Diseases

- Aspergillosis
- Bacterial Secondary Infections
- Candida Infection
- Canker (Trichomonas Gallinae)
- Coccidiosis
- E. Coli (Collibacillosis)
- Gout
- Haemophilus Catarrh
- Hexamitiasis
- Infectious Catarrh
- Mycoplasmosis Catarrh
- One Eye Colds
- Ornithosis
- Paratyphoid (Salmonellosis)
- Pigeon Pox
- PMV-1 (Paramyxovirus)
- Pneumomycosis
- Poisoning
- Pigeon Malaria
- Respiratory infections
- Salivary Stones
- Salmonellosis
- Sour Crop
- Staphylococcus Infection
- Streptococcus Infection
- Trichomoniasis
- Tuberculosis
- Young Bird Sickness

Parasites

- Worms
  - Roundworm
  - Tapeworm
  - Hairworm (threadworms)
  - Gapeworms
- Ectoparasites
- Long Louse
- Small Louse
Feather Quill Mite ............................................................................................................. 25
Itch Mite ............................................................................................................................. 25
Red Mite ............................................................................................................................. 25

**Vitamins** .......................................................................................................................... 26
Vitamin A .............................................................................................................................. 26
Vitamin B1 .......................................................................................................................... 26
Vitamin B2 .......................................................................................................................... 26
Vitamin B6 & B10 ................................................................................................................ 26
  B10 (Folic Acid) .................................................................................................................. 27
Vitamin B12 .......................................................................................................................... 27
Vitamin C .............................................................................................................................. 27
Vitamin D .............................................................................................................................. 27
Vitamin E .............................................................................................................................. 28
Vitamin K ................................................................................................................................ 28

**Symptoms** ............................................................................................................................ 29
Air Sacs, Inflammation ........................................................................................................... 29
Balance Disorders .................................................................................................................. 29
Breast, Blueish ...................................................................................................................... 29
Breath, Short of ...................................................................................................................... 29
Breathing Rapid .................................................................................................................... 29
Canker ..................................................................................................................................... 29
Condition, General, Impaired .............................................................................................. 29
Conjunctivitis, Bilateral ......................................................................................................... 30
Conjunctivitis, Unilateral ....................................................................................................... 30
Consumption, Complete ....................................................................................................... 30
Crop, Mucosa, Swollen ......................................................................................................... 30
Crop, Puffy ............................................................................................................................ 30
Crop, Sour, Water Filled ....................................................................................................... 30
Debility ................................................................................................................................... 30
Diarrhea, Bloody ................................................................................................................... 31
Diarrhea, Greenish ................................................................................................................. 31
Diarrhea, Malodorous ............................................................................................................ 31
Diarrhea, Muco-aqueous .................................................................................................... 31
Diarrhea, Rice Water-like .................................................................................................... 31
Disorder, Systemic ................................................................................................................. 31
Down, Moulting, Cessation ................................................................................................... 31
Droppings, Formed but in puddles ..................................................................................... 31
Droppings, Mucoid in yellow-green puddles ..................................................................... 32
Droppings, Soft ................................................................. 32
Droppings, Sourish-Smelling ........................................ 32
Droppings, Wet ............................................................... 32
Eggs, Poor Hatchability .................................................. 32
Eggs, Thin Shells ............................................................ 32
Elbow Joint, Thickening .................................................. 32
Emaciation, acute .......................................................... 32
Enteritis, acute .............................................................. 33
Eye Discharge, Watery .................................................... 33
Eyelid, Swollen .............................................................. 33
Eyelids, Severe Swelling .................................................. 33
Feather Formation, Inadequate ..................................... 33
Feather Pulling ............................................................... 33
Feathers, Loss of ........................................................... 33
Feed Intake, Increased ................................................. 33
Feed Intake, Reduced .................................................... 34
Fly, Reluctance ............................................................. 34
Growth Retardation, Nestlings ..................................... 34
Joint, Swollen ............................................................... 34
Lacrimal Sac, Bulging ...................................................... 34
Laryngeal Deposits, Whitish-Yellow .............................. 34
Leg Joint, Thickening .................................................... 34
Leg, Paralysis ................................................................. 35
Listlessness .................................................................. 35
Mortality, Nestlings ....................................................... 35
Movements, Twisting ..................................................... 35
Mucus (beak), stringy .................................................... 35
Nasal discharge, aqueouse .......................................... 35
Nasal discharge, mucopurulent .................................... 35
Nasal discharge, yellowish brown ............................... 35
Neck, torsion of the ....................................................... 36
Nervousness ................................................................ 36
Newcastle Disease .......................................................... 36
Nictitating membrane, inflammation .......................... 36
Nose scratching ............................................................. 36
Nose wattle, grey .......................................................... 36
Overturning ................................................................. 36
Paratyphus .................................................................... 36
Performance, rapid reduction ....................................... 37
Performance, reduced .................................................. 37
Plumage, puffed-up................................................................................................. 37
Plumage, rough...................................................................................................... 37
Proliferations, scabby .......................................................................................... 37
Rattling................................................................................................................... 37
Respiration, difficulty in ...................................................................................... 37
Respiratory murmurs ............................................................................................ 37
Restlessness ........................................................................................................... 38
Sneezing.................................................................................................................. 38
Throat mucosa, reddening .................................................................................... 38
Throat mucosa, white to grey dots....................................................................... 38
Throat mucosa, yellow dots .................................................................................. 38
Throat, swelling of the mucosa............................................................................ 38
Timidity .................................................................................................................. 38
Tongue, greenish furring ...................................................................................... 38
Umbilical abscess, squabs .................................................................................... 39
Umbilical infection, squabs .................................................................................. 39
Vitality, reduced .................................................................................................... 39
Vomiting .................................................................................................................. 39
Walking backwards ............................................................................................... 39
Water intake, excessive ......................................................................................... 39
Water intake, increased.......................................................................................... 39
Water intake, reduced ........................................................................................... 39
Weakness, nestlings................................................................................................. 40
Weight, loss of ...................................................................................................... 40
White dots (throat)............................................................................................... 40
Wind pipe (trachea), inflammation of .................................................................. 40
Wing paralysis ....................................................................................................... 40
Yellow dots (throat).............................................................................................. 40
Aspergillosis
Aspergillosis is a fungus disease of birds, animals and humans. It is usually characterized in the pigeon as a chronic infection of the lungs and air sacs. Another name for this disease is pneumomycosis.

Pathogen/Cause:
Aspergillus fungi. They grow as multicellular, fluffy mold colonies, free-living in the soil, on vegetation or parasitic living in or on birds, animals, and humans.

Symptoms
Respiratory form: difficulty in breathing; greenish deposits on tongue and palate.
Skin form: skin scaling off with breaking of feathers.

Recognition
Cadaver examination: Fungal lawn in lungs.
Microscopic examination of deposits and skin scrapings.

Treatment:
Elimination of source of infection (e.g. mouldy feed), separation of affected birds. No treatment is recommended for Aspergillus respiratory infections in pigeons.
Skin infections can be successfully treated e.g. with copper sulfate (1:2000 dilution) or a solution of mercuric chloride (1:500 dilution).

Prevention:
Dry, well ventilated loft, good quality feed, administration of vitamins.

Bacterial Secondary Infections
Pathogens/Cause:
Bacteria, like streptococci (Streptococcus faecalis, Streptococcus gallinarum), staphylococci (Staphylococcus aureus). Streptococcosis is an uncommon acute or chronic bacterial disease that can occur in pigeons. Contaminated feed or water and infected birds transmit the streptococci. The bacteria enter through body openings and breaks in the skin. Generally only a few birds in a flock become infected at any one time. Staphylococcus organisms occur worldwide. They commonly reside on the skin and mucous membranes without causing infection. The potential for bacterial infection largely resides in the degree of resistance that the host is capable of mobilizing.

Symptoms
Salmonellosis-like symptoms. Diarrhoea, listlessness, paralysis, emaciation particularly in young pigeons. Abscess-like nodules in all organs, especially the intestine.

Recognition
Bacterial examination of droppings and tissue.

Prevention:
Hygienic loft conditions. Observe general rules of prevention (e.g. disinfection by using desinfectans).

Candida Infection
Thrush is a common acute or chronic fungus infection especially of the digestive tract. Other names for this disease are mycosis, soor, muguet, sour crop.

Pathogen/Cause:
Candida albicans, a yeastlike organism.

Symptoms
Poor growth of young pigeons, accumulation in the crop; whitish fungal growths in the throat.

Recognition
Microscopic examination of the fungal growths in the throat.
**Treatment:**
Separation of affected birds. Administration of Nystatin (veterinary) and high levels of Vitamin A.

**Prevention:**
Improving the environment.

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**Canker (Trichomonas Gallinae)**
Canker is a protozoan disease that is the greatest killer and cripper of the pigeon diseases. It is found in domestic and wild pigeons and doves.

**Cause**
It is spread by contacts between pigeons, such as billing, mating and feeding young. The organism will live for some time in water or in damp locations.

**Symptoms**
A swelling in throat and cheesy growth in the mouth are certain signs of canker.

**Cure**
All forms of canker can be treated if found early. Many different types of medicine are available for curing canker. Ridzol Soluble Powder For flock treatment, Ronidazole Tablets for individual treatment.

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**Coccidiosis**
Coccidiosis, a protozoan disease, is an infection of the intestines.

**Cause**
Most prevalent under conditions of poor nutrition, poor sanitation, or after stresses. Can be spread by a pigeon eating droppings. make sure that feed is free from droppings.

**Symptoms,**
The principal cause of going light. In adult birds, an acute infection is shown clinically by a pale pallor of the inside of the mouth. The appetite diminishes
slowly, while thirst increases. In early stages, the droppings are loose and take on a greenish color.

**Cure**
Steps should be taken to see that all vessels containing food, grit, and water are kept thoroughly covered and their contents completely protected from droppings and contaminating feet. With the stopping of the further eating of the oocysts, the life cycle is broken and new generations prevented. Nidrakok (Rohnfried) contains Amprolium suitable as drinking water treatment for the disease.

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**E. Coli (Collibacillosis)**
A gram-negative, rod shaped bacterium normally found in the intestines of poultry and most other animals.

**Cause**
Infection occurs when large numbers of E. Coli gain access to the bloodstream from respiratory tract or intestine.

**Symptoms**
Signs are nonspecific and vary with age. Chicks may die in the nest. Adults birds lose weight and their droppings become very loose slimy.

**Cure**
Keeping clean loft and rodent population under control. Treat with general Antibiotics such as Aureomycin.

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**Gout**

**Possible causes:**
Water shortage, kidney damage, nutritional deficiency

**Symptoms**
Nodular painful swelling of the joints. Liver and peritoneum, pericardium, air sacs appear as if dusted with lime (uric acid crystals). Kidneys swollen, interspersed with uric acid deposits.
**Recognition**
Microscopic examination of the deposits (crystals).

**Prevention:**
Ensure adequate vitamin intake and exercise. Feed birds as required by performance.

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**Haemophilus Catarrh**

**Pathogen/Cause:**
Haemophilus bacteria (p.e. Haemophilus gallinarum).
Infected although apparently healthy poultry serve to spread the organism. Haemophilus is transmitted via the drinking water, which is contaminated with nasal discharge.

**Symptoms**
Severe bilateral conjunctivitis with mucopurulent discharge. Extreme swelling of the eyelids ("owls head"). Catarrh symptoms.

**Recognition**
Bacteriological examination of eye or nasal discharge.

**Prevention:**
Elimination of possible factors that reduce the bird's resistance to infection. Such factors may be: overcrowding in the loft, lack of cleanliness, latent infections (e.g. ectoparasites, worm infestations, coccidial infection), excessive stress in breeding, deficient feed, poor water supply, stress during the racing season.

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**Hexamitiasis**
Hexamitiasis is an intestinal disease of pigeons that is associated with mucous, or even bloody, faeces.

**Pathogen/Cause**
The flagellate, Hexamita columbae occurs in pigeon flocks mainly in the
summer and autumn months. It primarily colonises the rectum. Especially susceptible are newly weaned squabs, whose resistance is still low. Infected adult pigeons do not normally show visible signs of the disease, but can excrete the pathogen in large quantities in their droppings (chronic carriers). The incubation period is 4-5 days.

**Symptoms**

Acute catarrhal (or even bloody) enteritis with liquid, rice water-like or mucoid, malodorous diarrhoea.

Affected pigeons refuse feed and drink more water, resulting in emaciation and debility. Young birds in particular sometimes succumb so severely that the entire intestinal tract is involved and the soft or aqueous faeces is mixed with blood.

**Recognition**

Hexamitae are demonstrated via microscopic examination in body-temperature smears from the intestinal mucosa of a recently killed, acutely affected pigeon. With extremely severe infestation, it is also possible to demonstrate the parasites in a cloacal swab from a live bird. They can be recognised from their characteristically rapid movements in a straight line - in contrast to trichomonads, which exhibit slow, circular movements around their own axis.

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**Infectious Catarrh**

Diseases of the respiratory tract are very often mixed infections. Outbreaks of the disease result from the combined effects of pathogens and factors within the loft environment that reduce the birds' resistance to infection.

**Pathogens**

The door to infection is opened by mycoplasma and viruses, in addition to fungi and trichomonads. These lower the pigeons' resistance and allow pathogenic bacteria - Pasteurella, cocci and coli bacteria - to colonise and multiply. It is these secondary pathogens that engender the actual clinical picture of visible and audible catarrh (wheezing).

Catarrh is not always caused by pathogens. Very often, inadequate ventilation and waste-air extraction, drafts, a deficient supply of oxygen and high concentrations of noxious gases and dust in the loft reduce the pigeons' resistance, making them extremely susceptible to infection.
Symptoms
Initially the pigeon fancier notices sneezing and an aqueous nasal discharge, which in the acute form of the disease becomes mucopurulent and yellowish brown in colour. This is accompanied by the first signs that the birds' general condition is impaired, namely reduced feed and water intake, cessation of down moulting and a reluctance to fly. The wattle and bridge of the nose turn grey and there is scratching of the head and nose. When the beak is opened, stringy mucus can be seen stretching from the retrolingual region to the palate. Additional clinical signs are a reddening and swelling of the pharyngeal mucosa.
In the advanced stage of the disease, whitish-yellow deposits are formed in the laryngeal region. The inflammatory processes extend to the windpipe and the lower respiratory tract (air sacs).

Recognition
The diagnosis "infectious catarrh" can usually be established simply from the behaviour of affected pigeons, the inflammatory changes in the head region and respiratory tract and the characteristic sounds of respiration (wheezing). Veterinary examination and bacteriological demonstration of the pathogen are recommended on first suspicion of disease.

Mycoplasmosis Catarrh
The chronical form of catarrh in pigeons often is called "Mycoplasmosis". It is caused by a multiple infection with pathogens: bacteria (e.g. Cocci), viruses (e.g. Herpes) and pathogens which belong to the group of mycoplasma organisms. It is assumed that mycoplasma causes severe conditions only in the presence of other infections.

Pathogen/Cause
Outside the animal body, mycoplasma organisms are viable only for a short period (approx. 17 days at 20°C, but only 20 minutes at 50°C). Low temperatures favour their survival. Mycoplasma organisms are killed by almost all commonly used disinfectants, e.g. desinfectans. Transmission takes place through the faeces, the drinking-water, feed, equipment and by droplet infection from pigeon to pigeon.

Symptoms
Mucopurolent discharge from the nose, reduced flying performance,
unwillingness to fly, flying awkwardly, throat inflammation, rattling and wheezing sound of respiration particularly noticeable by night. Air sac inflammation.

**Recognition**
Cadaver examination: air sac inflammation
Serological blood test

**Prevention:**
Elimination of possible factors that reduce the bird's resistance to infection. Such factors may be: overcrowding in the loft, lack of cleanliness, latent infections (e.g. ectoparasites, worm infestations, coccidial infection), excessive stress in breeding, deficient feed, poor water supply, stress during the racing season.

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**One Eye Colds**
This not a true cold it should be classed as an eye infection.

**Cause**
infection of the eye caused by injury, or foreran matter in the eye causing infection of the eye.

**Symptoms**
First symptom is watery eye. This discharge later thickens, the feathers around the eye may become matted together with a yellow fluid.

**Cure**
Terramycin Ophthalmic Ointment applied daily to the eye will usually clear up the infection with a few days.

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**Ornithosis**
Ornithosis is an infectious disease that affects many bird species worldwide. It can also be transmitted to humans and other mammals. In Germany, ornithosis is a notifiable disease in pigeons.
**Pathogen**
Chlamydia psittaci. Chlamydia are small, non-motile micro-organisms that invade cells parasitically. Infection occurs via inhalation of stirred-up dust containing the pathogen, uptake of faecally contaminated feed or water, or else billing or feeding of squabs.

**Symptoms**
Ornithosis occurs in 2 forms:
The acute form can be recognised in young pigeons from: wheezing noises, uni- or bilateral conjunctivitis and muco-aqueous enteritis with diarrhoea. The chronic form is more often found in adult birds, which, however, show few or no signs of the disease. Pigeons that have recovered are a dangerous source of infection for young pigeons and for humans due to their latent shedding of the pathogen.

**Recognition**
The disease can be demonstrated in dead pigeons by microscopic examination of a smear or impression ("klatsch") preparation of spleen, liver, conjunctiva or air sac that has first been stained using the method according to Stamp. In live birds, the pathogen is demonstrated in faeces, via a sink dab from the cloaca, or alternatively by serological identification of specific antibodies.

**Treatment**
Flocks are treated with chlortetracyclin+, which has been successfully used for many years to control ornithosis. In order to maintain effective blood levels, administration of chlortetracyclin+ must not be interrupted during the 30-day treatment period.

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**Paratyphoid (Salmonellosis)**
A deadly killer of pigeons is also one of the most difficult diseases to recognize when present in the flock.

**Cause**
The disease can be spread by a number of different means, but the highest form of contamination is water and droppings. Wild birds, and rodents are all carriers of Paratyphoid.
**Symptoms**
Symptoms in adult pigeons may vary. Swollen joints, fluid filled lumps, swelling in the legs and limping are all signs of the disease.

**Cure**
Once you are sure that a bird has contracted Paratyphoid, kill or isolate it. Then treat your entire flock with any of the following medications: Enroflaxyn Tablets, Tetracycline Amoxycillinum Tablets. Use of salmonella vaccine proven to be effective prevention.

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**Pigeon Pox**
Pigeon pox is caused by a virus. found in all parts of the United States.

**Cause**
Most common source of infection is through bloodsucking parasites, such as mosquito, mites.

**Symptoms**
Small blisters appear around eyes or on the face and body. These enlarge, latter become festered, then scab over.

**Cure**
Once a pigeon has had pox and recovered it is immune for life. The best preventive is vaccination. Pigeon pox vaccine is inexpensive and easy to administer.

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**PMV-1(Paramyxovirus)**
extremely contagious viral infection unique to pigeons.

**Cause**
Disease can spread from Contaminated feed, water, Direct or indirect contact.

**Symptoms**
Symptoms include extreme watery droppings, loss of appetite, loss of coordination, in latter stages twisted neck and paralysis of the wings. High loss of birds.

**Cure**
No cure just prevention with vaccination. Maine Biological oil adjuvant PMV-1 vaccine.

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**Pneumomycosis.**
See: Aspergillosis

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**Poisoning**

**Possible causes:**
Insecticides, plant protection agents, artificial fertilisers etc.

**Symptoms**
Sudden onset of paralysis, intractable diarrhoea, loss of appetite, rapid loss of weight. Violent intestinal inflammation. Swelling of liver, spleen and kidneys. Haemorrhages in muscles and organs.

**Recognition**
Case history. Cadaver examination. Demonstration of poison is possible in some cases.

**Treatment:**
Separate affected pigeons; irrigate crop; give animal charcoal,

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**Pigeon Malaria**
Pigeon Malaria is caused by protozoan that targets the pigeons red blood cells.

**Cause**
Pigeons are most commonly infected by the pigeon fly.
Symptoms
Symptoms hard to determine, birds may show signs of reduced performance and their plumage may become dull.

Cure
Curing Pigeon Malaria is very difficult. Prevention is the best cure. Control Pigeon fly in the loft and on the birds with dips and powdered insecticides.

Respiratory infections

Cause
Upper reportorial bacterial infection. Poor ventilation control dampness and over crowding.

Symptoms
Watery eyes mucous in the throat and rattling lungs. Birds may gasp for air. Cure good ventilation controlling dampness and over crowding. Aureomycin concentrate soluble

Salivary Stones
Occasionally, when examining pigeons small hard white spots are discovered in the area of the crevice in the roof of the mouth and particularly in the rear part.
By almost 1% of pigeons these fine millet sized nodules are found singly and sometimes 10 or more. It was always assumed that they were small areas of trichomoniasis (canker) but by today's understanding that is not the case.

Cause:
It is commonly known that there are numerous small salivary glands in the mucus membrane of the pigeon's mouth which secrete saliva so that the feed is slightly moistened to allow it to be more easily swallowed. To date it is not known what causes these little white spots which are hard and are known as salivary stones. By examining tissues and the chemicals of these spots or stones it has been proven in Holland that they consist of a mixture of mucus
and fine small grains of parts of the cells from the salivary glands. These in turn are rolled into small hard balls and block up the openings of the ducts of the salivary glands. At first they appear to be grey but later they become white in colour.

**Treatment:**
Experience have shown that no treatment has been successful. Surgical removal only leads to bleeding and damage to the mucus membrane. However, the health and performance of the pigeon is not affected.

**Prevention:**
Further research has shown that careful and regular treatment with chevicol®+ together with good hygienic conditions helps to prevent the re-occurrence of these spots. In addition, at the first appearance of any colds which increase the heavy accumulation of mucus and inflammatory changes in the pharynx and along the throat, treatment against catarrh should be continuous until cleared of all symptoms.

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**Salmonellosis**
Salmonellosis has one of the highest mortality rates of any infectious bacterial disease of pigeons.

**Pathogen/Cause**
Salmonella typhimurium var. copenhagen, designated as the "pigeon type" salmonella strain. Given the right conditions, the bacterium can remain infective in the environment for 1 year or more.

Salmonellae are spread by:
- inhalation of dust containing the pathogen
- contaminated feed (insects, mice, rats)
- dirty feed troughs and water bowls
- mating
- transmission from the hen to the egg
- feeding the nestlings with infected crop milk and billing
• chronic carriers: pigeons that appear healthy after surviving salmonella infection, but shed the pathogen at irregular intervals and thus pose a risk to the current flock and their progeny.

**Clinical signs:**
• Acute form (mainly affects young pigeons):
  Enteritis with pulpy, mucoid, greenish droppings; once organs (liver, kidneys, spleen) have become infected, there is growth retardation, emaciation and (in isolated cases) death. Embryos infected with salmonellae frequently die in ovo or during the first few days of life.

• Chronic form (mainly affects adult pigeons):
  Inflammation causes a thickening of the joints, especially the elbow joint, wing or leg lameness, disorders of balance and torsion of the neck. Recognition of the disease: Bacteriological examination of faecal and/or organ samples. An antibiogram is performed to determine which medication is suitable for treatment purposes.

**Treatment:**
Upon appearance of the symptoms described, treatment with chloramphenicol-N should be started immediately. In some cases it is necessary to change the treatment (e.g. to ampicillin-t) when the results of the bacteriological examination and antibiogram become available. Treat the entire flock rather than individual birds. Cull severely affected pigeons before beginning the treatment, since it is unlikely that they can be cured. To check the outcome of the treatment, carry out bacteriological examinations on faecal samples. These should take place at least 14 days after termination of treatment, and then repeated twice at 3-week intervals.

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**Sour Crop**

**Cause**
Bird's eating food that is wet, moldy, sour or contaminated. Dirty drinking water is another source of trouble.

**Symptoms**
Pigeon will drink large amounts of water because of nausea. Vomiting of sour water and grain.

**Cure**
Sour crop is a easily treated. Hold the bird with the head pointing down and push gently from the bottom of the crop upwards, forcing the stale water out of the crop. Fill the crop with baking soda or charcoal. Hold feeding for 24 hrs.

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**Staphylococcus Infection**
See: [Bacterial Secondary Infections](#)

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**Streptococcus Infection**
See: [Bacterial Secondary Infections](#)

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**Trichomoniasis**
See: [Canker (Trichomonas Gallinae)](#)

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**Tuberculosis**
Tuberculosis in pigeons is an old sporadic, widespread, contagious bacterial disease.

**Pathogen/Cause:**
Mycobacterium avium. In the Mycobacterium avium complex 20 serotypes are listed. Birds vary in their resistance to the different serotypes. Serotypes 1 and 2 predominate. In pigeons the infection may be ingested in dropping-contaminated soil, food, grit, or water.

**Symptoms**
Insidious course of the disease over a period of weeks. Increasingly impaired general condition of some pigeons to the point of complete emaciation. Greyish-yellow caseous nodes, particularly in liver and spleen.
Similar conditions with the organ form of trichomoniasis or salmonellosis, but there are almost always additional signs of these diseases which enable a definite diagnosis to be established.

**Recognition**
In the living bird: tuberculin test
Cadaver: bacterial examination of the organs

**Treatment:**
Not advisable, since a cure is not possible.

**Prevention:**
If disease suspected, tuberculin-test with all birds. Kill affected pigeons.

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**Young Bird Sickness**
Young bird sickness has spread rapidly around the world in recent years, causing severe losses among young birds.

**Pathogen/Cause:**
This is a mixed infection, involving viruses and bacteria (especially E.coli and cocci, but also protozoa). The pathogens are transmitted by air, dust and contact between birds, as well as via communal drinking water and feed. Outbreaks of the disease are promoted by stress factors such as weaning, the introduction of strange birds into a loft, vaccination, heat (accelerated bacterial growth, water shortage), training of juveniles (basketing) and young pigeon flights.

**Symptoms**
The disease can take two forms:

Sudden death not preceded by any perceptible signs of illness:
A typical scenario sees young pigeons released from the loft for their daily training (on a hot summer's day, perhaps), whereupon they fly around for an hour and then return to the loft. They land on the roof or on the alighting ledge, do not respond to the breeder's attempts to entice them into the loft, and die within the space of a few hours.

Death preceded by visible signs of illness:
During the period between the onset of symptoms and death (lasting from 3 days to 1 week), the following symptoms are observed: lack of activity, puffed-up plumage, refusal of feed, swelling of the crop, weight loss, greenish-yellow faeces in puddles, vomiting.

**Recognition**
Owing to the numerous pathogens involved in this disease, it is only possible to make a tentative diagnosis.

**Treatment:**
There is no vaccine against young pigeon disease that could be used to prevent infection. However, sick pigeons can be treated with adenosan. And timely use of adenosan may also prevent an outbreak of the disease in birds suspected of infection.
Parasites

Worms
Common Types Roundworms, Tapeworms, Hairworms, Gapeworms.

Cause
Worm eggs are passed in droppings and by birds eating Slugs, Earthworms and pill bugs can get worms.

Symptoms

Roundworm
Most common found in pigeons. Worm lives in the intestine and feeds on digested food. Pigeons may become sluggish.

Tapeworm
Lives in the Small intestine. Pigeon may become sluggish. Insects are a common carrier.

Hairworm (threadworms)
anther common pigeon parasite. Heavily infested pigeons have diarrhea and sluggish, loose interest in feeding and drinking.

Gapeworms
Pigeons eating earthworms is one way a pigeon can get gapeworms. Gape worms can cause breathing problems.
Cure Keeping a clean loft and a preventive program of deworming at least every six months.

Ectoparasites
Ectoparasites are widespread in pigeon flocks. They damage the pigeon's organism in various ways.

Pathogens/Cause:
Feather lice, scaly-leg mites and body mange mites live permanently on infested pigeons, leaving them only to seek new hosts. Pigeon ticks, bird
ticks and red bird mites attack pigeons only periodically at night to suck blood. Otherwise, they conceal themselves in cracks in the loft. They can transmit pathogens.

**Recognition of the disease:**
Feather lice are visible in the pigeon's feathering with the naked eye. To assist detection, hold the pigeon against the light with its wings outspread. Infestation with body mange mites and scaly-leg mites can be confirmed by microscopic examination of a scraping from inflamed skin. Pigeon and bird ticks and red bird mites can be detected with the naked eye in cracks in the loft - ideally in the early hours of the morning, when the parasites leave the birds in search of a hiding place. They are also found under feeding troughs and nest bowls.

**Prevention**
Clean feed and water vessels with hot water. Regular bathing in clean water - at least once a week - protects pigeons against parasite infestation.

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**Long Louse**
Found on feathers of the whole body. They feed on feather scuff and cause little damage.

**Cure**
Dipping and dusting the loft and the birds with pesticides.

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**Small Louse**
Do not like light and are found on the underside of the body feathers. They eat feather scurf and cause prickling and burning irritation.

**Cure**
Dipping and dusting the loft and the birds with pesticides.
**Feather Quill Mite**
Found on the feathers shaft of the flight feathers. Causes much irritation. They appear as small black specks on the sides of the feathers shafts.

**Cure**
Dipping and dusting the loft and the birds with pesticides.

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**Itch Mite**
These mites cause feathers to fall out. They burrow through the feathers shaft into the follicle. If feathers have a swollen root, it is probably Itch Mite. The feather shaft swells and then the feather is shed. Small pale spots appear on the under side of the feathers on the breast, wings, back and neck.

**Cure**
Dipping and dusting the loft and the birds with pesticides.

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**Red Mite**
These mites will not be found on the pigeon when examine it. The Red Mite hides in small cracks and crannies during the day. They come out at night to feed on the blood of the pigeon. The mite causes irritation and damage through blood sucking.

**Cure**
Dipping and dusting the loft and the birds with pesticides.
Vitamins

**Vitamin A**
Promotes growth in young animals and helps with immunity from diseases. A deficiency will diminish fertility in pigeons and cause improper development of the pigeons eggs.

**Source**
Vitamin A is found in Green Peas, Yellow Maize, Carrots, Green Vegetables and Cod liver oil.

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**Vitamin B1**
Pigeons need B1 to convert carbohydrates into glycogen for storage in the liver. B1 helps with appetite and healthy nervous, digestive systems. Vitamin B1 also promotes build the skeleton.

**Source**
B1 is found in Wheat, Green Peas, Brown Rice.

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**Vitamin B2**
Essential for the metabolism of proteins, Carbohydrates, and fats. It is necessary for adequate functioning of the nervous system and the proper development of the embryo.

**Source**
B2 is found in the same foods as B1. Wheat, Green Peas, Brown Rice. Adequate amounts contained in most cereals and legumes.

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**Vitamin B6 & B10**
Vitamin B6 (Pyridoxine) regulates metabolism of the nerves and liver. It is also important for growth.
**B10 (Folic Acid)**
Prevents anemia. Pigeons deficient have leg cramps and tier quickly.

**Source**
B6 occur in all kinds of grains, yeast and bran.
B10 found in grains, yeast

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**Vitamin B12**
This vitamin is very important. This is the only vitamin that contains the metal cobalt. B12 is essential for formation of red blood cells. It is necessary for development of eggs and for growth in the first few weeks in a pigeon's life.

**Source**
B12 is of animal origin and is not found in normal pigeon food. However, it is contained in chick rearing food and in black dirt.

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**Vitamin C**
Vitamin C helps produce antibodies to fight pathogenic organisms. It works in relationship with vitamin A.

**Source**
Pigeons produce vitamin C in the liver. Vitamin C is not required in their food. Deficiency in the vitamin A will diminish the production of vitamin C.

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**Vitamin D**
Vitamin D assists in taking calcium and phosphorus from the intestines and into the blood stream, where they can be used for building the skeleton. Deficiency of D will promote a deficiency of these two minerals. Vitamin D helps balance the ratio of calcium and phosphorus.

**Source**
The pigeons body produces vitamin D from ultraviolet rays from sun light. Supplement diet with cod liver oil. Another source that contains D is barley. Supplements also can be used.

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**Vitamin E**
Called the fertility vitamin. Deficiency in this vitamin will render both sexes infertile.

**Source**
The germ of cereal grain and legumes are rich in vitamin E. green peas, wheat, maize.

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**Vitamin K**
Necessary for regulation of blood clotting. Deficiency will slow coagulation.

**Source**
adequate green in the diet will prevent any deficiency.
Symptoms

**Air Sacs, Inflammation**
Possible Causes: *Infectious Catarrh, Ornithosis, Mycoplasmosis*

**Balance Disorders**
Possible Causes: *Salmonellosis, Paramyxovirus infection, Streptococcus infection*

**Breast, Blueish**
Possible Cause: Oxygen deficit caused by a respiratory disease or by insufficient loft ventilation; feed mixture too high in protein.

**Breath, Short of**
Possible Cause: *Salmonellosis, Ornithosis, Mycoplasmosis*

**Breathing Rapid**
Possible Cause: *Aspergillosis*

**Canker**
Possible Cause: *Trichomoniasis*

**Condition, General, Impaired**
Possible Cause: *Infectious Catarrh, Ornithosis, Trichomoniasis, Young Bird Sickness*
**Conjunctivitis, Bilateral**
Possible Cause: *Infectious Catarrh, Ornithosis, Haemophilus Catarrh*

**Conjunctivitis, Unilateral**
Possible Cause: *Ornithosis*

**Consumption, Complete**
Possible Cause: *Worm Infestation, Tuberculosis*

**Crop, Mucosa, Swollen**
Possible Cause: *Young Bird Sickness, Trichomoniasis*

**Crop, Puffy**
Possible Cause: *Young Bird Sickness*

**Crop, Sour, Water Filled**
Possible Cause: *Young Bird Sickness, Candida Infection*

**Debility**
Possible Cause: *Coccidiosis, E.coli Infection, Hexamitiasis, Staphylococcus Infection*
**Diarrhea, Bloody**
Possible Cause: Hexamitiasis, Salmonellosis, E.coli Infection, Worm Infestation, Coccidiosis

**Diarrhea, Greenish**
Possible Cause: Salmonellosis

**Diarrhea, Malodorous**
Possible Cause: Hexamitiasis, Coccidiosis

**Diarrhea, Muco-aqueous**
Possible Cause: Infectious Catarrh, Ornithosis, Hexamitiasis, Salmonellosis, E.coli Infection, Coccidiosis

**Diarrhea, Rice Water-like**
Possible Cause: Hexamitiasis

**Disorder, Systemic**
Possible Cause: E.coli Infection, Streptococcus infection

**Down, Moulting, Cessation**
Possible Cause: Infectious Catarrh, Ornithosis, Trichomoniasis

**Droppings, Formed but in puddles**
Possible Cause: Paramyxovirus infection
**Droppings, Mucoid in yellow-green puddles**
Possible Cause: Young Bird Sickness

**Droppings, Soft**
Possible Cause: Coccidiosis, Worm Infestation, Stress

**Droppings, Sourish-Smelling**
Possible Cause: Trichomoniasis

**Droppings, Wet**
Possible Cause: Infectious Catarrh, Ornithosis, Stress, Trichomoniasis, Hexamitiasis, Coccidiosis

**Eggs, Poor Hatchability**
Possible Cause: Salmonellosis

**Eggs, Thin Shells**
Possible Cause: Calcium, Vitamin D or Phosphorous deficit

**Elbow Joint, Thickening**
Possible Cause: Salmonellosis

**Emaciation, acute**
Possible Cause: E.coli Infection, Young Bird Sickness, Coccidiosis
**Enteritis, acute**
Possible Cause: Hexamitiasis, Salmonellosis, E.coli Infection, Coccidiosis

**Eye Discharge, Watery**
Possible Cause: Salmonellosis, E.coli Infection, Mycoplasmosis

**Eyelid, Swollen**
Possible Cause: Infectious Catarrh, Trichomoniasis

**Eyelids, Severe Swelling**
Possible Cause: Haemophilus Catarrh

**Feather Formation, Inadequate**
Possible Cause: Ectoparasites, Nutritional Deficit

**Feather Pulling**
Possible Cause: Ectoparasites, Protein or Calcium Deficit, Candida Infection

**Feathers, Loss of**
Possible Cause: Ectoparasites (particularly body mange mites)

**Feed Intake, Increased**
Possible Cause: Worm Infestation
**Feed Intake, Reduced**  
Possible Cause: Trichomoniasis, Hexamitiasis, E.coli Infection, Coccidiosis

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**Fly, Reluctance**  
Possible Cause: Infectious Catarrh, Ornithosis, Trichomoniasis, Young Bird Sickness

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**Growth Retardation, Nestlings**  
Possible Cause: Trichomoniasis, Salmonellosis, Candida Infection

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**Joint, Swollen**  
Possible Cause: Salmonellosis, Gout

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**Lacrimal Sac, Bulging**  
Possible Cause: Haemophilus Catarrh

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**Laryngeal Deposits, Whitish-Yellow**  
Possible Cause: Infectious Catarrh, Ornithosis, Trichomoniasis

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**Leg Joint, Thickening**  
Possible Cause: Salmonellosis, Gout
**Leg, Paralysis**  
Possible Cause: [Salmonellosis, Paramyxovirus infection]

**Listlessness**  
Possible Cause: *Infectious Catarrh, Ornithosis, Trichomoniasis, Coccidiosis*

**Mortality, Nestlings**  
Possible Cause: *Streptococcus infection, Trichomoniasis*

**Movements, Twisting**  
Possible Cause: *Paramyxovirus infection, Salmonellosis*

**Mucus (beak), stringy**  
Possible Cause: *Infectious Catarrh, Ornithosis, Trichomoniasis*

**Nasal discharge, aqueous**  
Possible Cause: *Infectious Catarrh, Ornithosis, Trichomoniasis*

**Nasal discharge, mucopurulent**  
Possible Cause: *Infectious Catarrh, Ornithosis, Trichomoniasis, Mycoplasmosis*

**Nasal discharge, yellowish brown**  
Possible Cause: *Infectious Catarrh, Ornithosis, Trichomoniasis*
**Neck, torsion of the**
Possible Cause: *Streptococcus infection, Salmonellosis, Paramyxovirus infection*

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**Nervousness**
Possible Cause: *Ectoparasites*

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**Newcastle Disease**
Possible Cause: *Paramyxovirus infection*

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**Nictitating membrane, inflammation**
Possible Cause: *Haemophilus Catarrh*

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**Nose scratching**
Possible Cause: *Infectious Catarrh, Ornithosis, Trichomoniasis*

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**Nose wattle, grey**
Possible Cause: *Infectious Catarrh, Ornithosis, Trichomoniasis*

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**Overturning**
Possible Cause: *Paramyxovirus infection*

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**Paratyphus**
Possible Cause: *Salmonellosis*
**Performance, rapid reduction**
Possible Cause: Salmonellosis, Young Bird Sickness

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**Performance, reduced**
Possible Cause: Infectious Catarrh, Trichomoniasis, Coccidiosis

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**Plumage, puffed-up**
Possible Cause: Coccidiosis, Worm Infestation

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**Plumage, rough**
Possible Cause: Worm Infestation, Ectoparasites

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**Proliferations, scabby**
Possible Cause: Pigeon Pox

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**Rattling**
Possible Cause: Infectious Catarrh, Ornithosis, Trichomoniasis, Mycoplasmosis

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**Respiration, difficulty in**
Possible Cause: Infectious Catarrh, Ornithosis, Trichomoniasis, Herpesvirus Infection

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**Respiratory murmurs**
Possible Cause: Infectious Catarrh, Trichomoniasis, Mycoplasmosis
Restlessness
Possible Cause: Ectoparasites

Sneezing
Possible Cause: Infectious Catarrh, Ornithosis, Trichomoniasis

Throat mucosa, reddening
Possible Cause: Trichomoniasis, Young Bird Sickness, Infectious Catarrh

Throat mucosa, white to grey dots
Possible Cause: Salivary Stones

Throat mucosa, yellow dots
Possible Cause: Trichomoniasis

Throat, swelling of the mucosa
Possible Cause: Infectious Catarrh, Trichomoniasis

Timidity
Possible Cause: Paramyxovirus infection

Tongue, greenish furring
Possible Cause: Aspergillosis
Umbilical abscess, squabs
Possible Cause: Trichomoniasis

Umbilical infection, squabs
Possible Cause: Trichomoniasis

Vitality, reduced
Possible Cause: Trichomoniasis, Worm Infestation, Ectoparasites

Vomiting
Possible Cause: Worm Infestation, Young Bird Sickness, Candida Infection, Poisoning

Walking backwards
Possible Cause: Paramyxovirus infection

Water intake, excessive
Possible Cause: Paramyxovirus infection, Coccidiosis

Water intake, increased
Possible Cause: see Wet Droppings, Hexamitiasis, E.coli Infection

Water intake, reduced
Possible Cause: Infectious Catarrh
Weakness, nestlings
Possible Cause: Infectious Catarrh

Weight, loss of
Possible Cause: Hexamitiasis, Worm Infestation, Salmonellosis, Trichomoniasis, Coccidiosis

White dots (throat)
Possible Cause: Salivary Stones

Wind pipe (trachea), inflammation of
Possible Cause: Infectious Catarrh, Ornithosis, Trichomoniasis

Wing paralysis
Possible Cause: Salmonellosis

Yellow dots (throat)
Possible Cause: Trichomoniasis