil-Virus · fli.de/.../west-nil-virus

5 StlKo Vet – West-Nil-Virus im Blick behalten (3 Sep 2024) · stiko-vet.fli.de/.../west-nil-virus-im-blick-behalten

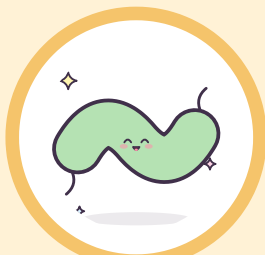
6 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. 2025 · tieraerzteverband.de/.../impfleitlinie_Pferd_2025-01-06.pdf

7 Lit. – ICTV Report: genus Orthoflavivirus · ictv.global/.../orthoflavivirus

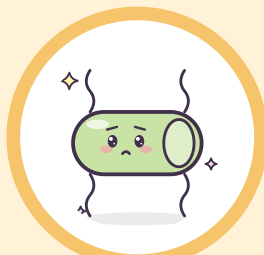
SECTION 4

Diarrhoea

Agents found in droppings of foals and adult horses. Send about 50 g of fresh faeces; some tests need cooled overnight transport.



Campylobacter



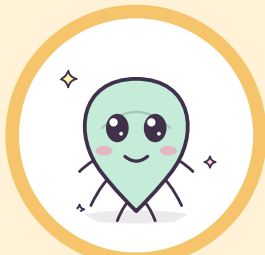
C. difficile



C. perfringens



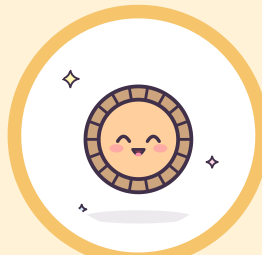
Cryptosporidia



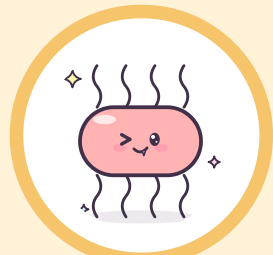
Giardia



Lawsonia



Rotavirus



Salmonella

Fact sheets

Campylobacter	19
C. difficile Clostridioides difficile (C. difficile)	20
C. perfringens Clostridium perfringens (C. perfringens)	21
Cryptosporidia Cryptosporidium (cryptosporidia)	22
Giardia	23
Lawsonia Lawsonia intracellularis (equine proliferative enteropathy, EPE)	24
Rotavirus Equine rotavirus	25
Salmonella Salmonella (salmonellosis)	26

Sampling note on the form: Sample material: faeces, preferably 50 g

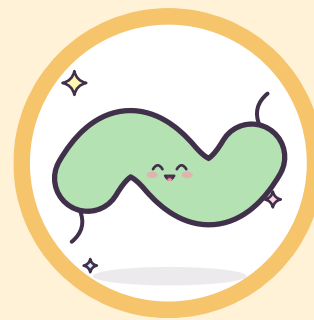
DIARRHOEA

Campylobacter

Campylobacter spp. (mainly *C. jejuni* and *C. coli*)

Bacterium

DE: reportable · lab/vet reports



Gut bacteria carried by many animals and the commonest bacterial cause of food poisoning in people. In horses, their role in causing diarrhoea is still unclear.

Type

✓ WOA 1

Spiral-shaped, Gram-negative gut bacterium

Incubation ?1

RKI 2

Not established in horses; in people usually 2–5 days

Transmission ?3

✓ WOA RKI Lit 1 2 3

Swallowed with faeces from carrier animals, directly or via contaminated feed, water or surroundings. Birds, poultry and other livestock are main carriers. Healthy horses may carry it unnoticed.

Risk for people ?2

✓ WOA RKI 1 2

Low

Possible. People get diarrhoea, cramps and fever, rarely nerve or joint complications. Most human cases come from poultry meat; contact with animals is another route. Small children are often affected.

Key symptoms in horses ?4

✓ WOA Lit ✓ StlKo Vet 1 3 4 7

- Often no signs; healthy horses can carry it
- Diarrhoea, but its role in horses is unclear
- Mostly found in horses that are already ill
- Foals: can worsen diarrhoea after rotavirus infection

Test method & sample (from the form)

METHOD

SAMPLE

FORM CODE

PCR*

faeces (preferably 50 g)

#5400

Prevention

RKI ✓ WOA Lit 1 2 5 6

- Wash hands after handling horses, manure or tack
- Protect feed and water from bird and animal droppings
- Wear gloves when handling horses with diarrhoea
- No vaccine for horses licensed in Germany

Good to know

Survives for a while in cool, damp places but cannot multiply outside an animal. Studies of healthy horses report very different carrier rates.

?1 Incubation: No horse data found; human figure from RKI.

?3 Transmission: Hardly studied in horses; faecal–oral route assumed from other animal species.

Germany: TierSeuchMeldV 2026, Annex 3 No. 4 (thermophilic *Campylobacter*).

1 WOA – Terrestrial Manual ch. 3.10.4: Infection with *Campylobacter jejuni* and *C. coli* · woah.org/.../3.10.04_CAMPYLO.pdf

2 RKI – RKI-Ratgeber *Campylobacter-Enteritis* · rki.de/.../Ratgeber_Campylobacter.html

3 Lit. – Paruch & Paruch 2022, Enteropathogens in faeces of healthy horses (Microbiology Insights) · pmc.ncbi.nlm.nih.gov/.../PMC9008849

4 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. 2025 (rotavirus chapter, differentials) · tieraerzteverband.de/.../Impfleitlinie_Pferd_2025-01-06.pdf

?2 Risk for people: Common in people, but horses are rarely documented as the source.

?4 Key symptoms in horses: Disease in horses poorly described; clinical relevance disputed.

5 Lit. – Paul-Ehrlich-Institut: vaccines licensed for horses in Germany · pei.de/.../pferde-node.html

6 Lit. – AAEP Infectious Disease Guidelines: Equine Rotavirus A and B (hygiene with any diarrhoeic horse) · aaep.org/.../Equine-Rotavirus-AB-Guidelines-...

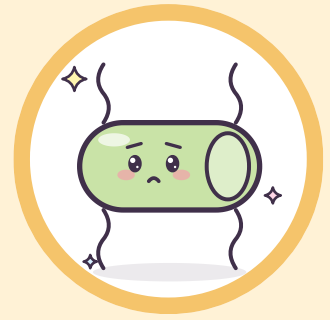
7 Lit. – Liphook Equine Hospital laboratory: diarrhoea tests · liphookequinehospital.co.uk/.../diarrhoea

DIARRHOEA

C. difficile

Clostridioides difficile (formerly *Clostridium difficile*)

Bacterium



A gut bacterium whose toxins cause sudden, often severe diarrhoea (colitis). Antibiotics, hospital stays and feed changes raise the risk; young foals can also fall ill.

Type

Lit. RKI 1 5

Spore-forming gut bacterium that lives without oxygen; toxins A and B

Incubation ?1

Lit. 1

Unknown; possibly under 24 hours; after antibiotics usually within one week

Transmission

Lit. 1 2 3

Hardy spores are swallowed from faeces or contaminated surroundings. Up to 10% of healthy adult horses and many young foals carry it. Illness follows disturbed gut flora, e.g. antibiotics, stress, transport or surgery.

Risk for people ?2

Lit. RKI 3 4 5

Low

Possibly. People get *C. difficile* especially in hospitals and after antibiotics. Horses carry strain types also found in people, but direct spread from horses is not proven. Older and immunocompromised people are most at risk.

Key symptoms in horses

Lit. ✓ StlKo Vet 1 2 6

- Sudden diarrhoea, often dark, foul-smelling or bloody
- Fever and dullness
- Colic (belly pain)
- Dehydration and reduced appetite
- Foals: sudden bloody diarrhoea, can be fatal
- Sudden death in severe cases

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR for toxin genes A+B ^o	faeces (preferably 50 g), cooled	#5572

Prevention

Lit. ✓ StlKo Vet 1 2 6 7

- Give antibiotics only when prescribed by your vet
- Change feed gradually; reduce stress and transport
- Isolate any horse with diarrhoea; clean thoroughly
- Disinfect cleaned surfaces with diluted bleach (1:10)
- No vaccine for horses licensed in Germany

Good to know

Spores survive heat, cold, drying and UV light for long periods. Never spread manure or bedding from sick horses on pasture. Foals can fall ill without antibiotics.

?1 **Incubation:** AAEP: true incubation unknown because healthy horses carry it.

1 Lit. – AAEP Infectious Disease Guidelines: Clostridial Enterocolitis in Adult Horses (2025) · aaep.org/Clostridial-Enterocolitis-Disea...

2 Lit. – Uzal et al. 2022, Clostridial Diseases of Horses: A Review (Vaccines) · ncbi.nlm.nih.gov/PMC8876495

3 Lit. – Review 2019: *C. difficile* in food-producing animals, horses and household pets (Microorganisms) · ncbi.nlm.nih.gov/PMC6955671

4 Lit. – Hain-Saunders et al. 2023, Genomic analysis of *C. difficile* from horses (Microorganisms) · pmc.ncbi.nlm.nih.gov/PMC10386058

?2 **Risk for people:** Shared horse-human strains found; direct animal-to-human transmission never established.

5 RKI – RKI-Ratgeber Clostridioides (früher Clostridium) difficile · rki.de/Ratgeber_Clostridium.html

6 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. 2025 (foal diarrhoea differentials) · tieraerzteverband.de/Impfleitlinie_Pferd_2025-01-06.pdf

7 Lit. – Paul-Ehrlich-Institut: vaccines licensed for horses in Germany · pei.de/pferde-node.html

DIARRHOEA

C. perfringens

Clostridium perfringens

Bacterium



A normal soil and gut bacterium. Certain toxin-producing strains cause sudden, often bloody diarrhoea that can kill newborn foals within days; adults can develop colitis.

Type

Lit. 1 2

Spore-forming gut bacterium that lives without oxygen; types defined by toxins

Incubation ?1

Lit. 1 3

Unknown; illness can start within 24 hours; foals usually under 10 days

Transmission

Lit. 1 2

Spores are everywhere in soil and faeces. Foals may swallow them from the mare's udder or surroundings. Illness follows overgrowth and toxin production, often after gut upsets such as antibiotics or feed changes.

Risk for people ?2

Lit. 1 4

Low

People commonly get *C. perfringens* food poisoning from cooked food kept warm too long. No cases caught from horses are documented; basic hygiene around horses with diarrhoea is enough.

Key symptoms in horses

Lit. ✓ StlKo Vet 1 2 3 6

- Newborn foals: sudden, often bloody diarrhoea
- Severe dullness, rapid collapse, death within 24–48 hours
- Colic (belly pain) and fever
- Adults: diarrhoea, dehydration, reduced appetite
- Sudden death possible

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR for toxin genes°	faeces (preferably 50 g), cooled	#5582

Prevention

Lit. ✓ StlKo Vet 1 2 3 5 6

- Keep foaling stables clean and disinfected
- Avoid sudden feed changes and unneeded antibiotics
- Isolate horses with diarrhoea; dispose of manure safely
- Call the vet at once for diarrhoea in foals
- No vaccine for horses licensed in Germany

Good to know

Many toxin types occur in healthy horses, so a positive test needs interpretation. Type C is rare in healthy foals. Spores resist heat, cold and drying.

?1 Incubation: AAEP: incubation unknown because the bacterium is normal gut flora.

1 Lit. – AAEP Infectious Disease Guidelines: Clostridial Enterocolitis in Adult Horses (2025) · aaep.org/Clostridial-Enterocolitis-Disea...

2 Lit. – Uzal et al. 2022, Clostridial Diseases of Horses: A Review (Vaccines) · ncbi.nlm.nih.gov/PMC8876495

3 Lit. – Merck Veterinary Manual: Bacterial Diarrhea in Foals · merckvetmanual.com/bacterial-diarrhea-in-foals

?2 Risk for people: No fetched source addresses horse-to-human spread; human illness described as foodborne (CDC).

4 Lit. – CDC: About *C. perfringens* food poisoning · cdc.gov/index.html

5 Lit. – Paul-Ehrlich-Institut: vaccines licensed for horses in Germany · pei.de/pferde-node.html

6 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. 2025 (foal diarrhoea differentials) · tieraerzteverband.de/Impfleitlinie_Pferd_2025-01-06.pdf

DIARRHOEA

Cryptosporidia

Cryptosporidium spp. (in horses mainly *C. parvum* and the *Cryptosporidium* horse genotype)

Protozoon



A tiny parasite that can cause diarrhoea in young foals, often without symptoms. It matters because the main type, *C. parvum*, also infects people.

Type

✓ WOA 1

Single-celled gut parasite spread by hardy egg-like oocysts

Incubation ?1

Lit. 3

Not established in foals; 2–7 days in calves

Transmission

✓ WOA Lit. 1 3 5

Foals swallow oocysts from faeces of other foals, mares or calves, or from contaminated water, feed and surroundings. Very few oocysts are needed. Healthy adults can shed them unnoticed.

Risk for people ?2

RKI ✓ WOA Lit. 1 2 4 6

Moderate

Yes; horses are a recognised source. People swallow oocysts from faeces or water and get watery diarrhoea and cramps. Young children and immunocompromised people can become seriously ill.

Key symptoms in horses

Lit. ✓ WOA 1 3 4 5

- Often no signs in healthy foals
- Mild to moderate diarrhoea lasting several days
- Mainly foals in their first weeks of life
- Severe disease mostly in foals with weak immunity
- Rarely any illness in adult horses

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
ELISA (antigen)°	faeces (preferably 50 g)	#5280

Prevention

✓ WOA Lit. RKI 1 2 5 7

- Remove dung and soiled bedding daily
- Clean with hot soapy water over 60 °C, then dry
- Keep foals away from calves and calf pastures
- Wash hands after handling foals, especially children
- No vaccine for horses licensed in Germany

Good to know

Oocysts survive many months in cool, damp places and resist most common disinfectants. In a European study only 0–4.5% of foals were shedding them.

?1 Incubation: No horse-specific data found; calf figure from Merck.

1 WOA – Terrestrial Manual ch. 3.10.2: Cryptosporidiosis (2022) · woah.org/.../3.10.02_CRYPTO.pdf

2 RKI – RKI-Ratgeber Kryptosporidiose · rki.de/.../Ratgeber_Kryptosporidiose.html

3 Lit. – Merck Veterinary Manual: Cryptosporidiosis in Animals · merckvetmanual.com/.../cryptosporidiosis-in-animals

4 Lit. – Merck Veterinary Manual (horse owners): Gastrointestinal Parasites of Horses · merckvetmanual.com/.../gastrointestinal-parasites-of-h...

?2 Risk for people: RKI lists horses as source; European foal study found mostly horse-specific, low-risk types.

5 Lit. – Western College of Veterinary Medicine (Univ. Saskatchewan): Cryptosporidium in horses · wcv.m.usask.ca/.../cryptosporidium-species-horses.php

6 Lit. – Kostopoulou et al. 2015, Cryptosporidium and Giardia in foals in BE, NL, DE, GR (Vet Parasitol) · sciencedirect.com/.../S0304401715002083

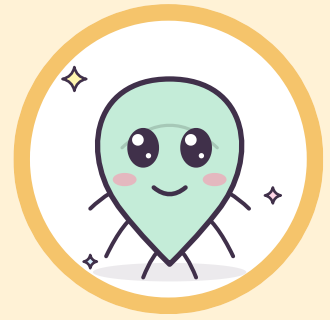
7 Lit. – Paul-Ehrlich-Institut: vaccines licensed for horses in Germany · pei.de/.../pferde-node.html

DIARRHOEA

Giardia

Giardia duodenalis (syn. *G. intestinalis*, *G. lamblia*)

Protozoon



A common gut parasite of many animals and people. Horses, especially foals, often carry it without signs; illness in horses is rarely reported.

🏠 Type

Lit. 1

Single-celled, whip-tailed (flagellate) gut parasite forming hardy cysts

⌘ Incubation ?1

Lit. 1

Not established for horses; in animals cysts appear 3–10 days after infection

➡ Transmission

Lit. 14

Cysts passed in faeces are swallowed, directly from infected animals or via contaminated water, feed or surroundings. Foals shed more cysts than older horses.

👤 Risk for people ?2

Lit. RKI 134

🟡🟡🟡 Low

Possibly. Horses can carry types A and B, which also infect people, but proven spread from animals is rare. People get diarrhoea and cramps, mostly via contaminated water or food.

📋 Key symptoms in horses ?3

Lit. 12

- Usually no signs at all
- Soft, pale, foul-smelling or fatty droppings
- Diarrhoea, possibly long-lasting
- Weight loss from poor nutrient uptake

📄 Test method & sample (from the form)

METHOD

SAMPLE

FORM CODE

ELISA (antigen)°

faeces (preferably 50 g)

#5270

🛡️ Prevention

Lit. RKI 135

- Remove droppings daily; let stables dry thoroughly
- Clean with steam, boiling water or quaternary ammonium disinfectants
- Provide clean drinking water
- Wash hands after handling foals and manure
- No vaccine for horses licensed in Germany

💡 Good to know

Cysts survive weeks to months in cool, damp places but die when dried out. About 10–14% of European foals shed cysts, usually without diarrhoea.

?1 Incubation: General animal figure (Merck); no horse-specific data found.

?3 Key symptoms in horses: Clinical giardiasis rarely reported in horses; no link with diarrhoea in European foals.

1 Lit. – Merck Veterinary Manual: Giardiasis in Animals · merckvetmanual.com/.../giardiasis-in-animals

2 Lit. – Merck Veterinary Manual (horse owners): Gastrointestinal Parasites of Horses · merckvetmanual.com/.../gastrointestinal-parasites-of-h...

3 RKI – RKI FG16: Darminfektionen mit einzelligen Parasiten (Giardia) · rki.de/.../Darminfektionen_einzellige_Para...

?2 Risk for people: RKI: zoonotic role of types A and B unclear; study suggests low risk.

4 Lit. – Kostopoulou et al. 2015, Cryptosporidium and Giardia in foals in BE, NL, DE, GR (Vet Parasitol) · sciencedirect.com/.../S03044401715002083

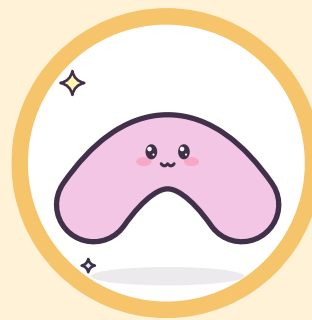
5 Lit. – Paul-Ehrlich-Institut: vaccines licensed for horses in Germany · pei.de/.../pferde-node.html

DIARRHOEA

Lawsonia

Equine proliferative enteropathy, EPE · *Lawsonia intracellularis*

Bacterium



Causes equine proliferative enteropathy: a thickened small intestine leaks protein, so weanlings lose weight and develop swellings. Diarrhoea is not always present; mostly autumn–winter.

Type

Lit. 1

Bacterium that can only live inside gut lining cells

Incubation

Lit. 1

About 14 days

Transmission ?1

Lit. 1 2

Not fully known; probably by swallowing faeces of infected animals. Wildlife, rodents and pigs may be sources. The bacterium survives up to two weeks in faeces at mild temperatures.

Risk for people

Lit. 1 4

○ ○ ○ No known risk

No known risk to people. The bacterium also infects pigs and some other animals, but no human infections are known.

Key symptoms in horses ?2

Lit. 1 2 3 4

- Swelling under belly, on head, legs or sheath
- Rapid weight loss, poor growth, rough coat
- Reduced appetite and dullness
- Fever and colic
- Diarrhoea in some foals only
- Very low blood protein (albumin) on testing

Test method & sample (from the form)

METHOD

SAMPLE

FORM CODE

PCR

faeces (preferably 50 g)

#5450

Prevention

Lit. 1 5

- Limit contact with rodents, wildlife and pigs
- Isolate sick foals about 7 days; remove manure promptly
- Have thin or swollen weanlings checked early
- No licensed horse vaccine; pig vaccine sometimes used off-label

Good to know

Mostly weanlings aged 2–8 months. About 5% of exposed foals fall ill. Recovery of body condition and protein can take months; affected yearlings may sell for less.

?1 **Transmission:** AAEP: route unknown, faecal–oral suspected; reservoir unknown.

1 Lit. – AAEP Infectious Disease Guidelines: Equine Proliferative Enteropathy (2023) · aaep.org/Lawsonia-intracellularis-DZ-Gui...

2 Lit. – Merck Veterinary Manual: Bacterial Diarrhea in Foals (EPE section) · merckvetmanual.com/bacterial-diarrhea-in-foals

3 Lit. – Frazer 2008, *Lawsonia intracellularis* infection in horses 2005–2007 (JVIM) · academic.oup.com/jvms/article/18/4/450/44

?2 **Key symptoms in horses:** Diarrhoea frequency varies: 26% of 57 US horses vs 4 of 5 Danish foals.

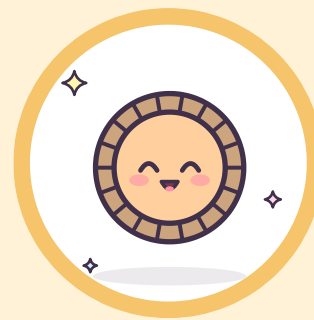
4 Lit. – Bohlin et al. 2019, EPE in Danish weanling foals (Acta Vet Scand) · ncbi.nlm.nih.gov/PMC6407178

5 Lit. – Paul-Ehrlich-Institut: vaccines licensed for horses in Germany · pei.de/pferde-node.html

Rotavirus

Equine rotavirus · *Rotavirus alphagastroenteritidis (rotavirus A)*; *rotavirus B* also found in foals

Virus



The most common viral cause of diarrhoea in foals. It spreads extremely fast on studs and causes watery diarrhoea and dangerous dehydration, mainly in foals under two months.

Type

✓ StlKo Vet Lit. 1 6

Non-enveloped double-stranded RNA virus (family Sedoreoviridae)

Incubation ?1

Lit. ✓ StlKo Vet 1 2

Short: 12–24 hours (AAEP) to 2–6 days (StlKo Vet)

Transmission

✓ StlKo Vet Lit. 1 2

Foals swallow virus from faeces of infected foals, via contaminated feed, hands, boots, tools and stables. Tiny amounts infect; sick foals shed huge numbers, and virus survives months in stables.

Risk for people ?2

Lit. 2 5

○ ○ ○ No known risk

No infections of people caught from horses are documented. Equine-like rotavirus genes have turned up in human strains through gene mixing, so hygiene around sick foals is sensible.

Key symptoms in horses

✓ StlKo Vet Lit. 1 2 3

- Sudden watery, high-volume diarrhoea, yellowish then grey
- Dullness, poor appetite; may stop suckling
- Rapid dehydration, can be life-threatening
- Usually no or only mild fever
- Very young foals: bloated belly and colic
- Prolonged diarrhoea from milk-sugar (lactose) intolerance

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR	faeces (preferably 50 g)	#5262

Prevention

✓ StlKo Vet Lit. 1 2 4

- Germany: mare vaccine at 8, 9, 10 months' pregnancy
- Foal needs enough colostrum within 6–12 hours
- Strict hygiene in foaling areas; avoid overcrowding
- Isolate sick foals; use virus-effective disinfectant, not bleach
- Never spread manure from affected studs on fields

Good to know

The inactivated vaccine (Equip Rotavirus) covers rotavirus A (G3) only and makes disease milder, not impossible; foals keep raised antibodies about 60 days. Rotavirus B is not covered.

?1 Incubation: Sources differ: AAEP 12–24 hours, StlKo Vet 2–6 days.

1 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. 2025 (Equine Rotavirus-Infektionen) · tieraerzteverband.de/.../impfleitlinie_Pferd_2025-01-06.pdf

2 Lit. – AAEP Infectious Disease Guidelines: Equine Rotavirus A and B · aaep.org/.../Equine-Rotavirus-AB-Guidelines-...

3 Lit. – Merck Veterinary Manual: Viral Diarrhea in Foals · merckvetmanual.com/.../viral-diarrhea-in-foals

?2 Risk for people: Rotaviruses are classed as zoonoses; horse-to-human cases not documented.

4 Lit. – Paul-Ehrlich-Institut: vaccines licensed for horses in Germany (Equip Rotavirus, 2012) · pei.de/.../pferde-node.html

5 Lit. – Cowley et al. 2016, Equine-like G3P[8] reassortant rotavirus in Australian children (J Gen Virol) · pubmed.ncbi.nlm.nih.gov/26588920

6 Lit. – Nakagomi & Nakagomi 2025, Interspecies transmission of animal rotaviruses (Pathogens) – taxonomy · pmc.ncbi.nlm.nih.gov/.../PMC12735868

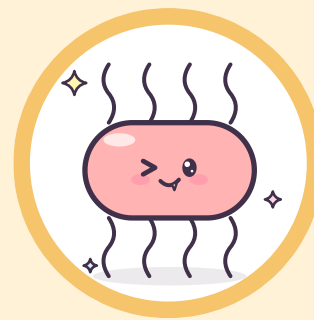
DIARRHOEA

Salmonella

Salmonellosis · *Salmonella enterica subsp. enterica* (many serovars, e.g. *Typhimurium*)

Bacterium

DE: reportable · lab/vet reports



A gut bacterium causing fever, severe diarrhoea and colic, especially in stressed, sick or hospitalised horses and newborn foals. It spreads easily and can infect people.

Type

✓ WOAH Lit. 1 2

Rod-shaped, Gram-negative gut bacterium; more than 2,500 types (serovars)

Incubation

Lit. 2

Hours to days, depending on dose, strain and the horse's resistance

Transmission

Lit. ✓ WOAH 1 2

Swallowed from faeces of sick or healthy carrier horses, directly or via pasture, feed, water, hands, boots, tools and flies. Stress, transport, colic, surgery or antibiotics make shedding and illness more likely.

Risk for people

?1

Lit. ✓ WOAH ✓ FLI RKI 1 2 3 4

Moderate

Yes. *Salmonella* types that make horses ill can seriously sicken people through contact with faeces, hands or equipment. Children, elderly, pregnant and immunocompromised people are most at risk.

Key symptoms in horses

Lit. ✓ WOAH ✓ StlKo Vet 1 2 5 6

- Fever, sometimes without diarrhoea
- Watery diarrhoea and colic (belly pain)
- Laminitis may follow severe gut inflammation
- Newborn foals: blood poisoning (sepsis)
- Foals: bloody diarrhoea, pneumonia, joint and bone infections
- Many horses shed it without any signs

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
Culture (BE aerobic) + PCR	faeces (preferably 50 g)	#5305

Prevention

Lit. ✓ StlKo Vet 2 5 7

- Isolate horses with diarrhoea or unexplained fever
- Keep newcomers separate; keep other animal species away
- Clean, then disinfect stables; use separate tools
- Wear gloves, wash hands; avoid pressure washing
- No *Salmonella* vaccine for horses available

Good to know

Recovered horses may shed for 30–60+ days, a few intermittently for longer. The bacteria have survived 300 days in soil, 9 months in water, 30 months in dried faeces.

?1 Risk for people: RKI: direct animal-to-human spread very rare; AAEP/WOAH stress real risk for handlers.

Germany: TierSeuchMeldV 2026, Annex 3 No. 3.

1 WOAH – Terrestrial Manual ch. 3.10.7: Salmonellosis (2022) · woah.org/.../3.10.07_SALMONELLOSIS.pdf

2 Lit. – AAEP Infectious Disease Guidelines: Salmonellosis (revised 2026) · aaep.org/.../Salmonellosis-Infectious-Diseas...

3 FLI – FLI National Reference Laboratory for Salmonellosis in Cattle (zoonosis overview) · fli.de/.../hrl-for-salmonellosis-in-cattle

4 RKI – RKI-Ratgeber Salmonellose · rki.de/.../Ratgeber_Salmonellose.html

5 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. 2025 (foal diarrhoea differentials) · tieraerzteverband.de/.../Impfleitlinie_Pferd_2025-01-06.pdf

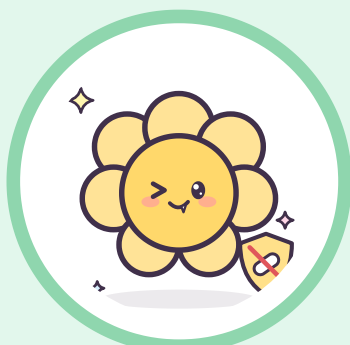
6 Lit. – Merck Veterinary Manual: Bacterial Diarrhea in Foals · merckvetmanual.com/.../bacterial-diarrhea-in-foals

7 Lit. – Paul-Ehrlich-Institut: vaccines licensed for horses in Germany · pei.de/.../pferde-node.html

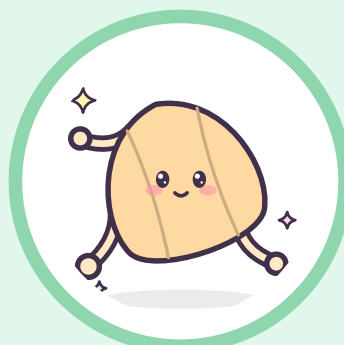
SECTION 5

Bacteriology and Mycology

Culture-based tests on swabs, tissue or blood. They identify which bacteria or fungi grow – and which antibiotics still work.



ORSA / MRSA



Ringworm

Fact sheets

ORSA / MRSA	MRSA / ORSA (methicillin-resistant <i>Staphylococcus aureus</i>)	28
Ringworm	Ringworm (dermatophytes)	29

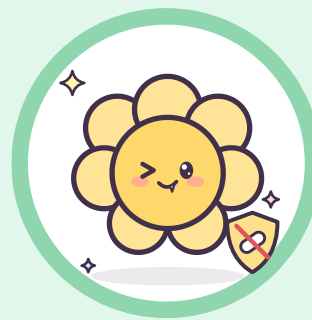
General tests in this section (not pathogen-specific)

Clinical sample – Panel 1: aerobic culture incl. ORSA, resistograms	culture swab, native material	#5043
Clinical sample – Panel 2: aerobic & anaerobic culture incl. ORSA, resistograms	culture swab, native material	#5044
Anaerobic culture	culture swab, native material	#5001
Mycological examination without dermatophytes	culture swab	#5002
Mycological examination incl. dermatophytes	skin scraping	#5046
Blood culture, aerobic, incl. resistograms	BC flask aerobic	#5047
Blood culture, anaerobic	BC flask anaerobic	#5048

ORSA / MRSA

MRSA / ORSA (methicillin-resistant *Staphylococcus aureus*) · *Staphylococcus aureus*, methicillin- (oxacillin-) resistant strains (MRSA = ORSA)

Bacterium



Antibiotic-resistant staph bacteria that horses can carry unnoticed in the nose. They can cause hard-to-treat wound and surgical infections and pass between horses and people.

Type

Lit. RKI 3 4

Gram-positive *Staphylococcus aureus* strain resistant to many antibiotics

Incubation ?1

Lit. 2 6

Not defined: carriers may stay healthy; infection follows wounds or surgery

Transmission

Lit. RKI 2 3 4 5

Spread mainly by hands and direct contact, between horses and people in both directions, and via equipment. Hospital stays, surgery and earlier antibiotic treatment raise the risk. Most carrier horses stay healthy.

Risk for people

Lit. RKI 1 2 4

● ● ○ **Moderate**

Yes. About 1 in 5 German equine vet staff tested carried horse-type MRSA in the nose; infections are occasional. Risk is higher for people with wounds, diabetes or weak immunity.

Key symptoms in horses

Lit. 1 2 3 6

- Usually none: healthy carrier in the nose
- Wound or surgical site infections that won't heal
- Infected catheter or injection sites
- Joint infection with lameness
- Pneumonia or womb infection (less common)

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
Aerobic culture incl. ORSA screening + resistograms (Panel 1)	culture swab, native material	#5043
Aerobic & anaerobic culture incl. ORSA + resistograms (Panel 2)	culture swab, native material	#5044

Prevention

Lit. RKI 3 4 5

- Wash hands after handling horses, even after gloves
- Wear gloves for wound care; discard dressings safely
- Isolate infected or carrier horses
- Use antibiotics only as prescribed by your vet
- Disinfect treatment areas and equipment

Good to know

Healthy horses carry MRSA rarely (0–6%), but rates are much higher in equine clinics. Most German horse MRSA belong to lineage CC398; spread into the wider community appears rare.

?1 **Incubation:** No incubation period established for horses; RKI gives 4–10 days for human infections.

1 Lit. – MRSA from infections in horses in Germany: colonisers of veterinarians, rare in human infections (Cuny et al., RKI-led, One Health) · pmc.ncbi.nlm.nih.gov/PMC5441336

2 Lit. – MRSA in horses and horse personnel, 2000–2002 (Emerg Infect Dis 2005) · wwwnc.cdc.gov/04-0481_article

3 Lit. – Biosecurity and equine infectious diseases (Roberts, Encyclopedia of Agriculture and Food Systems 2014) · pmc.ncbi.nlm.nih.gov/PMC7152246

4 RKI – RKI-Ratgeber Staphylokokken-Erkrankungen, insbesondere MRSA · rki.de/.../Ratgeber_Staphylokokken_MRSA.html

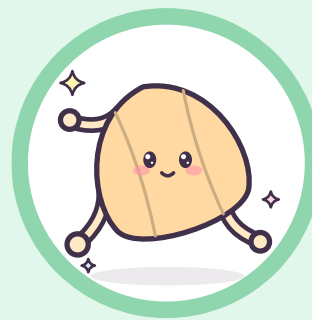
5 Lit. – Antimicrobial resistance in horses (Steinman & Navon-Venezia, Animals 2020) · pmc.ncbi.nlm.nih.gov/PMC7401552

6 Lit. – MRSA outbreak in a Dutch equine referral clinic (J Med Microbiol 2024) · pmc.ncbi.nlm.nih.gov/PMC11361372

Ringworm

Trichophyton equinum (main), also *Microsporum canis*, *Trichophyton mentagrophytes* and other dermatophytes

Fungus



A common, contagious fungal skin infection causing round bald, scaly patches, often under tack. Rarely dangerous, but spores persist for months and people can catch it.

Type

✓ StlKo Vet 1

Thread-like skin fungi that feed on keratin; spread by spores

Incubation

✓ StlKo Vet 1

4–30 days; untreated, usually heals within 1–6 months

Transmission

✓ StlKo Vet Lit. 1 3

Direct contact with infected horses, or indirectly via spores on grooming kit, tack, rugs, stable fittings, transport vehicles and parasites. Infected hairs are the main source; some horses carry spores without signs.

Risk for people

✓ StlKo Vet Lit. 1 3 4

Moderate

Yes. People catch it by touching infected horses or contaminated kit, typically as ring-shaped, scaly skin patches about 1–2 weeks later. Dermatophytes are important zoonotic agents; some species spread to people more readily.

Key symptoms in horses

✓ StlKo Vet Lit. 1 2 3

- Small raised tufts or hive-like lumps
- Round, bald, scaly or crusty patches
- Brittle hair that pulls out in tufts
- Mainly saddle, girth, shoulder, neck and head
- Itching variable, often absent
- Secondary bacterial skin infection possible

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
Mycological examination incl. dermatophytes (fungal culture)	skin scraping	#5046

Prevention

✓ StlKo Vet Lit. 1 2 5

- Own grooming kit, saddle cloth and rugs per horse
- Isolate affected horses; treat all in-contact horses
- Wash and disinfect kit and stables weekly
- Licensed vaccines: two doses 14 days apart
- Vaccines speed healing but do not prevent infection

Good to know

Spores survive months to years in stables, pasture and shed hair. Recovery speeds healing of later infections but does not prevent them. Fungal culture results take at least three weeks.

1 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed. (Stand 06.01.2025) · tieraerzteverband.de/.../impfleitlinie_Pferd_2025-01-06.pdf

2 Lit. – Merck Veterinary Manual: Dermatophytosis in Horses · merckvetmanual.com/.../dermatophytosis-in-horses

3 Lit. – Merck Veterinary Manual (horse owners): Ringworm in Horses · merckvetmanual.com/.../ringworm-dermatophytosis-in-horses

4 Lit. – CFSPH Iowa State University: Dermatophytosis factsheet · cfsp.h.iastate.edu/.../dermatophytosis.pdf

5 Lit. – Paul-Ehrlich-Institut: licensed veterinary vaccines for horses (German licensing authority) · pei.de/.../pferde-node.html

SECTION 6

Parasitology

Worms detected in droppings. Faecal egg counts guide targeted deworming instead of routine treatment.



Intestinal worms



Lungworm

Fact sheets

Intestinal worms Intestinal worms (strongyles, roundworms, tapeworms, liver fluke)

31

Lungworm Lungworm (*Dictyocaulus arnfieldi*)

32

Intestinal worms

Strongyles, roundworms, tapeworms, liver fluke · *Cyathostominae* (small strongyles), *Strongylus* spp. (large strongyles), *Parascaris* spp., *Anoplocephala perfoliata*, *Fasciola hepatica*

Worm (helminth)



Small redworms occur on practically every horse farm. Heavy worm burdens cause weight loss, diarrhoea or colic, and wormer resistance is widespread, so base worming on dung tests.

Type

Lit. 1

Parasitic worms: roundworms (nematodes), tapeworms and flukes

Incubation

Lit. 1

Eggs appear 6 weeks to 7 months after infection, depending on worm type

Transmission

Lit. 1

Worm eggs pass in droppings. Strongyle larvae develop on grass and are swallowed while grazing; roundworm eggs survive years in the environment; tapeworms come via tiny pasture mites, liver fluke via snails on wet pasture.

Risk for people

?1

Lit. 12

Low

Liver fluke occasionally infects people who eat raw contaminated water plants, not through horse contact. Equine strongyles, roundworms and tapeworms are not known to infect people.

Key symptoms in horses

Lit. 1

- Often no signs with light burdens
- Weight loss, dull coat, poor condition
- Diarrhoea, sometimes sudden and severe (small redworms)
- Colic, including gut blockage by roundworms or tapeworms
- Cough and poor growth in foals (roundworms)
- Anaemia with heavy worm or fluke burdens

Test method & sample (from the form)

METHOD

SAMPLE

FORM CODE

Sedimentation and flotation (egg detection) faeces

#5200

The form lists the method, not single species – this sheet groups the worms that method can detect.

Prevention

Lit. 1

- Dung egg counts first; worm only horses that need it
- Pick up droppings from pasture at least twice weekly
- Worm and quarantine new arrivals before turnout
- Worm foals from 2 months, every 3 months
- Repeat egg count after worming to check it worked

Good to know

Resistance is common: small redworms to benzimidazoles, roundworms to ivermectin-type wormers. One tapeworm treatment yearly in late autumn or winter usually suffices.

?1 Risk for people: Only liver fluke documented as zoonotic; human risk of other equine worms not explicitly addressed.

1 Lit. – ESCCAP Guideline 08: Equine gastrointestinal parasites, 2nd ed. 2019 · escap.org/.../t14bnmhx_0796_ESCCAP_Guideline_...

2 Lit. – WHO fact sheet: Foodborne trematode infections · who.int/.../foodborne-trematode-infections

Lungworm

Dictyocaulus arnfieldi

Worm (helminth)



A roundworm living in the airways that donkeys carry, usually without signs. Horses grazing with donkeys can develop a stubborn cough that does not respond to antibiotics.

Type

Lit. 1 2

Parasitic roundworm (nematode) living in the airways

Incubation ?1

Lit. 1

About 3 months until larvae appear; time to first cough unclear

Transmission

Lit. 1 2

Larvae pass in droppings, mainly from donkeys, and develop on pasture. Horses swallow them while grazing. Adult horses rarely shed larvae, so donkeys are the main source of pasture contamination.

Risk for people ?2

Lit. 1 2

○○○ **No known risk**

Not known to infect people. This lungworm lives in donkeys, horses and mules.

Key symptoms in horses

Lit. 1 2

- Persistent cough, the most common sign
- Cough not improving with antibiotics
- Thick nasal discharge from both nostrils
- Faster or laboured breathing
- Weight loss, poor condition
- Donkeys usually show no signs

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
Migration technique (Baermann) – larvae detection	faeces	#5202

Prevention

Lit. 1 2

- Avoid grazing horses with donkeys, the main source
- Include donkeys in the yard's worm control plan
- Standard wormers such as ivermectin or moxidectin work

Good to know

In horses the worms rarely mature, so dung tests often miss them; an airway wash by the vet is more reliable.

?₁ **Incubation:** Only the prepatent period (about 3 months) is documented.

1 Lit. – ESCCAP Guideline 08: Equine gastrointestinal parasites, 2nd ed. 2019 · escap.org/.../k14bnmhx_0796_ESCCAP_Guideline_...

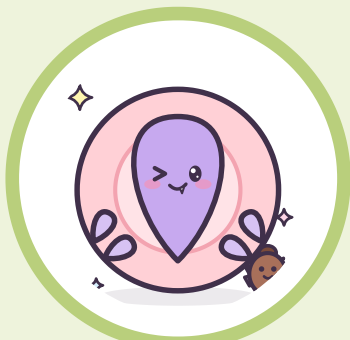
?₂ **Risk for people:** No fetched source addresses human infection; known hosts are equids only.

2 Lit. – Merck Veterinary Manual: Lungworm Infection in Animals · merckvetmanual.com/.../lungworm-infection-in-animals

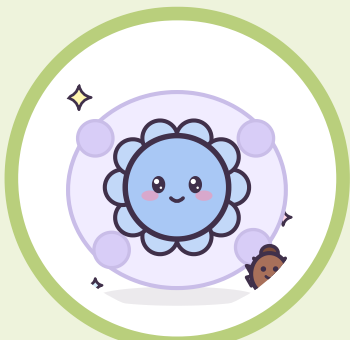
SECTION 7

Tick-borne Diseases

Pathogens carried by ticks. Check your horse after grazing in tall grass and woodland edges.



Piroplasmosis



Anaplasmosis



Lyme disease

Fact sheets

Piroplasmosis	Equine piroplasmosis (Theileria equi, Babesia caballi)	34
Anaplasmosis	Equine granulocytic anaplasmosis (Anaplasma phagocytophilum)	35
Lyme disease	Lyme borreliosis (Borrelia burgdorferi sensu lato)	36

TICK-BORNE DISEASES

Piroplasmosis

Equine piroplasmosis · *Theileria equi* (formerly *Babesia equi*) and *Babesia caballi*

Protozoon

WOAH-listed



Two tick-borne blood parasites that destroy red blood cells, causing fever and anaemia. Recovered horses often stay carriers, and a few horses have now caught it in Germany.

Type

✓ WOA 1 2

Tick-borne single-celled parasites of red blood cells

Incubation

✓ WOA Lit. 2 4

T. equi 12–19 days; B. caballi about 10–30 days

Transmission

✓ WOA Lit. 1 2 4 5 6

Spread by ticks (Dermacentor, Rhipicephalus, Hyalomma; in Germany especially the spreading ornate dog tick, Dermacentor reticulatus). Also via blood on shared needles, instruments or transfusions, and T. equi from mare to foal.

Risk for people

✓ WOA Lit. 3 4 7

No known risk

Not shown to infect people. Human babesiosis in Europe is mainly caused by other species, such as the cattle parasite Babesia divergens, not horse parasites.

Key symptoms in horses

✓ WOA Lit. 1 2 5 6

- High fever, often above 40 °C
- Dullness, poor appetite, fast breathing and pulse
- Anaemia and jaundice (pale or yellow gums)
- Dark red urine
- Swollen legs, colic or diarrhoea
- Chronic form: weight loss, poor performance

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR (direct detection)	EDTA blood	#1020, 1120
IFAT (antibodies)	serum	#1001, 1101

Prevention

✓ WOA Lit. 1 2 4 6

- No vaccine is available
- Daily tick checks; repellents help but protection is limited
- New sterile needle per horse; never share instruments
- Blood-test imported or travelling horses; screen blood donors

Good to know

T. equi is more severe and usually persists for life, often even after treatment; B. caballi usually clears within about 4 years. Healthy-looking carriers can infect ticks.

WOAH list: "Infection with Theileria equi and Babesia caballi (Equine piroplasmosis)" (Terrestrial Code ch. 1.3).

1 WOA – Terrestrial Manual ch. 3.6.7 Equine piroplasmosis (2021 update) · woah.org/.../3.06.07_EQUINE_PIROPLASMOSIS.pdf

2 WOA – Technical disease card: Equine piroplasmosis · woah.org/.../equine-piroplasmosis-1.pdf

3 WOA – Equine piroplasmosis – disease page · woah.org/.../equine-piroplasmosis

4 Lit. – AAEP Infectious Disease Guidelines: Equine Piroplasmosis (2021) · aaep.org/.../AAEPEquinePiroplasmosisGuidelin...

5 Lit. – Twenty Years of Equine Piroplasmosis Research (Pathogens 2020, review) · pmc.ncbi.nlm.nih.gov/.../PMC7695325

6 Lit. – Die equine Piroplasmose: Fokus Deutschland (Tierärztl. Praxis G 2024, TiHo Hannover/Laboklin) · pmc.ncbi.nlm.nih.gov/.../PMC11835481

7 Lit. – Merck Veterinary Manual: Babesiosis in Animals · merckvetmanual.com/.../babesiosis-in-animals

TICK-BORNE DISEASES

Anaplasmosis

Equine granulocytic anaplasmosis · *Anaplasma phagocytophilum* (formerly *Ehrlichia equi*)

Bacterium



A tick-borne bacterium that infects white blood cells and causes sudden high fever in horses. Found wherever the castor bean tick lives, including Germany; antibiotics work well.

Type

✓ FLI Lit. 1 2

Tick-borne bacterium living inside white blood cells

Incubation

Lit. 2 3 4

Usually 1–2 weeks after the tick bite; up to 3 weeks reported

Transmission

✓ FLI Lit. 1 2 3 4

Spread by bites of Ixodes ticks (in Europe the castor bean tick); wild rodents and deer are reservoirs. Not contagious between horses, except rarely via blood (shared needles) or mare to unborn foal.

Risk for people

✓ FLI Lit. RKI 1 2 3 5

Low

Horses do not pass it to people. Humans can catch the same bacterium from tick bites (human granulocytic anaplasmosis), but cases in Germany are very rare.

Key symptoms in horses

Lit. 2 3 4

- High fever, sometimes the only sign in youngsters
- Dullness, reduced appetite, reluctance to move
- Swollen lower legs
- Yellow gums or eyes (jaundice)
- Pinpoint bleeds on gums or eye membranes
- Wobbly gait in some horses

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR (direct detection)	EDTA blood, tick°	#2302
IFAT (antibodies)	serum	#2300

Prevention

Lit. 2 3 4

- No vaccine is available
- Check horses daily for ticks; remove them promptly
- Use permethrin-based tick repellents in tick season
- Avoid tick habitats where possible, e.g. woodland edges

Good to know

Peaks with tick activity in spring and autumn. Recovered horses are not known to stay carriers and are usually immune for at least two years.

1 FLI – Institute of Bacterial Infections and Zoonoses: Working group Rickettsiology · fli.de/.../working-group-rickettsiology

2 Lit. – Merck Veterinary Manual: Equine Granulocytic Anaplasmosis · merckvetmanual.com/.../equine-granulocytic-anaplasmosis

3 Lit. – AAEP Infectious Disease Guidelines: Equine Granulocytic Anaplasmosis · aaep.org/.../Equine_Granulocytic_Anaplasmosi...

4 Lit. – VISAVET (Complutense University Madrid) INFEQUUS: Equine granulocytic anaplasmosis · visavet.es/.../equine-granulocytic-anaplasmosi...

5 RKI – Zeckenübertragene Erkrankungen – FAQ · rki.de/.../Zecken.html

TICK-BORNE DISEASES

Lyme disease

Lyme borreliosis · *Borrelia burgdorferi sensu lato* (syn. *Borrelia*); in Europe mainly *B. afzelii*, *B. garinii*

Bacterium



A tick-borne bacterium that infects many horses, yet proven illness in horses is rare. Documented problems include eye inflammation, nervous system disease and skin lumps.

Type

Lit. 2 5

Spiral-shaped, tick-borne bacterium (spirochaete)

Incubation ?1

Lit. 2 3

Not established in horses; antibodies appear about 3–10 weeks after infection

Transmission

Lit. RKI 1 2 3 4

Spread by bites of Ixodes ticks (in Europe the castor bean tick); transmission needs hours to days of feeding. Horses are dead-end hosts: no spread between horses or from horses to people.

Risk for people ?2

Lit. RKI 2 4

Low

Horses do not infect people, but the same ticks transmit Lyme disease to humans. Check yourself for ticks after yard work; see a doctor for a spreading ring-shaped rash.

Key symptoms in horses ?3

Lit. 1 2 3

- Most infected horses never show signs
- Stiffness, shifting or intermittent lameness (poorly proven)
- Eye inflammation (uveitis), often in both eyes
- Nervous signs: wobbliness, facial paralysis, swallowing problems
- Rare skin lumps (cutaneous pseudolymphoma)
- Behaviour change, sensitive skin, muscle wasting (unproven)

Test method & sample (from the form)

METHOD

SAMPLE

FORM CODE

PCR (direct detection)

tick°, synovial fluid°, EDTA blood, cerebrospinal fluid, skin biopsy°

#3012

Prevention

Lit. 1 2 3

- No vaccine is licensed for horses
- Check daily for ticks and remove them quickly
- Use permethrin or other pyrethroid repellents in tick season
- Mow pastures; limit grazing near woodland edges

Good to know

Locally up to 30% of ticks in Germany carry *Borrelia*. Antibodies are common in healthy horses, so a positive blood test alone does not prove disease.

?1 **Incubation:** No equine incubation period established; only time to antibody response is known.

?3 **Key symptoms in horses:** Only nervous, eye and skin forms well documented; lameness and stiffness poorly proven; data mostly North American.

1 Lit. – ACVIM consensus: *B. burgdorferi* infection and Lyme disease in North American horses (JVIM 2018) · academic.oup.com/jvim/article/30/12/1844/5160808

2 Lit. – AAEP Infectious Disease Guidelines: *Borrelia burgdorferi* infection and Lyme disease · aaep.org/Borrelia-Burgdorferi-Infection-...

?2 **Risk for people:** Not spread from horses; Lyme from the same ticks regularly affects people, so the level is a judgement.

3 Lit. – VISAVET (Complutense University Madrid) INFEQUUS: Lyme disease · visavet.es/lyme-disease.php

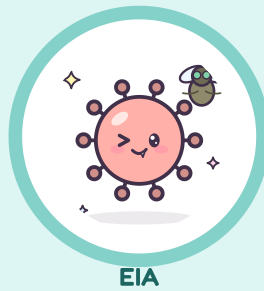
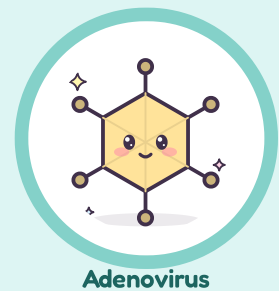
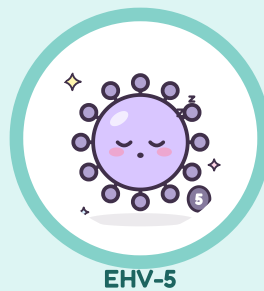
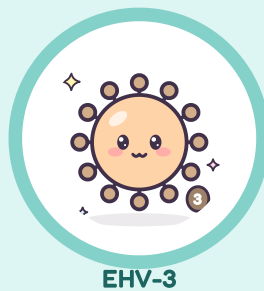
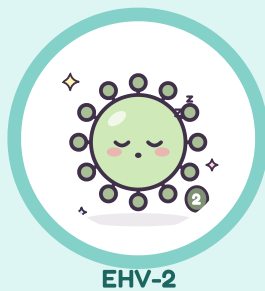
4 RKI – Zeckenübertragene Erkrankungen – FAQ · rki.de/Zecken.html

5 Lit. – LPSN (DSMZ): *Borrelia burgdorferi* nomenclature · lpsn.dsmz.de/borrelia-burgdorferi

SECTION 8

Additional Tests

Further viruses and parasites the lab tests for – from mild skin or eye infections to notifiable diseases.



Fact sheets

EHV-2 Equine herpesvirus 2 (EHV-2)	38
EHV-3 Equine herpesvirus 3 (EHV-3, equine coital exanthema)	39
EHV-5 Equine herpesvirus 5 (EHV-5)	40
Adenovirus Equine adenovirus 1 (EAdV-1)	41
EIA Equine infectious anaemia (EIA, swamp fever)	42
EPM Equine protozoal myeloencephalitis (EPM)	43

Also tested in this section

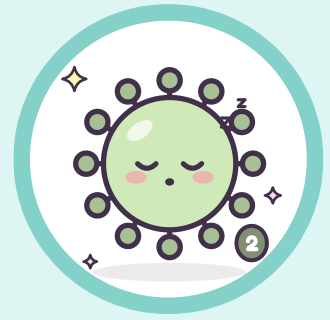
EVA on the form here too – fact sheet in “Abortion”	7
Leptospirosis on the form here too – fact sheet in “Abortion”	8

ADDITIONAL TESTS

EHV-2

Equine herpesvirus 2 · *Percavirus equidgamma2* (*Equid gammaherpesvirus 2*)

Virus



A herpesvirus that nearly all horses catch as foals and carry for life. Usually harmless; its role in eye inflammation and airway disease is still debated.

Type

Lit. 4

DNA virus (gammaherpesvirus, genus Percavirus)

Incubation ?1

Not established for horses

Transmission

Lit. 2

Through nasal secretions and close contact. Most foals are infected by their mothers or other foals within the first months of life. Carriers shed the virus again from time to time.

Risk for people ?2

Lit. 12

○○○ **No known risk**

No known risk. No human infections are described in the sources consulted.

Key symptoms in horses ?3

Lit. 12

- Often no signs at all
- Sore, runny, inflamed eyes
- Sore throat in foals
- Nasal discharge and cough
- Poor performance; possibly mild asthma in young horses

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR	dry swab	#1922

Prevention ?4

Lit. ✓ StlKo Vet 23

- No vaccine available (none listed by StlKo Vet)
- Infection is near-universal; avoiding it is unrealistic
- Have eye or breathing problems checked early

Good to know

A positive EHV-2 test does not prove it caused the illness, as healthy horses often carry it. Foals usually test positive by five months of age.

?1 **Incubation:** No incubation period given in any fetched authoritative source.

?3 **Key symptoms in horses:** Also found in healthy horses; a causal role is suggested but unproven.

1 Lit. – Merck Veterinary Manual: Equine herpesvirus infection (EHV-2 section) · merckvetmanual.com/.../equine-herpesvirus-infection

2 Lit. – Kinetics of EHV-2 and EHV-5 infections in mares and foals, three Polish national studs (peer-reviewed) · pmc.ncbi.nlm.nih.gov/.../PMC9031536

?2 **Risk for people:** Sources do not address human infection explicitly; none reported.

?4 **Prevention:** No specific prevention guidance found; vaccine absence inferred from the StlKo Vet list.

3 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed., 06.01.2025 (copy hosted by bpt) · tieraerzteverband.de/.../impfleitlinie_Pferd_2025-01-06.pdf

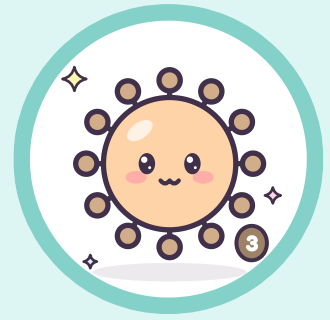
4 Lit. – NCBI Taxonomy: Percavirus equidgamma2 · ncbi.nlm.nih.gov/.../wwtax.cgi

ADDITIONAL TESTS

EHV-3

Equine herpesvirus 3 (EHV-3, equine coital exanthema) · *Varicellovirus equidalpha3*
(*Equid alphaherpesvirus 3*)

Virus



A herpesvirus spread mainly by mating. It causes painful blisters and sores on the genitals of mares and stallions, disrupting the breeding season, but is rarely serious.

Type

Lit. 3

DNA virus (alphaherpesvirus, genus Varicellovirus)

Incubation

Lit. 12

About 4–9 days after mating or contact

Transmission

Lit. 12

Mainly by mating. Also spread by shared gloves, examination instruments and artificial vaginas during breeding work and artificial insemination. Horses carrying the dormant virus can shed it again later.

Risk for people ?1

Lit. 12

○ ○ ○ **No known risk**

No known risk. No human infections are described in the sources consulted.

Key symptoms in horses

Lit. 12

- Small red bumps on vulva, penis or sheath
- Blisters that burst into painful sores
- Painful mating for stallions
- Discharge if sores become infected with bacteria
- White, unpigmented scars after healing
- Usually no general illness

Test method & sample (from the form)

METHOD

SAMPLE

FORM CODE

PCR

dry swab

#1932

Prevention

Lit. 12

- No vaccine available
- No breeding until all sores have healed
- Fresh disposable gloves and equipment for each mare
- Examine mares and stallions before every covering
- Isolate affected horses until healed

Good to know

Skin sores usually heal within 2–3 weeks. Fertility and pregnancies are not affected. The virus can lie dormant in the body and flare up again later.

?1 **Risk for people:** Sources do not address human infection explicitly; none reported.

1 Lit. – Merck Veterinary Manual: Equine coital exanthema · merckvetmanual.com/.../equine-coital-exanthema

2 Lit. – Equine coital exanthema: new insights (Pathogens, 2021, peer-reviewed review) · pmc.ncbi.nlm.nih.gov/.../PMC8398825

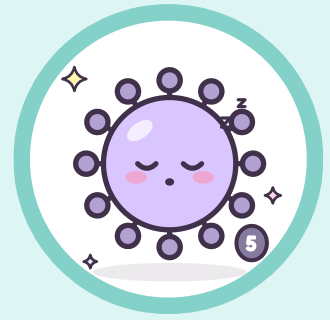
3 Lit. – NCBI Taxonomy: Varicellovirus equidalpha3 · ncbi.nlm.nih.gov/.../wwwtax.cgi

ADDITIONAL TESTS

EHV-5

Equine herpesvirus 5 · *Percavirus equidgamma5* (Equid gammaherpesvirus 5)

Virus



A herpesvirus most horses carry without problems. In some horses, mainly middle-aged ones, it is linked to a serious lung-scarring disease (EMPF) causing cough and weight loss.

Type

Lit. 1 5

DNA virus (gammaherpesvirus, genus Percavirus)

Incubation ?1

Not established for horses

Transmission ?3

Lit. 2

Probably through nasal secretions and close contact, as with EHV-2. Foals become infected early in life, before weaning. Infected horses carry the virus for life.

Risk for people ?2

Lit. 1 2

○ ○ ○ No known risk

No known risk. No human infections are described in the sources consulted.

Key symptoms in horses ?4

Lit. 1

- Usually no signs in carrier horses
- Weight loss
- Cough
- Fast or laboured breathing
- Fever, which may come and go

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
PCR	dry swab	#1952

Prevention ?5

Lit. ✓ StlKo Vet 1 4

- No vaccine available (none listed by StlKo Vet)
- See a vet early for cough with weight loss
- Antiviral treatment exists; early diagnosis matters

Good to know

About half of horses with EMPF survive. A positive EHV-5 test alone means little, because many healthy horses carry the virus.

?1 Incubation: No incubation period given in any fetched authoritative source.

?3 Transmission: Route inferred from foal studies; not specifically proven for EHV-5.

?5 Prevention: No specific prevention guidance found; vaccine absence inferred from the StlKo Vet list.

1 Lit. – Merck Veterinary Manual: Equine herpesvirus infection (EHV-5 and EMPF) · merckvetmanual.com/.../equine-herpesvirus-infection

2 Lit. – Kinetics of EHV-2 and EHV-5 infections in mares and foals, three Polish national studs (peer-reviewed) · pmc.ncbi.nlm.nih.gov/.../PMC9031536

?2 Risk for people: Sources do not address human infection explicitly; none reported.

?4 Key symptoms in horses: EHV-5 induces lung fibrosis experimentally, but its exact role in EMPF remains unclear.

3 Lit. – Williams et al. 2013, PLoS One: EHV-5 induces pulmonary fibrosis in horses ·.ncbi.nlm.nih.gov/.../PMC3795644

4 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed., 06.01.2025 (copy hosted by bpt) · tieraerzteverband.de/.../impfleitlinie_Pferd_2025-01-06.pdf

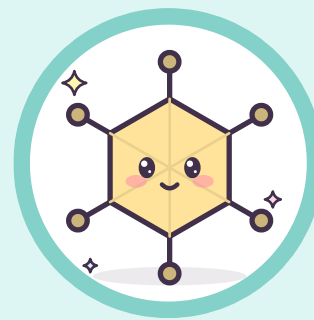
5 Lit. – NCBI Taxonomy: Percavirus equidgamma5 · ncbi.nlm.nih.gov/.../wwwtax.cgi

ADDITIONAL TESTS

Adenovirus

Equine adenovirus 1 (EAdV-1) · *Mastadenovirus equi* (equine adenovirus 1; formerly *Equine mastadenovirus A*)

Virus



A widespread respiratory virus, often found in healthy horses and usually mild. It can be deadly for foals born with an inherited immune defect (SCID), seen in Arabians.

Type

Lit. 2 5

DNA virus (adenovirus, genus Mastadenovirus)

Incubation ?1

Not established for horses

Transmission

Lit. 1 2

By droplets and close contact with nose and eye secretions; the virus is also shed in droppings. Healthy-looking horses can shed it, sometimes for weeks after infection.

Risk for people ?2

Lit. 1 2

○ ○ ○ No known risk

No known risk. No human infections are described in the sources consulted.

Key symptoms in horses ?3

Lit. 1 2 3

- Often no signs at all
- Nasal discharge and cough after exercise
- Red, runny eyes (conjunctivitis)
- Fever and swollen glands under the jaw
- Soft droppings
- Severe pneumonia in immunodeficient foals

Test method & sample (from the form)

METHOD

SAMPLE

FORM CODE

PCR

dry swab

#1562

Prevention ?4

Lit. ✓ StlKo Vet 1 4

- No commercial vaccine; only experimental vaccines exist
- Genetic testing of Arabian breeding stock for SCID
- Isolate coughing horses and practise good hygiene

Good to know

Healthy horses usually recover within 7–10 days. SCID foals often die of adenovirus pneumonia once maternal antibodies wane, at about 2–5 months.

?1 Incubation: No incubation period for natural infection in any fetched source.

?3 Key symptoms in horses: Rarely linked to disease in healthy horses; serious mainly in immunodeficient foals.

1 Lit. – Studdert MJ: Equine adenoviruses, in Equine Respiratory Diseases (IVIS, 2003; University of Melbourne) · ivis.org/.../equine-adenoviruses

2 Lit. – First molecular survey of equine adenovirus 1 in horses in Poland (Int J Mol Sci, 2026) · pmc.ncbi.nlm.nih.gov/.../PMC13467118

3 Lit. – Merck Veterinary Manual: Overview of respiratory diseases of horses · merckvetmanual.com/.../overview-of-respiratory-disease...

?2 Risk for people: Sources do not address human infection explicitly; none reported.

?4 Prevention: Hygiene advice is general; vaccine absence inferred from StlKo Vet list and 2003 review.

4 StlKo Vet – Leitlinie zur Impfung von Pferden, 5th ed., 06.01.2025 (copy hosted by bpt) · tieraerzteverband.de/.../Impfleitlinie_Pferd_2025-01-06.pdf

5 Lit. – NCBI Taxonomy: Equine adenovirus 1 (species Mastadenovirus equi) · ncbi.nlm.nih.gov/.../wwwtax.cgi

ADDITIONAL TESTS

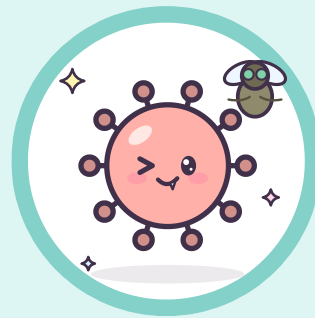
EIA

Equine infectious anaemia (EIA, swamp fever) · *Lentivirus equinfane* (equine infectious anaemia virus, EIAV)

Virus

WOAH-listed

DE: notifiable · owner reports



A blood-borne virus disease with no cure or vaccine. Infected horses carry the virus for life, often without signs, so they are a lasting source of infection.

Type

✓ WOAHLit. 1 5

Retrovirus of the lentivirus group; infection lasts for life

Incubation

✓ WOAHL 1

Usually 1–3 weeks, but can be up to 3 months

Transmission

✓ WOAHL 1 3 4

Spread through blood: mainly by horseflies and stable flies carrying blood between horses within about 200 m, and by shared needles, instruments or blood products. Also from mare to foal before birth.

Risk for people

✓ WOAHL 1 2 3

No known risk

People cannot catch EIA: WOAHL and FLI state the virus poses no risk to human health.

Key symptoms in horses

✓ WOAHL 1 3 4

- Often no visible signs (30–90% of cases)
- Repeated bouts of fever
- Anaemia, dullness and weakness
- Rapid weight loss
- Swelling under the belly and on lower legs
- Pinpoint bleeds under the tongue or eyelid linings

Test method & sample (from the form)

METHOD	SAMPLE	FORM CODE
Coggins test (AGID, antibodies)	serum	#1200
ELISA (antibodies)	serum	#1202

Prevention

✓ WOAHL 1 2 3 4

- No vaccine or cure exists
- Use a new sterile needle and syringe every time
- Never use untested or unlicensed blood products
- Quarantine and blood-test newly arrived or imported horses
- Reduce horsefly and stable fly exposure

Good to know

Cases in Germany are sporadic and often linked to imported horses. Donkeys, mules and zebras can also be infected.

WOAHL list: "Equine infectious anaemia" (Terrestrial Code ch. 1.3); Germany: TierSeuchMeldV 2026, Annex 1 Sect. 2 No. 13.

1 WOAHL – Terrestrial Manual ch. 3.6.5 Equine infectious anaemia (2019 update) · woah.org/.../3.06.05_EIA.pdf

2 WOAHL – Equine infectious anaemia – disease page · woah.org/.../equine-infectious-anaemia

3 FLI – Tierseuchengeschehen: Ansteckende Blutarmut der Einhufer · fli.de/.../ansteckende-blutarmut-der-einhufer

4 FLI – Ansteckende Blutarmut der Einhufer – der Status quo · fli.de/.../Ansteckende_Blutarmut_2010.pdf

5 Lit. – NCBI Taxonomy: *Lentivirus equinfane* · ncbi.nlm.nih.gov/.../wwwtax.cgi

ADDITIONAL TESTS

EPM

Equine protozoal myeloencephalitis · *Sarcocystis neurona* (rarely *Neospora hughesi*)

Protozoon



A parasite of the brain and spinal cord found in the Americas, spread by opossums. Elsewhere, including Europe, it affects only horses that have lived there.

Type

Lit. 1 2

Single-celled parasite attacking the brain and spinal cord

Incubation ?1

Lit. 2

Not established for natural infection in horses

Transmission

Lit. 1 2

Horses swallow parasite sporocysts (egg-like stages) in feed or water soiled by opossum droppings. Horses are dead-end hosts: EPM does not spread between horses.

Risk for people ?2

Lit. 3

○ ○ ○ No known risk

Not known to infect people. Human *Sarcocystis* infections come from other species, e.g. in raw beef or pork, not from horses.

Key symptoms in horses

Lit. 1 2

- Stumbling or weakness, often worse on one side
- Wasting of muscles in patches
- Head tilt and other head-nerve problems
- Gradual onset; signs vary widely
- Rarely seizures

Test method & sample (from the form)

METHOD

SAMPLE

FORM CODE

Western blot* (antibodies)

serum

#2800

Prevention

Lit. 1 2

- No licensed vaccine; former US vaccine withdrawn
- Store feed in closed containers; keep wildlife out
- Keep feed and water free of wildlife droppings

Good to know

Many American horses have antibodies, but few fall ill. Stress and young age raise the risk. With treatment about 60% improve; under a quarter recover fully.

?1 **Incubation:** No fetched source gives an incubation period for natural infection.

1 Lit. – Merck Veterinary Manual: Equine Protozoal Myeloencephalitis · merckvetmanual.com/.../equine-protozoal-myeloencephalitis

2 Lit. – ACVIM consensus: EPM – parasite biology, diagnosis, treatment, prevention (JVIM 2016) · pubmed.ncbi.nlm.nih.gov/26857902

?2 **Risk for people:** No source explicitly excludes human infection; *S. neurona* is not listed among human *Sarcocystis* species.

3 Lit. – Merck Veterinary Manual: Sarcocystosis in Animals · merckvetmanual.com/.../sarcocystosis-in-animals