|  |  |
| --- | --- |
| Logo AGES | |
| Swine influenza (swine flu) | |
|  |  |
| 12.07.2025 14:47 Uhr | |

**Swine
influenza
(swine
flu)**

Last
change:
26.08.2024

**Profile**

Swine
influenza
is
a
highly
contagious
respiratory
viral
infection
in
pigs
caused
by
influenza
A
viruses.
The
morbidity
rate,
i.e.
the
number
of
animals
that
contract
swine
influenza
in
a
given
period,
is
usually
high
in
pigs,
while
the
mortality
rate
is
low
and
the
symptoms
in
pigs
usually
subside
within
7-10
days.
Infections
can
lead
to
respiratory
symptoms
(such
as
coughing
and
pneumonia),
weight
loss
and
fever
and
indirectly
cause
fertility
problems
such
as
abortions
in
pregnant
sows.

There
are
four
main
influenza
A
virus
subtypes
circulating
in
pigs
worldwide:
A(H1N1),
A(H1N1)pdm09,
A(H1N2)
and
A(H3N2).
Infections
with
influenza
A
viruses
(SwIAV)
originally
from
pigs
also
occur
in
poultry
and
humans.
However,
this
transmission
between
different
species
occurs
only
rarely.

Pigs
are
also
susceptible
to
infection
with
avian
influenza
viruses,
which
originate
from
birds,
and
with
human
influenza
viruses.
If
these
different
influenza
viruses
meet
in
infected
pigs
(co-infection),
they
can
exchange
genetic
information
(reassortment).
This
can
result
in
swine
influenza
strains
with
new
characteristics.
Pigs
are
therefore
regarded
as
so-called
"mixing
vessels"
for
influenza
viruses.
In
2009,
a
variant
of
the
swine
influenza
virus
emerged
in
humans,
which
was
transmitted
from
person
to
person,
but
also
between
humans
and
pigs.
Due
to
its
pandemic
spread,
this
variant
was
named
(A(H1N1)pdm09
or
pandemic
("swine")
influenza
A(H1N1)).
It
carried
components
of
swine
influenza
viruses,
but
also
of
avian
and
human
influenza
viruses.

**Occurrence**

The
disease
is
currently
widespread
worldwide
and
affects
millions
of
pigs
every
year

**Host
animals**

Pigs
are
the
natural
reservoir
of
the
pathogen.
Infections
with
swine
influenza
A
viruses
(SwIAV)
also
occur
in
wild
boar,
poultry
and
humans.

**Route
of
infection**

The
virus
is
excreted
via
secretions
and
spread
by
droplets
and
aerosols.
The
main
route
of
transmission
of
the
virus
is
indirectly
via
the
air
or
through
direct
contact.

**Incubation
period**

The
first
symptoms
of
the
disease
usually
appear
24
hours
after
infection.
In
the
majority
of
cases,
viruses
are
no
longer
excreted
7-10
days
after
infection.

**Symptomatology**

The
course
of
the
disease
depends
on
the
duration
of
virus
circulation
on
the
farm.
The
symptoms
can
also
be
exacerbated
by
co-infection
with
other
viruses
and/or
bacteria.

In
the
case
of
a
new
infection:

Up
to
100
%
of
pigs
fall
ill

* Mortality
  lower
  than
  5
  %
  (without
  co-infections)
* High
  fever
* Dry
  cough
* Reduced
  feed
  intake
* Nasal
  discharge
* Conjunctivitis

In
the
case
of
continuous
infection
between
the
different
(age)
groups
(endemic
infection),
the
disease
often
progresses
subclinically
without
any
recognisable
symptoms.

In
sows,
fertility
problems
(abortions)
can
also
occur
due
to
fever
and
circulatory
disorders.

**Prevention**

Vaccination
is
an
important
preventive
measure
against
SIV
outbreaks
in
pig
farms.
Several
commercial
vaccines
against
SIV
are
authorised
in
Europe.
All
are
based
on
inactivated
whole
virus
preparations
that
are
administered
by
intramuscular
injection
and
require
at
least
one
booster
vaccination.
These
vaccines
have
the
major
disadvantage
that
they
do
not
consistently
provide
robust
cross-immunity
against
new
virus
subtypes.
The
veterinarians
in
charge
and
all
persons
working
with
pigs
should
be
vaccinated
against
seasonal
human
influenza
to
minimise
the
risk
of
infection
and
the
emergence
of
new
virus
variants.

**Situation
in
Austria**

There
are
no
current
prevalence
data
from
Austria.

The
detection
of
influenza
A
viruses
in
pigs
is
not
notifiable
in
Austria.
There
is
hardly
any
global
structural
surveillance.
Due
to
the
risk
of
the
emergence
of
new
influenza
viruses
with
pandemic
potential,
swine
influenza
is
one
of
the
10
most
important
zoonoses
according
to
[EFSA](https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2023.7853)
and[ECDC](https://www.ecdc.europa.eu/en/swine-influenza/factsheet)
,
for
which
improved
surveillance
is
indicated.

As
part
of
the
EU
project
["United4Surveillance"](https://united4surveillance.eu/),
AGES
is
conducting
pilot
studies
(2023-2025)
on
different
surveillance
approaches
to
monitor
the
spread
of
swine
influenza
viruses.

In
addition,
some
European
initiatives
aim
to
improve
public
awareness
of
zoonotic
influenza
(transmission
of
influenza
viruses
between
animals
and
humans)
and
to
establish
European
networks
for
the
surveillance
of
swine
influenza.
In
2022,
a
European
[Swine
Influenza
Network](https://swineflu.eu/)
(ESFLU)
was
established
with
the
aim
of
setting
up
an
interdisciplinary
European
network
for
the
swine
influenza
A
virus.
The
aim
is
to
improve
the
exchange
of
information,
awareness-raising
and
global
surveillance
in
preparation
for
a
pandemic.

**Specialist
information**

Various
swine
influenza
viruses
are
circulating
in
Europe:
A(H1N1),
A(H1N1)pdm09,
A(H1N2)
and
A(H3N2).

**A(H1N1)**:
The
classical
influenza
A(H1N1)
virus
-
a
direct
descendant
of
the
human
influenza
pandemic
virus
of
1918
that
is
still
present
in
pigs
in
America
and
Asia
-
has
not
been
detected
in
European
pigs
for
over
15
years.
The
avian
type
H1N1av
(wild
ducks)
is
often
endemic
in
pig
populations.
The
2009
pandemic
H1N1
virus
(A(H1N1)pdm09)
and
corresponding
genetically
modified
mixed
types
have
also
been
frequently
detected
and
currently
appear
to
persist
in
some
pig
populations.

**A(H1N2)**:
Several
H1N2
viruses
circulate
temporarily
or
continuously
in
Austria.

**A(H3N2)**:
The
H3N2
viruses
were
originally
introduced
into
the
pig
population
by
humans.
Since
then,
however,
the
H3N2
viruses
circulating
in
pigs
have
changed.
The
H3N2
viruses
now
circulating
in
pigs
are
very
different
from
the
seasonal
H3N2
viruses
circulating
in
humans.

**Further
information**

[Zeller
et
al,
(2018).
ISU
FLUture.
BMC
bioinformatics,
19(1),
397](https://bmcbioinformatics.biomedcentral.com/articles/10.1186/s12859-018-2408-7)

[Chapter
3.9.7
-
Influenza
A
viruses
of
swine,
WOAH
Terrestrial
Manual
2023](https://www.woah.org/fileadmin/Home/fr/Health_standards/tahm/3.09.07_INF_A_SWINE.pdf)
(PDF)

**Diagnostics**

Diagnostic
methods
and
protocols
for
the
detection
of
currently
occurring
swine
influenza
viruses
are
well
established
and
in
use
at
AGES.

**Real-time
RT-
PCR
and
sequencing**:
Direct
pathogen
detection
is
only
possible
in
the
acute
phase
(up
to
max.
5
days
p.
i.).
Suitable
sample
materials
are
nasal
or
tonsil
swabs
(dry
or
with
special
transport
medium)
or
lung
tissue.
The
pathogen
is
routinely
detected
directly
using
PCR.
Selected
samples
are
subtyped
using
specific
H1/H3
and
N1/N2
PCR
methods,
and
whole
genome
sequencing
(WGS)
can
also
be
carried
out.

**ELISA**:
The
enzyme-linked
immunosorbent
assay
is
an
antibody-based
detection
method.
Antibodies
present
in
the
serum
bind
to
a
specific
antigen
and
are
measured
qualitatively
or
semi-quantitatively
using
an
enzymatic
colour
reaction.
These
methods
can
be
used
to
detect
vaccine
and
infection
antibodies.

**Contact
us**

**Institute
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Veterinary
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