**Zoonotic disease:**
**Disease which are primary effect animal but occasionally cause disease in man (e.g Brucellosis).**

**Brucellosis:**

**Zoonotic disease of public health.**

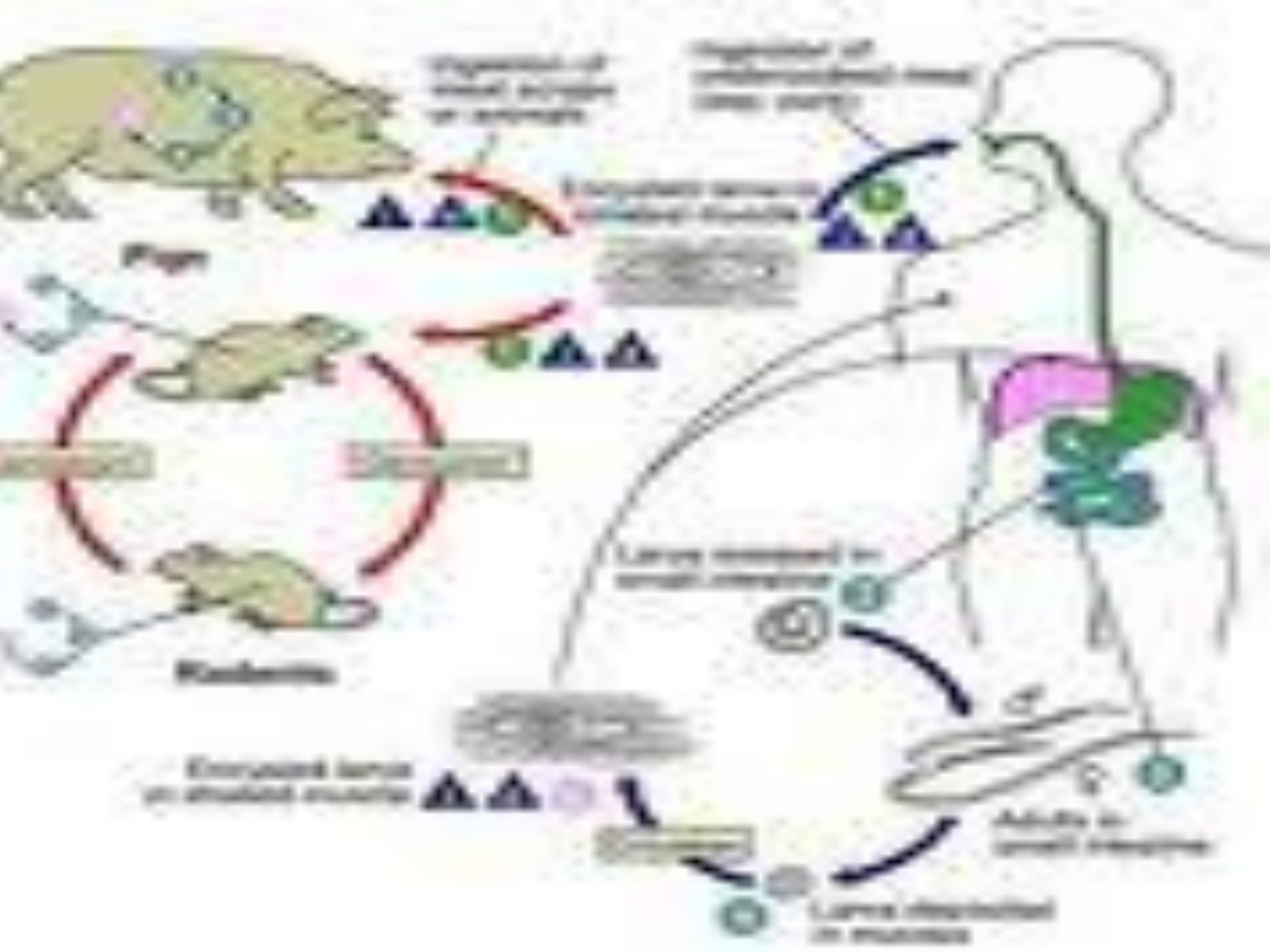
**Causative agent:-**

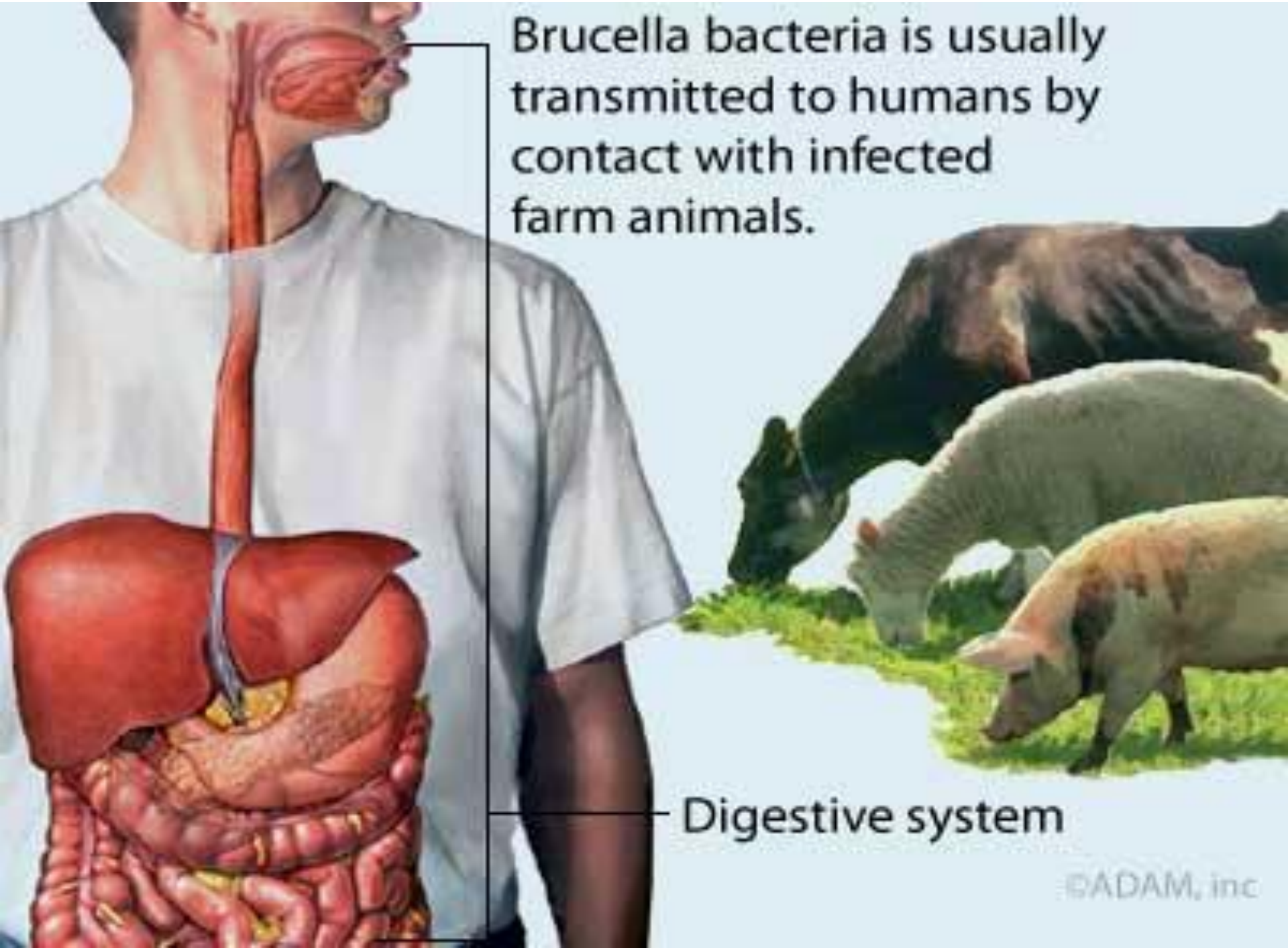
**Brucella abortus (affected cattle & sheep )**

**Brucella melitensis (affected sheep,goat &man)**

**Brucella suis (affected swine )**

**Brucella melitensis occur more frequently than other types , in general population and it is most pathogenic & more virulent than other species.**




Brucella bacteria is usually transmitted to humans by contact with infected farm animals.
Digestive system
©ADAM, inc

**Disease in man:**

**Mediterranean fever , undulant fever ,Malta fever .**

**The incubation period usually (1 to 3 weeks) .**

**Symptoms include fever,headache,chills,orchitis, weakness , nausea . weight loss & splenomegaly .**

**Contamination of milk:-**

**The organisms gain entrance to milk from (Udder or by pollution of milk during & after production with the animals infectious discharge especially aborted fetuses , fluids or membranes or urine .**

**Diagnosis:**

**Rapid Slide agglutation test ,Ring test form milk sample .**

Healthy ovine testicle

Brucellosis infected testicle

**Bovine tuberculosis:**

**It is a chronic & acute bacterial infection .**

**Causative agent:**

**G+,acid fast , aerobic ,bacillus of Mycobacterium genera. The most common are(bovine , avium ,hominis ) .All three types are capable of causing disease in human but (Myco.bovis ) is the species responsible for cattle affection .**

**Disease in man:**

**Can occur (2 to 3)months after infection or years later. So the clinical syptom in humans depend on the organ system involved , primarily attacks the (Lung) ,but which may also affect the kidneys ,bones ,lymphnodes ,and brain .**

**Symptoms of pulmonary TB include : (coughing,sputum,production ,chest pain,shortness of breath,loss of appetite ,weight loss,fever,chills &fatigue ) .Skin lesion characterized by (ulcer or by popular lesion progressing to dark suppurative lesions) .**

**Contamination of milk :**

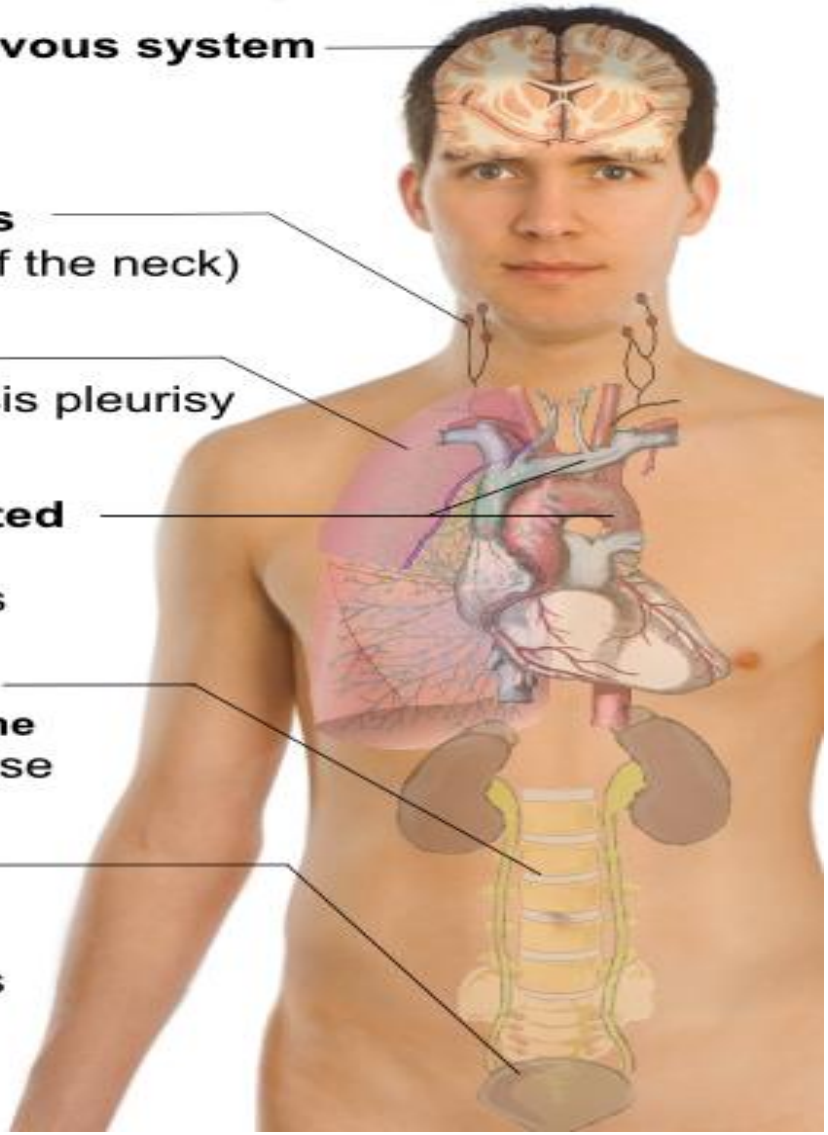
**1-The affected animal( milk but udder remins un-affected).**

**2-Milk (from affected animal or human).**

**3-Infected sputum(from animali&orhuman).**

Main sites of

# Extrapulmonary tuberculosis



**Central nervous system**
- Meningitis

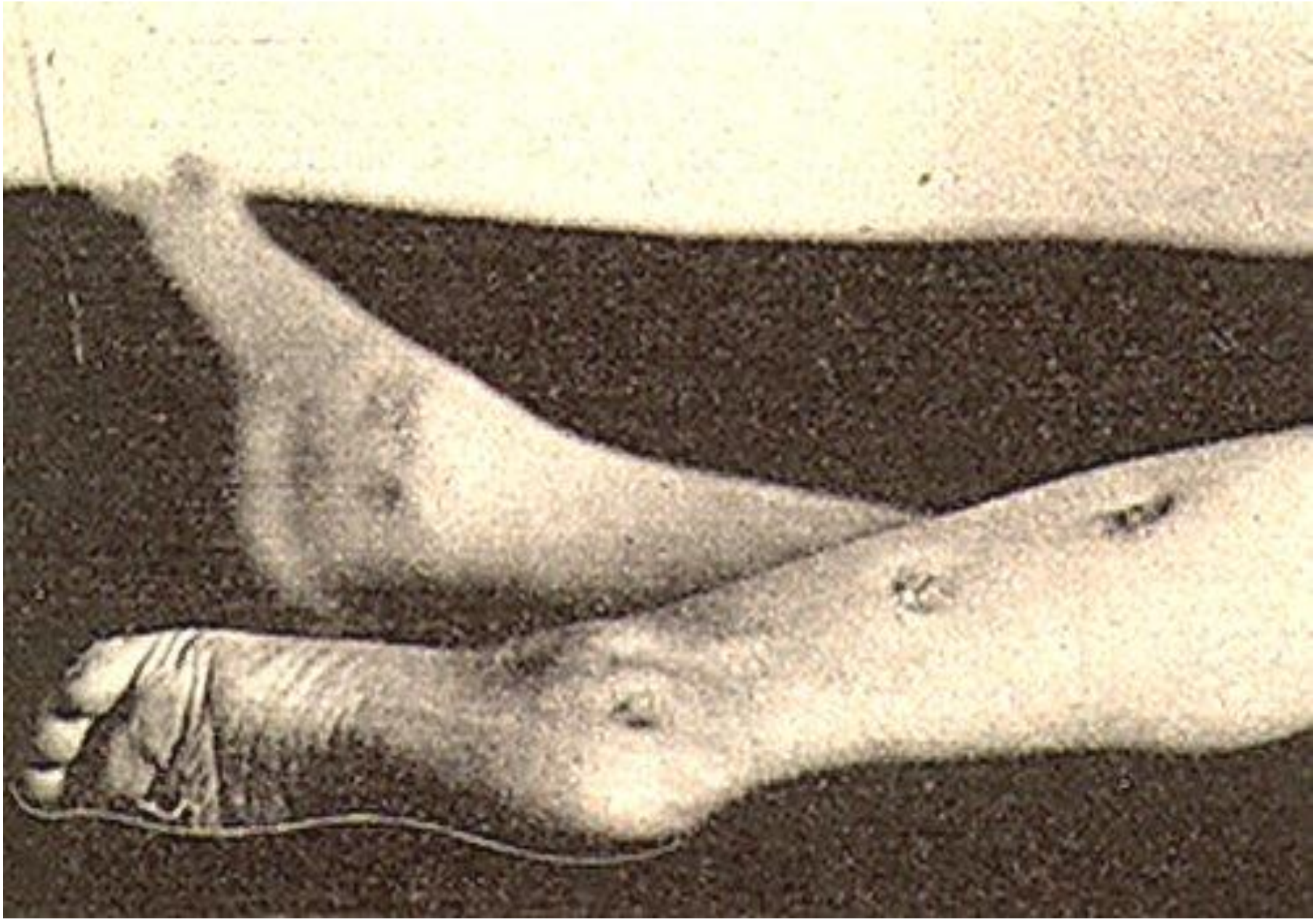
**Lymphatics**
- Scrofula (of the neck)

**Pleura**
- Tuberculosis pleurisy

**Disseminated**
- Miliary tuberculosis

**Bones and joints of spine**
- Pott's disease

**Genito-urinary**
- Urogenital tuberculosis



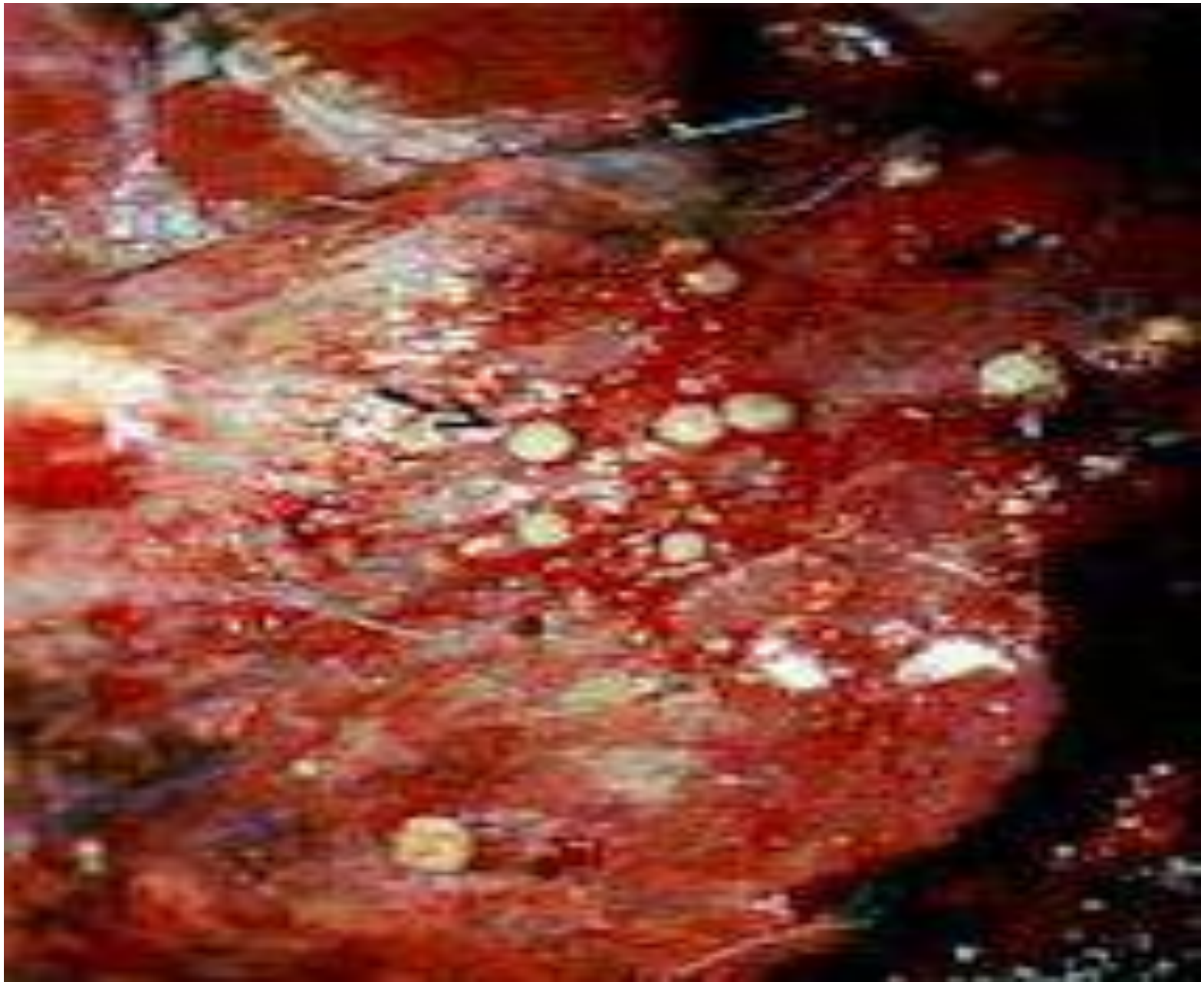
**Diagnosis:**

**1-Intradermal Tuberculine test .**

**2- Radiography. Chest X-ray .**

**3- Acid fast stained sputum smear or other body fluids & tissues .**


Copyright Department of Veterinary Pathology, Western College of Veterinary Medicine



the delicious life

**Anthrax:**

**An acute bacterial infection of humans &animals.**

**The disease wourdwide&is enzootic in certain African&Asian countries .**

**Causative agent :**

**Bacillus anthracis(bacterium) , G+ spore- forming aerobic rod.**

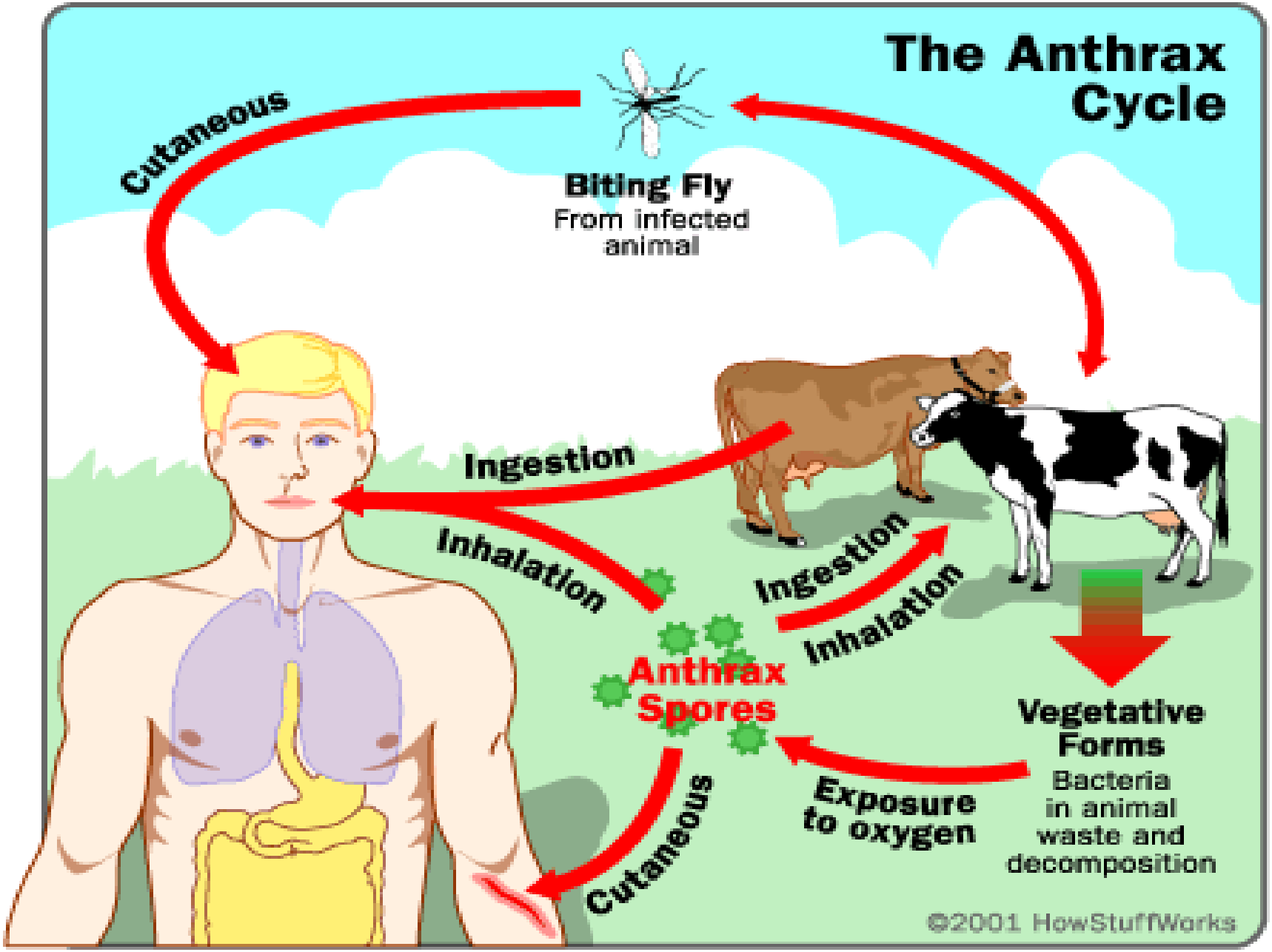
**Disease in man:**

**Incubation period is usually with in (7 days).**

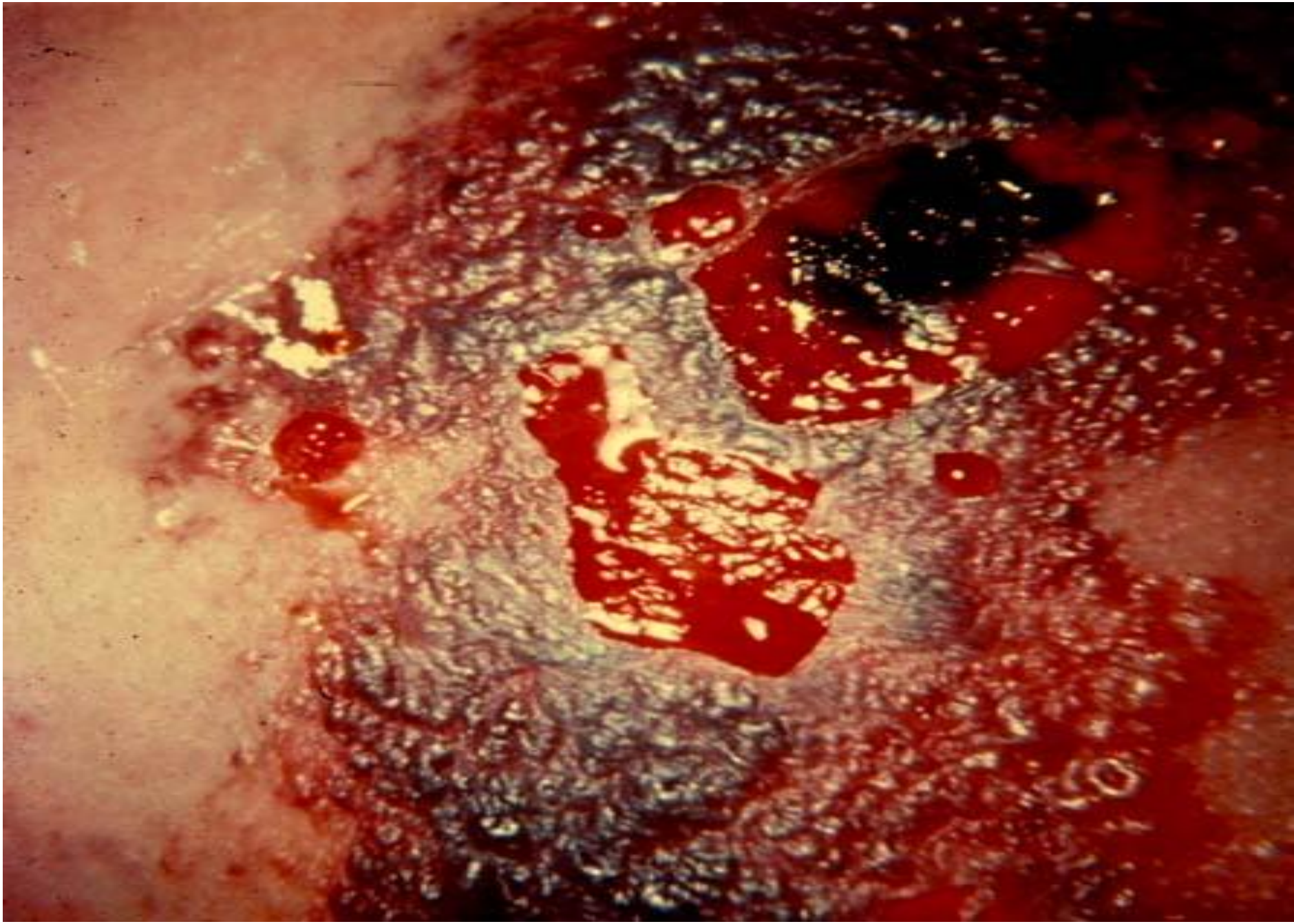
**There are 3 types if it is occur:-**

**1-Cutaneous form (malignant pustule)**

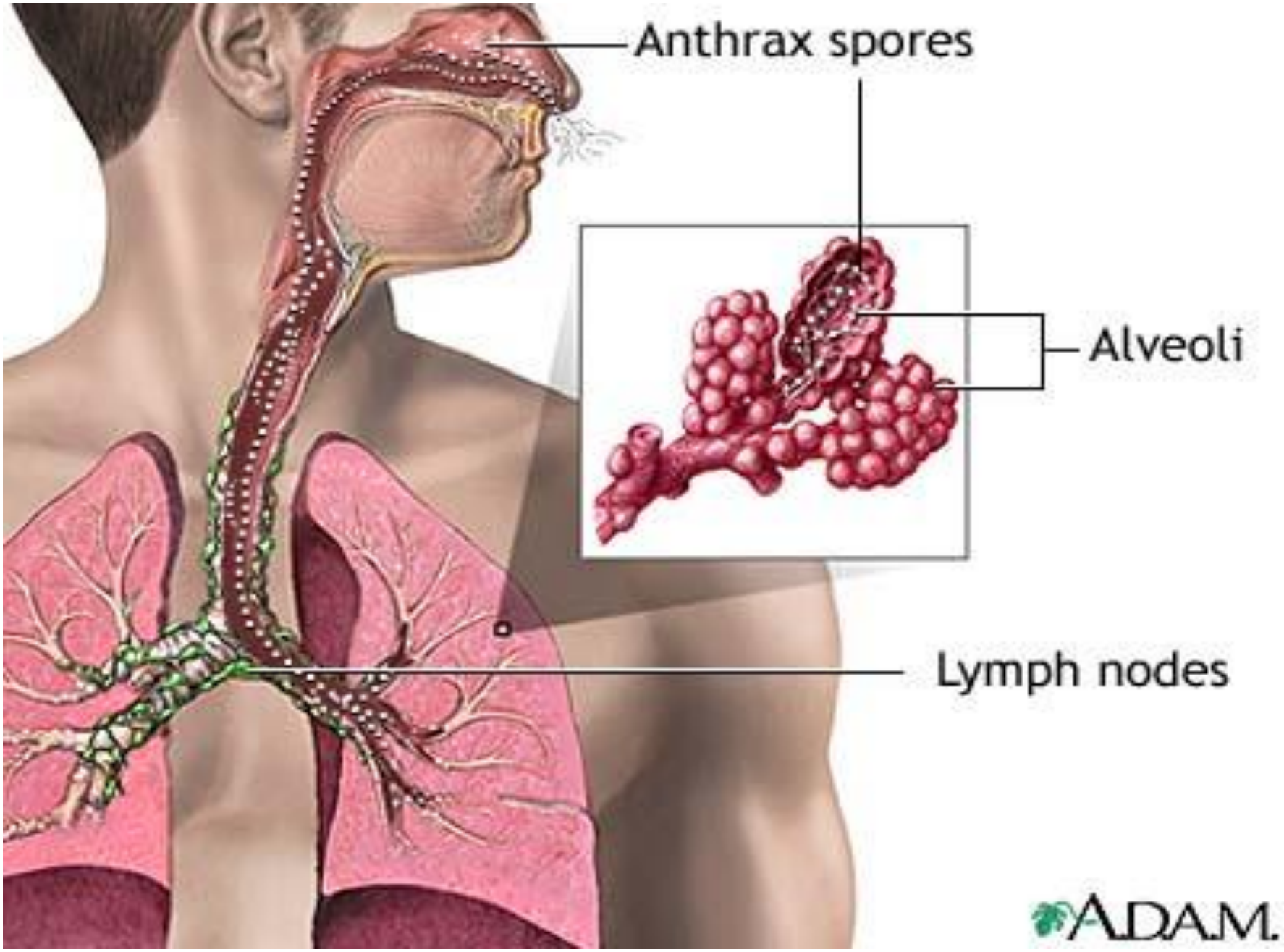
**Most common I.P(1-7days),then Papule appears on an exposed area of skin & becomes Vesicular .**

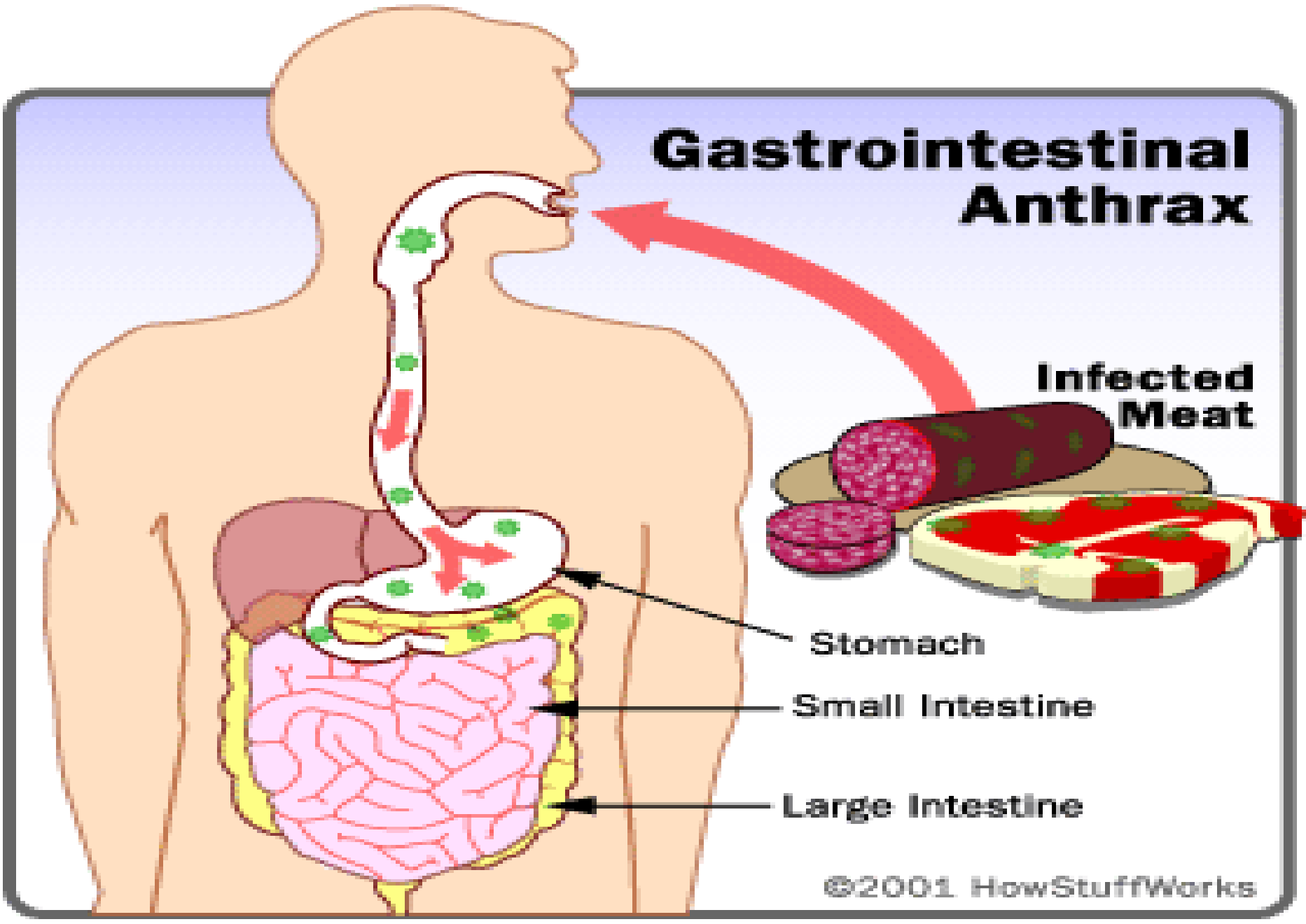

The Anthrax Cycle
Cutaneous
Biting Fly
From infected animal
Ingestion
Inhalation
Ingestion
Inhalation
Anthrax Spores
Vegetative Forms
Bacteria in animal waste and decomposition
Exposure to oxygen
Cutaneous
©2001 HowStuffWorks

**2-Pulmonary from (wool sorters disease ):**
**I.p(1-5days),fever,cough ,dyspnea respiuratory failure & death in (24 hours) as a result of pneumonia .100%fatality.**
**3-Intestinal form :**
**I.p(12hours—5days),man is infected by handling contaminated carcasses ,wool,hide,or hair .Also can be infected by ingestion or inhalation of spores or bacilli .**




(c) University Erlangen,
Department of Dermatology
Phone: (+49) 9131 - 85 - 2727


Anthrax spores
Alveoli
Lymph nodes
A.D.A.M.


Gastrointestinal Anthrax
Infected Meat
Stomach
Small Intestine
Large Intestine
©2001 HowStuffWorks

**There are No reports of disease spreading from human to human. Anthrax rare transmuted throw or during milk because the organism exposed into milk in shortly before death of animal & milk yield decrease & rare &can conataminated from environment &infected man.**

**Q-Fever:**

**Is an infectious disease of wild & domestic animal (sheep, goat & cattle ) with numerous Tick hosts.**

**Causative agent:**

**Rickettica ( Coxiella burnetii) ,G-ve,obligate intracellular bacteria. Stains red with Gimenez&Macchiavello stains &purple with Giemsa.**

**It is name from its a etiology which remained unknown or Questionable for quite sometime.**

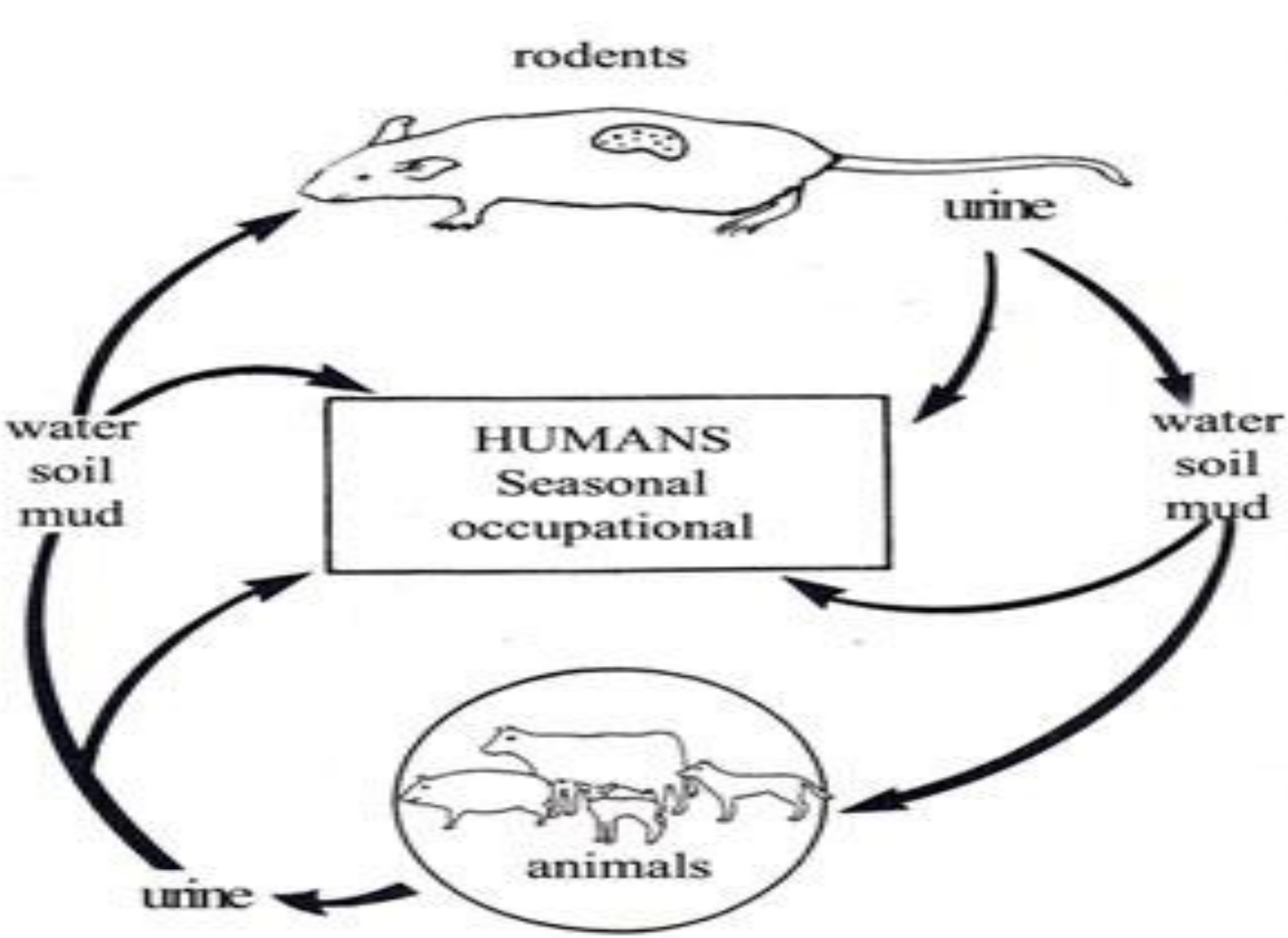
**Disease in man:**

**Occur due to consumption of infected milk.**

**( Aerosol is a major means of transmission) & symptoms include headache,fever,chills ,muscle aches,and general feeling of ill health.No skin eruption or rash .**

**Contamination of milk:**

**Organism shed in urine ,feces and milk ( udder&milk appears normal) amniotic &fetal tissue are highly infective & the organism resistant to drying,heat & may survive some unsatisfactory time-temperature combinations used for heat treatment.**


rodents
urine
water
soil
mud
HUMANS
Seasonal
occupational
water
soil
mud
animals
urine

**Diagnosis:**

**1-Use of IFA(immunofluorescent antibodies ).**

**2- Organism can be inoculated into tissue culture & grow over (4 to 7 days) but this is very hazardous to personnel.**

**Rabise(Lysa ,Hydrophobia ):**

**Is an infectious zoonotic viral disease that can affect all species of warm-blooded animal including man.**

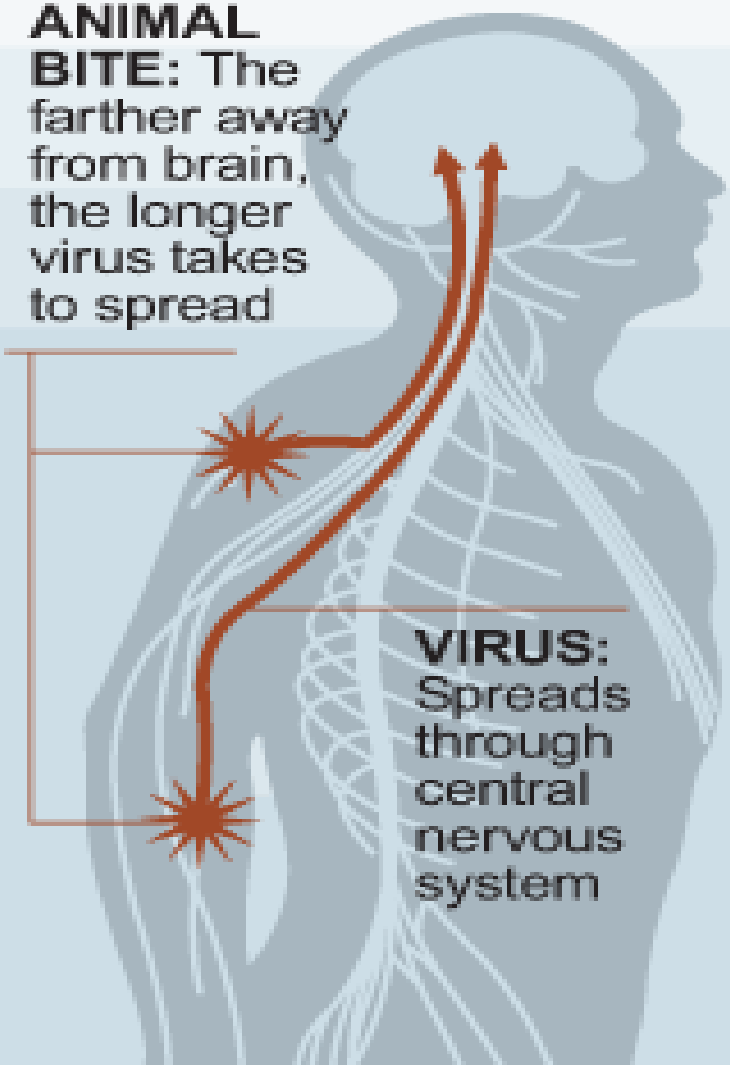
**Causative agent :**

**Rhabdovirus ,which causes an acute almost invariably fatal disease that affect the salivary glands&the C.N.S.**

# Rabies

## How it spreads

**ANIMAL BITE:** The farther away from brain, the longer virus takes to spread



**VIRUS:** Spreads through central nervous system

## Common carriers of rabies

**Infected animals:** Show no fear for humans; act very agitated


**Dog:** Another common rabies source

## Symptoms in humans

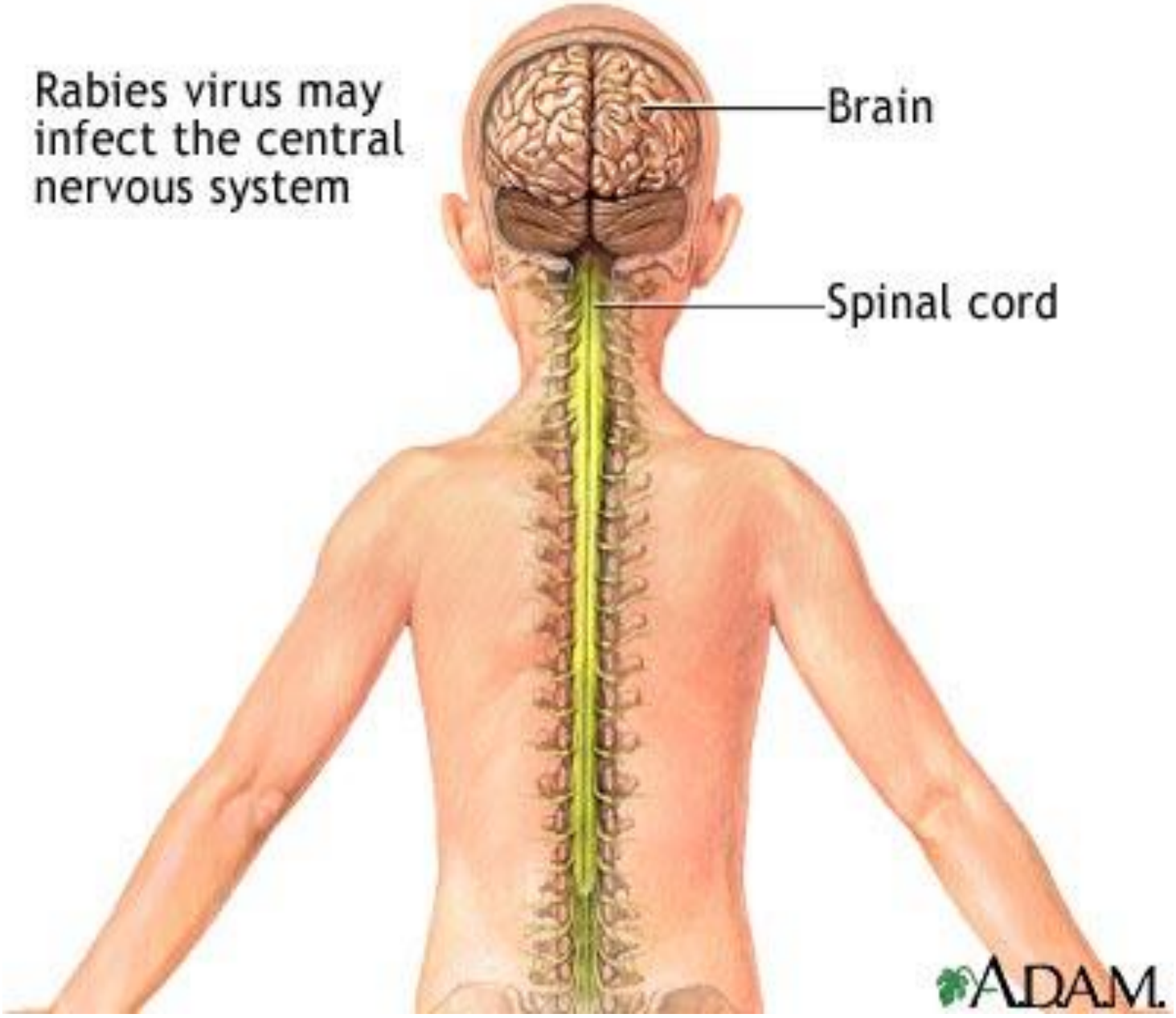
- Fever, depression
- Agitation
- Painful spasms followed by excessive saliva
- Death within a week without vacine

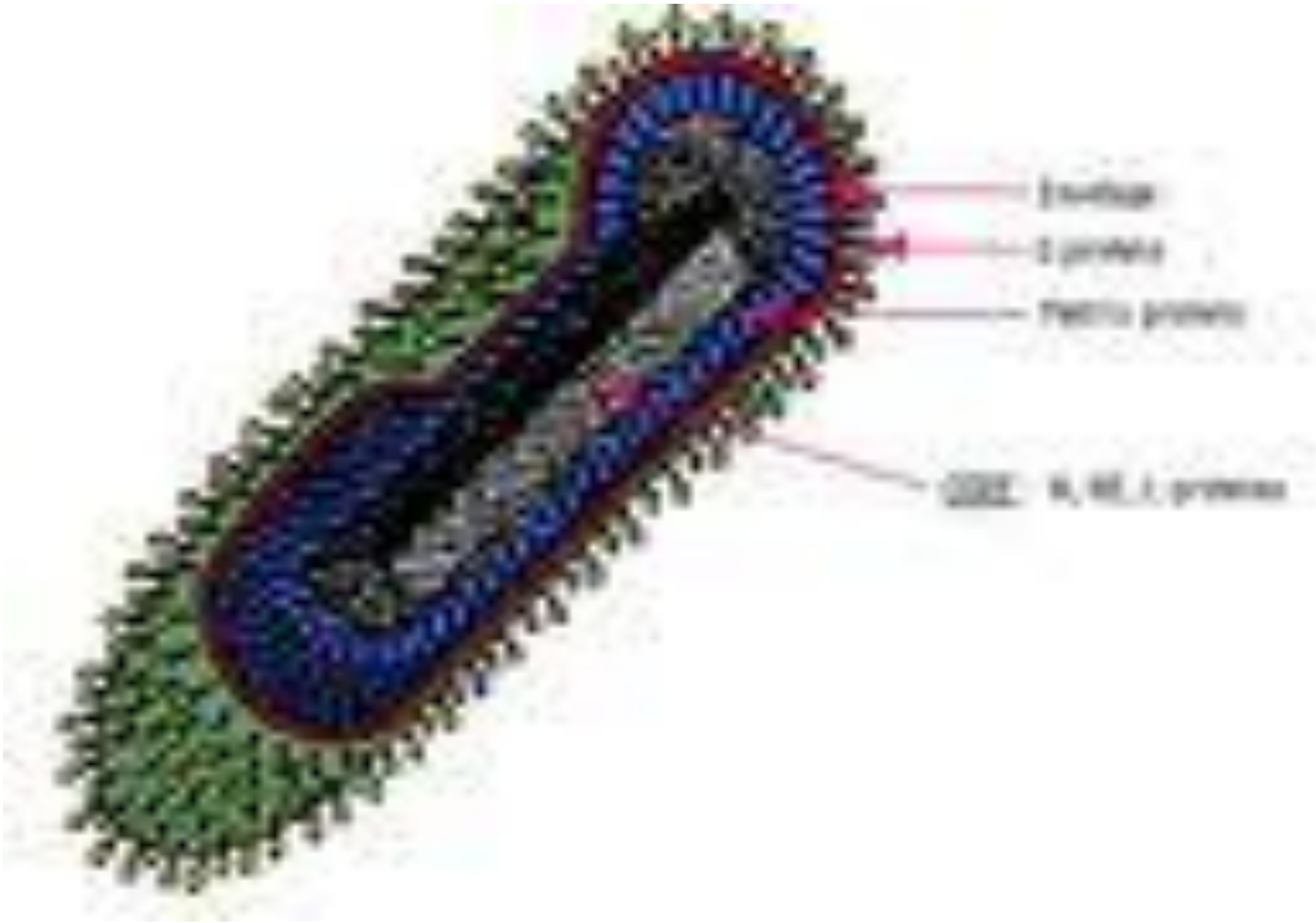
**Treatment:** Hospitalization, immune globulin injections, anti-rabies vaccine

**Foaming at mouth after drinking:** Produced by spasms in throat

*SOURCE: The World Book Medical Encyclopedia*

KRT

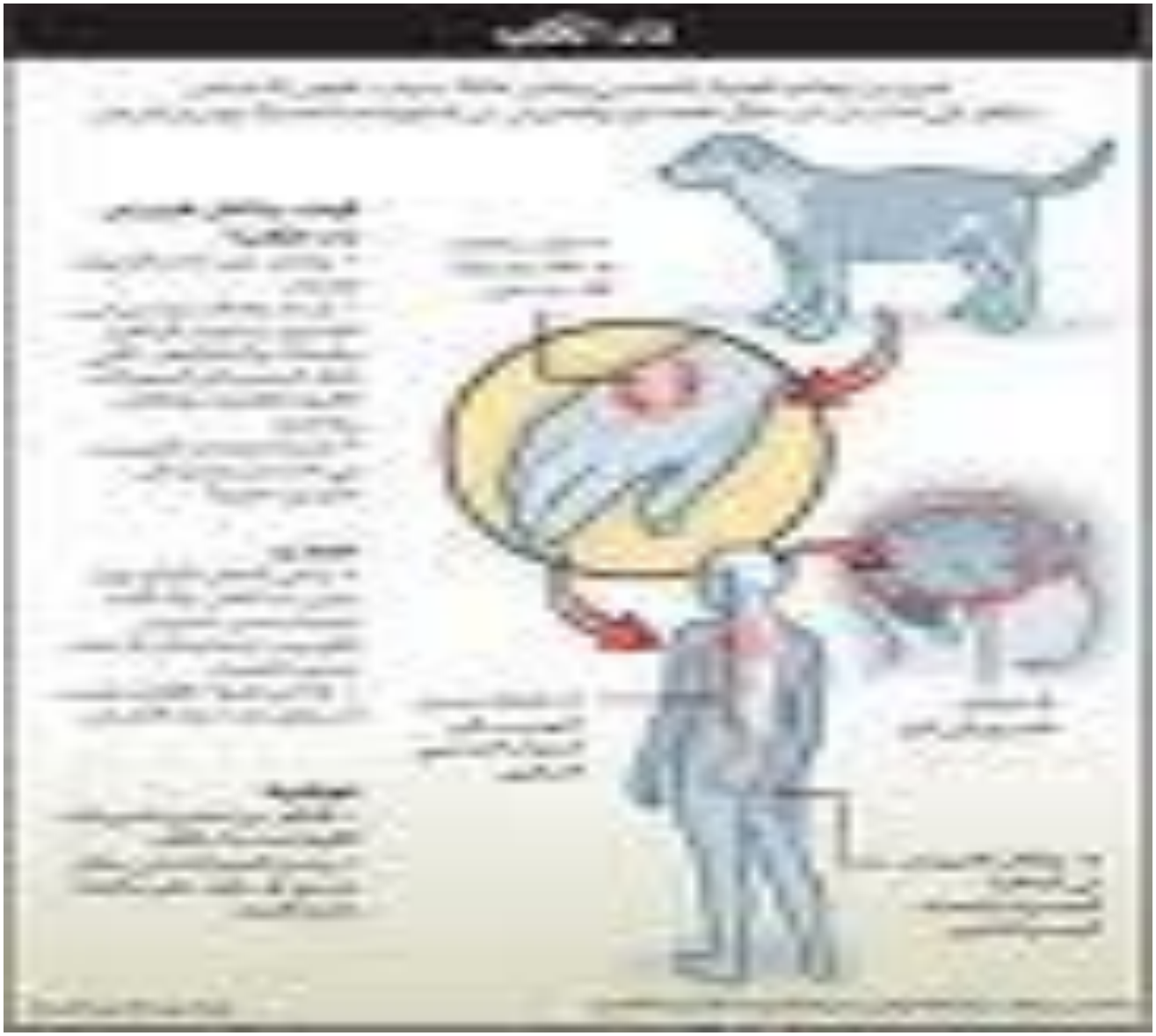

Rabies virus may infect the central nervous system
Brain
Spinal cord
A.D.A.M.



**Disease in man:**

**There is usually a history of animal bite. Pain appear in the side of bite ,attempts or tried of drinking caused extremely painful laryngeal spasm , so that the patient refuses to drink (hydrophobia).**

**The causative agent is Found in the domestic & wild animals & can transmitted to other animals & human through close contacts with their saliva (i.e.bites,scratches,licks on broken skin & mucous membrane).**



**Clinical symptom are muscle spasm ,laryngospasm, convulsions occur ,large amounts of thick saliva are present.**

**Contamination of milk:**

**Virus shed in milk & saliva of infected animal.**

**Cases of rabies in man due to consumption of raw milk are recorded & the virus get entrance through an abrasion in the intestine of consumer ,but the spreading of rabies by consumption of milk is rare.**

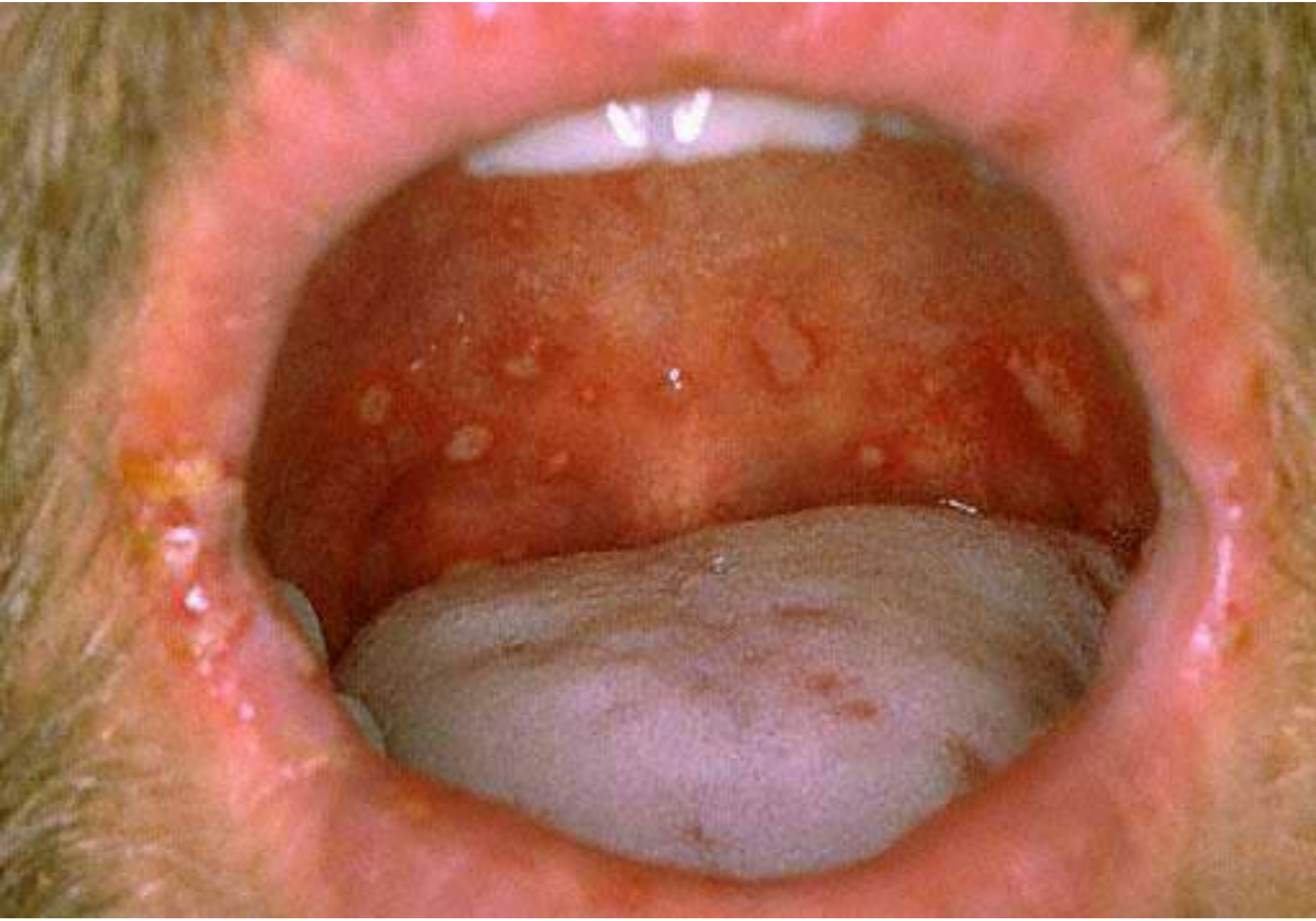
# Foot and Mouth disease:

# Is aviral infection caused by astrain of Coxsackie virus .

**Disease in man:**

**Most often occur in young children(under 10 years old), symptoms of fever, poor appetite,runny nose&sore throat can (3 to 5)days after exposure.Ablister like rash on hands ,feet&in the mouth usually developes (1 to 2 days) after the intial symptoms, the illaness is typically mild ,complications are rare.**

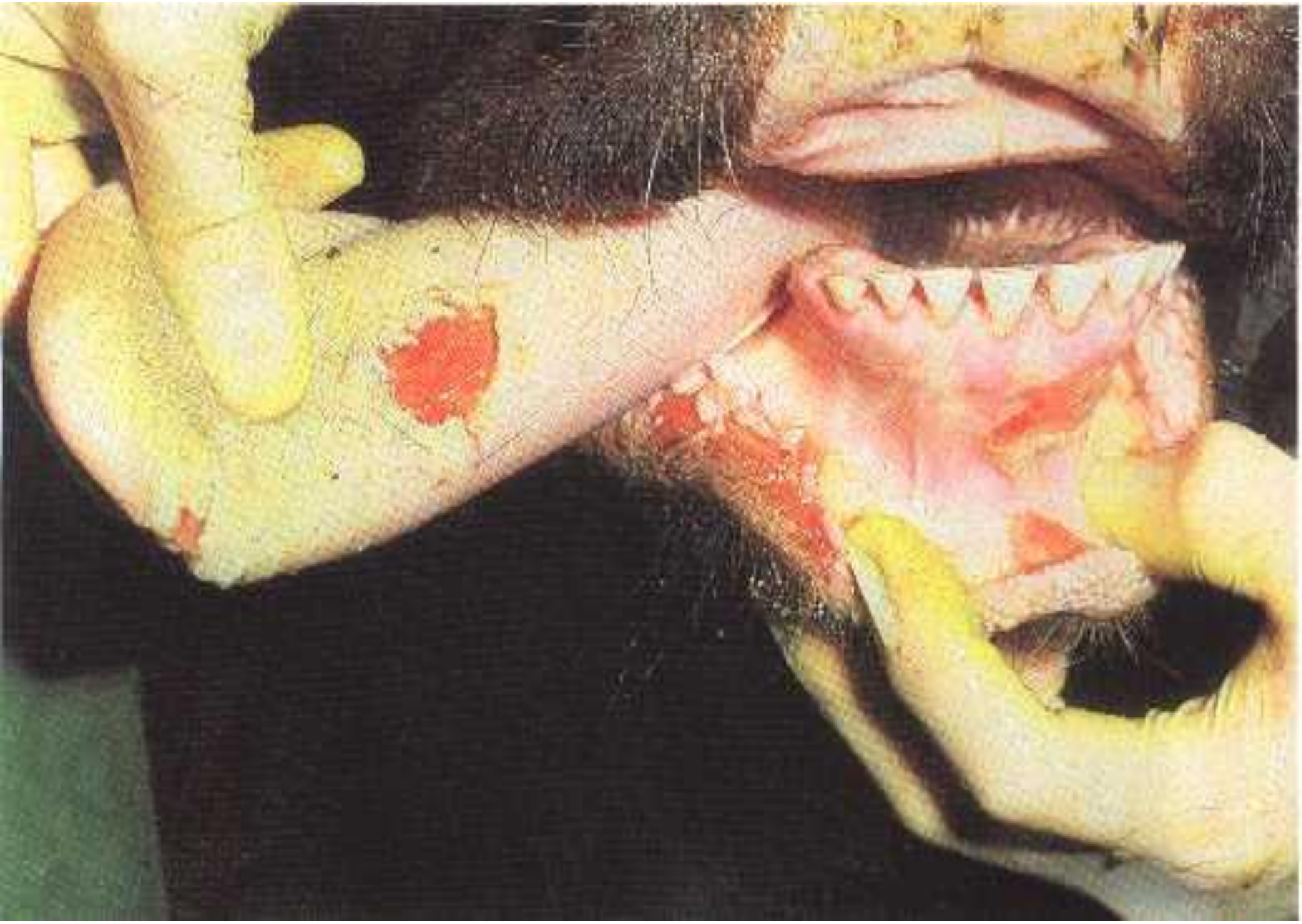

A.D.A.M.




A.D.A.M.

**The virus has been known to be shed in the stool for up to several weeks.Also virus occur in fluids inside the blasters.**


BAYER



**Contamination of milk:**

**1-Directly from(vesicles on udder& infected milkers hands).**

**2-Affected animals:**

**shed m.os in milk or contaminated from the nouse & throat discharges & feces of infected people .**

**3-Envirounment from dried dust contain virus.**

**Cow pox:**

**Is viral disease caused by vaccinia Virus.**

**Disease in man :**

**On rare occasions, cowpox may be transmitted to humans & produce characteristic red skin rash & abnormally enlarged lymph nodes.**

**In cause pox exanthema in face & milkers nodules in hands.**

**Contamination of milk:**

**From ( udder lesions& nodules in Milkers hands & also from environment).**

**Campylobacteriosis (Vibriosis ,vibronic abortion):**

**Causative agent:**

**Caused by species of genus Campylobacter ( C.jejuni,C.fetus&C.coli are the usual causes of campylobacteriosis in people ).**

**Campylobacter bacteria areG-ve, microaerophilic, curved ,motile rod .**

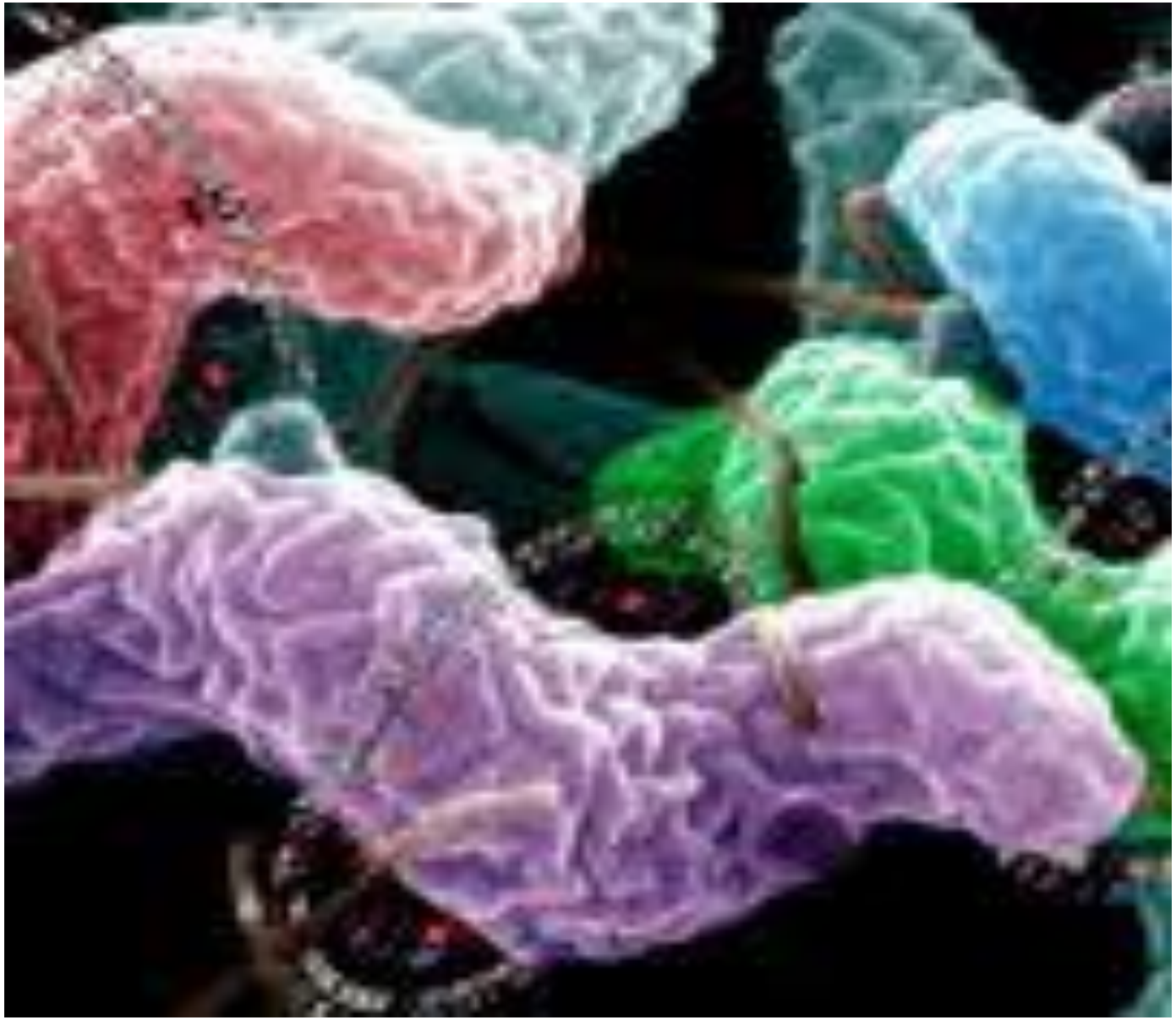
**Disease in man:**

**Onset of symptoms generally 2—5days after eating.**

**Last7—10days (Acute gastrointestinal illness, diarrhea with or without blood ,abdominal pain & fever).It may may cause pseudoappendicitis &rarely septicemia & arthritis .**

**Large outbreaks due to Campylobacter are usually associated with poultry , meat & raw milk .**

**Contamination of milk:**
**Either from udder, affected animal or human, or contamination of milk with the animals infectious discharge especially aborted fetuses ,fluids or membranes .**



# Listeriosis:

**Was primarily of veterinary concern.Where it was associated with abortion & encephalitis in sheep & cattle( Circling disease).**

**Causative agent:**

**Listeria monocytogenes.**

**G+ve,pleomorphic rod , resist heat,salt ,nitrite&acidity.They survive &grow at low temperatures.**

**Disease in man:**

**Primarily affects pregnant woman, newborn infant.**

**Outbreaks have been reported associated with ingestion& most recent(last) cases have involved raw milk,cheeses made with raw milk & milk contaminated post—pasteurization.**

# Listeria

**Listeriosis may occur as mild illnesswith such symptoms as (fever, headache, nausea & vomiting).**

**Among pregnant woman ,infection may affect the fetus resulting in abortion of still birth .If born alive, the infant may develop meningitis.**

# Contamination of milk:

**1-Infected animal(shed m.o in milk).**

**2-Infected human.**

**3-Anamil discharge especially(aborted fetuses, fluid or membrans).**

**Yersinosis:**

**Causative agent:**

**Yersinia pseudotuberculosis , Y.enterocolitica**

**G (-ve),non-spore forming rods .**

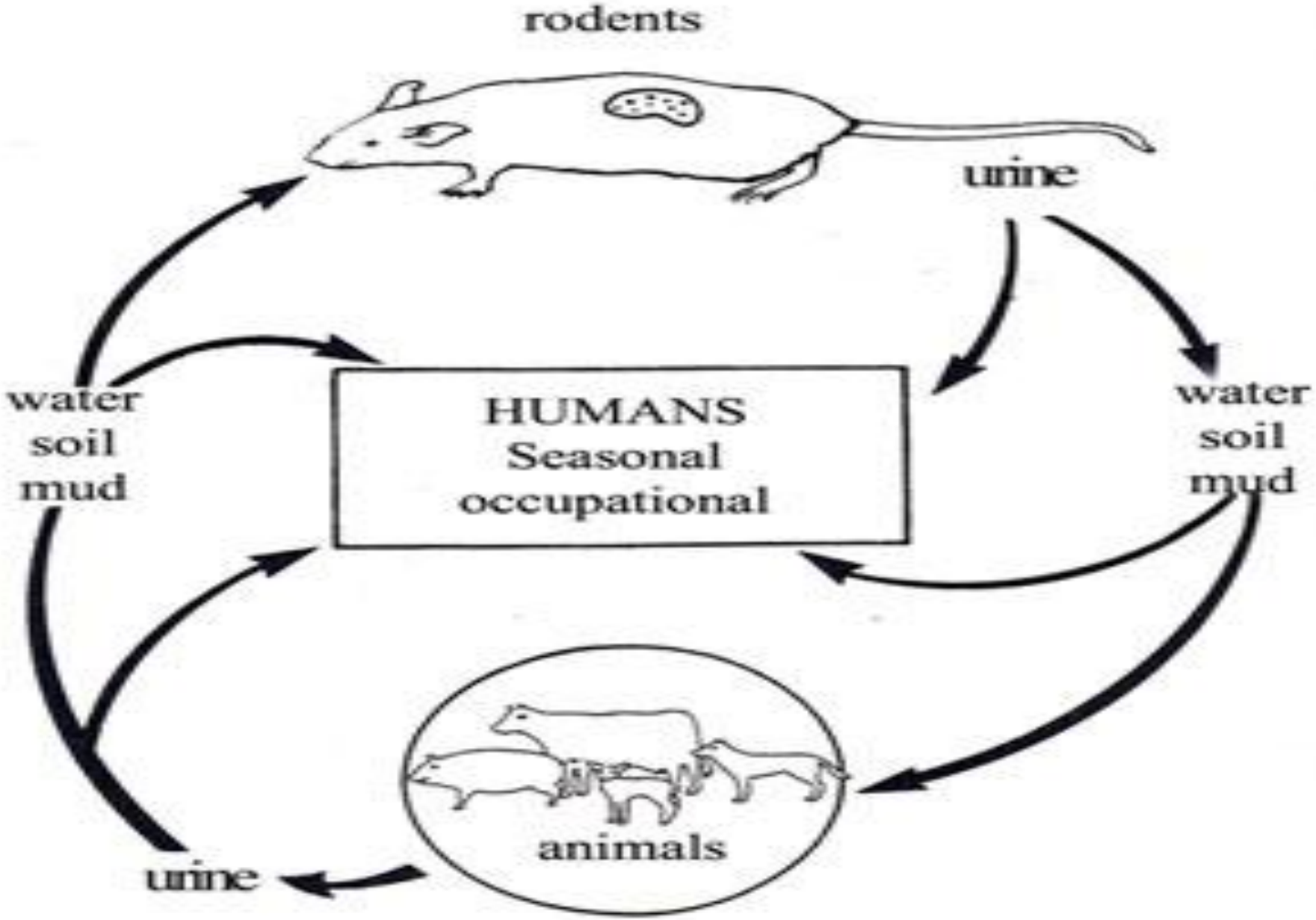
**Disease in man:**

**Gastroenteritis is the most common symptom, acute watery diarrhea, mesenteric lymphadenitis whichcan be confused with appendicitis, fever ,headache, pharyngitis, anorexia & vomiting .**

**Contamination of milk:**
**Direct or indirect contamination with contaminated fecal of man or animal& from uterine discharge in case of abortion .**

# Leptospirosis:
# Causative agent:
# Leptospira canicola ,
# Lept.hardjo &
# Lept .pomona

**Disease in man: Gastrointestinal disturbances ,weakness ,myalgia ,malase,chills & fever .**


rodents
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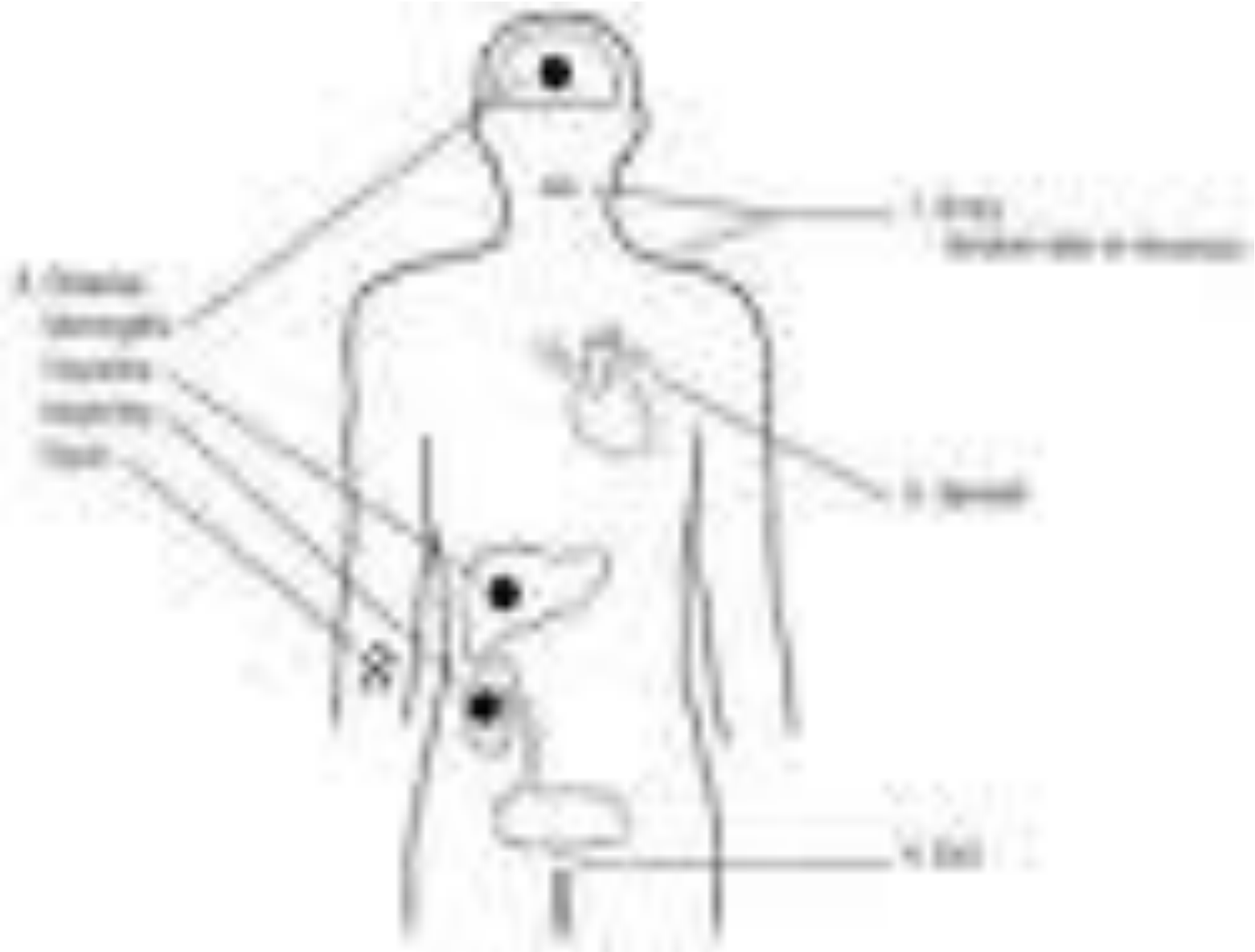


# Contamination of milk:

# 1-Direct from animal

# 2- Indirect from feces of man & animals & aborted discharge.

# Actenomycosis:
# Causative agent:
# Actinomyces bovis(fungi)

**Disease in man:**

**If present in milk the organism entrance to some new wound such as new tooth cavity ,intestinal ulcer or labial sore, which may be leadeing to abscess formation.The organism produce enterotoxins in milk which give rise to violent diarrhea &sickness when milk is ingested.**

**Disease of human:**

**Typhoid fever(Slmonella typhi infection)or(Alteric fever)or(Salmonella fever) :**

**Causative agent:**

**Typhoid bacillus Salmonella typhi**

**Disease in man:**

**Characterized by sudden onset of continued fever ,headache,nusea,loss of appetite,constipation or some times diarrhea.**

**Typhoid germs are passed in the feces and,to some extent, the urine of infected people.**

**Contamination of milk:**

**By food&water contaminated by the feces &urine of patients &carriers.Polluted water is the most common source of typhoid ,in additionas, contaminated milk &milk products have been shown as a source of infection .**

**Bad habits:When ahuman patient/carriers dosenot wash hands after using the toilet &then handles liquid or moist food that is not cooked thoroughly afterwards .**

# Paratyphoid fever(Interic fever)(Salmonella paratyphoid infection):

## Causative agent:

Caused by any of three bioserotypes of Salmonell enteritidis Paratyphi A, B and C.

It is similar in its symptoms to typhoid fever,but tends to be milder .It is similar also to typhoid fever in mode of milk infection,transmission&control.

**Dysentery: (Shegellosis)(Bacillary dysentery)(Shegella): Dysentery may be simple defined of shigella as diarrhea containing Blood.**

**Causative agent:**

**Shigella dysenteria , S.flexneri ,S.boydii & S. sonnei.**

**Disease in human:**

**It seen most often in preschool-age children.**

**In addition to bloody diarrhea ,the illness caused by pass shigella often includes abdominal cramps ,fever & rectal pain.**

**Most pepole pass shigella organism in their feces(stool) .Stool also contain blood ,mucus,&pus.**

**The most likely modes of transmission are person-to-person contact ,and contaminated water & food.**

**The most common mode of transmission of entric fever group is the fecal-oral route.**

# Cholera:

Is an acute intestinal infection, endemic in some tropical countries. It is mainly a disease of young children.

## Causative agent:

Caused by bacterium Vibrio cholera.

**Disease in man:**

**It has a short incubation period ,from less than(1 to 5 days),the symptoms of cholera are diarrhea &the loss of water &salt in stool. In severe cholera ,the patent develops violent diarrhea with characteristic (rice-water stool),vomiting ,thirst, muscle cramps. Fever is usually absent. Death can be occur if treatment is not promptly given.**

**Contamination of milk transmission:**

**The cholera germ is passed in the stool. It is spread by eating or drinking food( including milk &milk products)or water contaminated, directly or indirectly through the fecal waste of infected person.**





**Diphtheria:**

**Acute bacterial disease that usually affected tonsils, throat, nose &skin .**

**Causative agent:**

**Corynebacterium diphtheria**

**Disease in man:**

**Symptom usually appear (2—4 days) after infection .**

**There are (2) types :one type involve nose & throat , and other type involve skin .**

**Symptom include sore throat ,fever , enlargement of L.N in neck.**

**Skin lesion may be pain full ,swelling & redness.**

## Septic sore throat and Scarlet fever:

**Bacterial diseases caused by Streptococcus biogen. There are several strains some of them caused this diseases.**

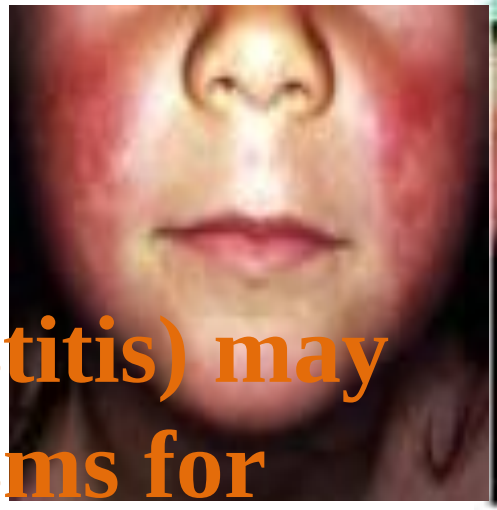
**Septic sore throat : it symptom in man are: fever ,sever inflammation of throat & swelling of L.N , coughing ,sneezing & nasal discharge .**








# Scarlet fever :Its symptom in man is similar to S.s.throat

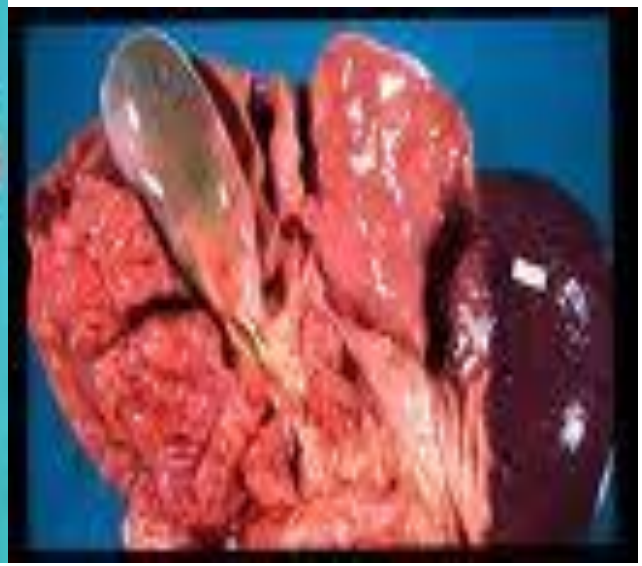


**Note:**
**Affected animal (mastitis) may discharge the organisms for length period in milk .**

**Hepatitis:(Infectious hepatitis , Epidemic hepatitis, Epidemic jaundice )**

**Hepatitis is inflammation of liver caused by virus:**

**(HAvirus,HBv,HCv,HDv,HEv &HGv).**


1

**Poliomyelitis (Infant paralysis):**

**Infectious viral disease that some time paralysis infection, chiefly infection children & young adult & caused by any one of relative virus called Polio virus.**

**Human tuberculosis :**

**It is caused by G+ve,cid fast,aerobic Mycobacterium.**

**The most common are ;**

**Myco.bovis(Dog,cattle,swine)**

**Myco.avium(Bird,swine,sheep)**

**Myco.tub.varality humanus(Man,cattle .swine)**

**All(3)types are capable to caused disease in man .**

# Food poisoning :

**Divided in to three main group which are:**

**A—Food intoxication :**

**1—Staphylococcal intoxication:**

**Staphylococcal aureus is (G+ve),produce toxin called**

**(Enterotoxine) which is heat stable, while other spaces of Staphylococcal produce heat labial toxins.**

**Incubation period 2—4 hours.**

**The principle sources of Staph.aureus in human in skin,face,nose ,and most clinical symptoms are vomiting with diarrhea.**

**2—Botulism :**

**Clostridium botulinum produce also toxin in canning .**

**3—Clostridium perifringens produce enterotoxin.**

**4—Bacillus cereus produce also entertoxin which caused food poisoning .**

## B—Food poisoning infection:

## 1—Salmonellosis:

**Caused by Salmonella typhimurium , Salmo.entertiidis &Salmonella weltiverdin.**

**The incubation period by Salmonella infection is (12-24 hrs) .**

**The clinical symptoms are Fever, vomiting ,diarrhea with abdominal pain or cramps .**

**2—Campylobacter food poisoning infection:**
**Caused by Camp. Enteritis .**
**3—Shigella infection(Bacillary dysentery):**
**Caused by Shigella sonni .**
**4—Listeriosis :**
**Caused by List.monocytogenus.**
**5—Yersiniosis :**
**Caused by Yers.enterocolotica .**
**6—Entero hemorrhagic:**
**Caused byE.coli(O157:M7).**

**7—Cholera :Caused by Vibrio cholera.**

**8—Vibrio infection :**

**Caused by Vibrio para hemolyticus , V.foluncus .**

**C—Toxi-infection:**

**Clostridium botulinum spore former bacteria .**

Health meat(Meat hygiene):

Is the science that deals with the examination of the meat and its products from the product until it reaches the consume

You must provide good quality acceptable to the meat and its products to the consumer and must be the meat :-

(1) Free of taste or odor non-acceptable.

(2) Conform to the specifications sound even consumer refused it.

(3) Free of any of the diseases that may affect the individual as a result of covered(consumer) or circulation and that may be the causes of these diseases may be satisfactory germs or parasites or toxins.

Definition:

Carcass: Is the full body of the animal  meat after slaughter & bleeding and herald the completion of the process and remove the entrails and limbs at the end of the comb the front and back and the remove the head and tail and the udder and skin.

Waste carcass (Offal's): نفايات الذبيحة

It means the soft flesh of the tower is in the sacrificial even if it is connected by a natural connection.

Viscera: الأحشاء

Waste is present in the thoracic and abdominal region and pelvis, as well as include the esophagus and trachea.

Pluck:  معلاك

Include esophagus ,trachea, lung, heart and/or liver .

Kinds of animals that are slaughtered in Iraq:

Is from cattle ,sheep, goats and camels as well as poultry.

Carcass fit for human consumption:

Production carcasses clean and fit for human consumption, should be considered and the application of the following bases:

1-Maintaining الحفاظ the health of animal flesh during his upbringing and care of it when you move it and harboringإيواءه and prepare for the slaughter.

2-Rationalize or minimize the use of drugs and chemicals on the farm and to refrain from giving medicines, especially antibiotics life before slaughter period of time depending on the type of medication. تقليل استخدام الادويه والكيمياويات

3. The establishment of the slaughter house Health.إنشاء مجازر حديثه

4-Correct application of the laws and regulations relating to the health of the meat.

التطبيق الصحيح للقوانين والانظمه المتعلقه بصحة اللحوم

5. Provide a cadre of trainees and specialists from veterinarians and assistants in the field of health of meat and its products.

توفير كادر من المتدربين والمتخصص من الأطباء البيطريين

6-Maintain a high level of public health in the places of treatment and handling of meat and its products and methods of transport, storage and ways to use them.

7. The purpose of the application of the foundations of this is:الهدف من تطبيق الأسس
(A ):Consumer protection and protect him from diseases that can be transmitted through meat. حماية المستهلك من الآمراض
(B):Access to the best scientific roads and health in the treatment of meat. الوصول إلى
( c):Detect adulteration or commercial adulteration and consumer protection, including methods .الكشف عن أساليب الغش

# The transfer of animals from the farm to the slaughter house:

For the benefit of an animal for slaughter must take measures health care of the animal from leaving the place which was present it (farm)  until arriving at the place of slaughter and procedures Health include the transfer of the animal and care during transportation and avoid any disease fall ill, as well as sponsorship رعايته when he arrived and prepared before the slaughter.

## Precautions to be taken during the transfer of the animal:

1. The animal must be healthy and enjoy good health and must not transfer meat animals with other animals( healthy or sick) sent to the other.

2-Creating (أعداد) animal for the trip(travel) :

To the meat of the effort and fatigue particular animal will not be exposed if the trip takes time and long distances and therefore so does not affect the quality of the meat product should give comfort to the animal if the distance to .

## 3--Treatment of animals during the journey:

First, you must use the cover of cars if the cars are Convertible(covered) to avoid the rain in the winter and the sun in the summer as well as the isolation of cows for sheep and goats, or horned animals isolated in order to avoid injuries and bruises preferably restrict animal movement, especially the bulls if the trip(travel) more than a day and should be rested animal and providing food and drink enough even for animals not lose part of their weight while traveling.

4-- Transport cars :

You should have a good ventilation and designed in a way easily cleaned and disinfected before and after the trip are quick and easy, and also must avoid the accumulation of animals inside the car or cars especially in the summer to avoid thermal(heat) shocks in addition to nutritional problems....

# Damage and errors that occur during the transport of animals:

1- underweight(Loss of weight)

2-anguish (Stress) 3-suffocation

4 - fractures and bruises

5 - Diseases such as :

1-- Transport fever Or Shipping fever caused by bacteria ( Pasturella ) as well as virus called( myco virus para influenza ) . 2--- Acute Salmonella infection 3—Tetanus

# Slaughter houses ( Abattors ) :

For meat production sound and free of pathogens and fit for human consumption must be provided slaughter houses for the purpose of examination before slaughter and make sure they are free from diseases and safety and then slaughtered and skinned and unloading carcass intestines and accurately detect it to make sure they are clean and assess suitability for human consumption , should therefore provide a healthy and conditions preventive crisis within the slaughtering house and provide them with instrument and equipment essential, addition to  the management of the Independent going to work.

All designs of slaughter houses converge in one's goal is to put the meat clean and healthy addition, the design of the size of the building depends on the type and number of animals will be slaughtered daily varies slaughter house design by executing company and the nature of the place, which will commend him in addition to technological staff.

When commends the slaughter house must take into account the following:

1 – To be close(near) to plants(محطات )and animal breeding farms to facilitate the transfer and reduce the negative effects on them.

2 - To be close to the main roads paved( معبده ).

3 - To be a provider of clean water, electricity, and is supplied with a generator backup أحتياطيpower.

4 - To be far away from residential areas مناطق سكنيه.

5 - To be in the down town and the air is going through the city boiled first and then pass on the slaughtering house.

6 - To be close to the main course of the river.

Components of health massacres:
1 - Corrals or shelters 2--Unit slaughter forced 3-- Hall slaughter 4 - Treatment sacrifices lounge 5—Skin (Hid) storage . 6—Chilling room . 7– Condiment room hanging التالفه meat 8--Room cleaning the stomach and intestines 9-- laboratory
10- Administrative Offices
11-- accessories manufacturing
12 - processing unit and water purification .

Health foundationsألأسس in the work of the slaughtering houses:

Health slaughtering house must include the following elements in order to judge the validity offered اللحوم المطروحةfor consumption and fit for consumption of meat, namely:.

1-- hygiene and sanitary precautions (constant cleaning and overall cleaning)

For the success of the task of cleaning the slaughter house must follow these steps:

1-- Remove grease(fat) and meat residue and waste.

2--Use a detergent 3-- use hot water

4-- use disinfectants and then the final washing .

2-- Examination of the animal before to slaughter must conducted by a period of not more than 24 hours earlier before slaughter, and the importance of screening prior to slaughter is that:

1 - some diseases are difficult to diagnose after slaughter (such as Rabies and rickets and poisoning) and other disease.

2-- Result of the lackقلة of productivity الانتاجof the animal or sick sent to slaughter or the use of some antibiotics educators life المربين to cover some diseases will appear unhealthy conditions that are exposed on the way , the animal appears some .

3-- work to prevent the spread of infectious diseases through identification with the help of specialized veterinary bodies and installتثبيت their locations.

4-- prevent the slaughter of pregnant females to help protect livestock حماية الثروة الحيوانيه.

5-- Use of information & installed مثبته notes in the examination before slaughter in judging the animals during testing after slaughter and diseases that are diagnosed before slaughter cases:

(a) Mastitis ( b) Tetanus ( c) Rabies
( d)--'Infection with Listeriosis
( e) Infection with Actino mycosis or Actino bacillosis , as well as can be observed cases of rheumatoid arthritis, or infection of navel ill(الصره) .

After examination before to slaughter animals can be classified into:

1-- Normal animals and outwardly يصرحprofesses a slaughtering animals apparently improper.

2—abnormal animal should be divided into:
.A-- Hopeless treated animals or infected with an incurable and is unfit for slaughter.
B-- infected animals or sick and easily treated.
C- infected animals and stop suitability for consumption in the examination, which is after the slaughter of these animals are called questionable(suspected) animals.
3-- Treatment of animal slaughter:

To animals ready for slaughter must don’t forget the points as follows:لتهيأ الحيوان للذبح يجب مراعاة النقاط

1- Comfort راحة الحيوان(12—24hrs) .

2-- Drinking water (clean &planate of it) .

3 – Nutrition(prevent food 12 hrs before slaughtering).

4-Washing and cleaning the animal.

## 4-- The slaughter of animals:

God analyzed animal slaughter, but law makes it compulsory compassion الرحمة وعدم التعذيبand lack of animal cruelty القسوة عليهand torture him for that originated the idea of the human slaughter.

The goal of the slaughter of the animal is not an animal sense of dread and fear and control the animal at slaughter and relieve the pain that accompany the slaughtering process.

The most important methods used to stunning the animal صعق or loss ofفقدان وعي consciousness:

1-way bullet restricted ( Captive blot ) الطلقة المقيد

2-Gun Shout جهاز يشبه المسدس 3-way hammer

4-way electric shock: الصعق الكهربائي

Stages throughout the animal electrically shock:

1-Severe muscle contraction and directly followed the fall of the animal and stop breathing.

2-Relaxation the muscle after the lifting of the current.

3- Legs movement and the return of breath after one minute.

5-The use of carbon dioxide (CO2) :.

This method is used in the USA for swine dumbfounded (CO2 concentration of 65%).

6-- Method of acupuncture or Pitting .الوخز

Animal slaughter ways:

There are two ways to slaughter the animal --:

1--Islamic way two or Mohammadiyah

2- Jewish way .

# Slaughter on the Islamic way :

This method is used after the animal was stunning .

There are some conditions that reaped availability even be Hall: الشروط الواجب توفرها حتى يكون الذبح حلال

A--Person how slaughter the animal must be Muslim or writing. مسلم أو كتابيا

B--Slaughter mentioning the name of God with zoom (the name of God ..Allah larger).بسم الله ...والله أ كبر

C--slaughtering knife to be sharp for the purpose of completing the slaughter process and without animal torture. السكين حادة وبدون تعذيب الحيوان

D-- to be slaughtered animal which analyzed eat. مما حلل

E--To be slaughtered at once .الذبح دفعه واحده

F--Be animal alive before slaughter( referring blood and movement explosion after slaughter).الحيوان حي تدفق الدم رفس

For method of slaughter on Islamic way:الحيوانات تذبح

1-- cows, cattle slaughter method is :

A-- When the animal lying on the ground slaughtered along the jugular vein to cut the jugular vein and carotid artery and cutting at the neck area.

B-- When the animal hanging work cut accidental one in the neck area and then after completing the bleeding process separates the head from the body of the carcass.

This method is characterized as give more blood, which can accumulate in the blood streams مجاري خاصة under special place bleeding تحت مكان النزف.

2-- sheep and goats

We cut in the skin in the jugular groove area in the neck and cut jugular vein and carotid artery on the right side and the left and then the head due to the back يرجع للخلفof the destroyedتحطم medulla oblongata.

# Bleeding or slaughter:

Its purpose is to bring out the largest possible amount of blood from the carcass in the shortest possible time, as well as shock achieve this purpose because the bleeding of others well lead to a carcass quickly damage and reduces the quality & storage value of carcass .

The volume of blood in the body of the animal is (1 to 12) of the animal's body weight and to complete bleeding process the animal must be in healthy good & slaughter must be done after being subjected to the process of stunning shock lead to arteries contraction and increase heart function , as well as blood pressure and all these things lead to good bleeding.

Types of bleeding :-

1—Complet (perfect) bleeding

2—Incomplet (in perfect)bleeding (ill bleeding) and can be identified in two ways the naked eye(grossly) and laboratory(chemical tests) .

The most important signs anatomical bleeding unfinished:

1-congestion and the appearance of blood vessels under the skin.

2-Guts internal or internal visceral be congested and flaccid and watery.

3-Veins between the ribs be prominent and congested and clear.

4-Lymph nodes be filled with blood but not overgrown notes clearly pre-scapular lymph nod . 5-Cutting at work in the chewing(Masster) muscle noticed blood flow pieces in place.

6-- Left ventricle of the heart is full of blood.

7-Color is dark carcass.

8-Cutting at work in the armpit will see congestion veins with blood and this test called (Mays test).

Mays test:

Is one of the tests to see bleeding incomplete naked eye through the work of cutting in the armpit area and watch the congestion of blood veins.

## 2. The method of slaughter Jewish:

used in some countries where pigs are slaughtered in this way tingling animal cut one jugular veins in the neck area.

## Slaughtering of animal after death :-

1-Singns of normal incision is not seen.

2-All veins under skin of head filled with blood .3-Color of muscle dark .

4- There is green color in abdomen wall & fat rounded kidney & Liver became super facial .

5--Congested of Lung especially if animal sufficient or animal still full down in water & color of blood become dark .

6—Right vertical fill with blood & then vertical become empty with blood & abdomen cavity contain undesirable odor .

Note:

Wounded animal or infected animal or animal suffering with fever leads to excessive blood case which must differentiate on the status of bleeding where the carcass be congested in the case of excessive blood(hyperemia) and bodily changes are accompanied by clear& pathology and while bleeding incomplete be mechanical and non-diet or without fever .

The first practical material for the health of the meat:

Measure the degree of bleeding method: -

Laboratory there are several ways

1-Test Malachite green test :

Take a piece meat size( 6 g ) and placed in Jaffna and added to( 14 ml ) of water & left for (10) minutes, we take( 7 ml ) of separated and put in the test tube and added a single drop of malachite green solution with a few of shake to the test tube then add the diameter of the solution above hydrogen peroxide(H2O2) concentration( 3% )with Shake the contents of the tube until the foam is made up and then leave the tube for( 20) minutes and recorded Color: -

A-If the color of the solution clear blue means good bleeding

B-- If the color of the solution turbid Green means bleeding accepted incomplete .

C-if the color of the solution Chartreuse (Olive) and turbid mean bleeding incomplete.

2 –Pseudo-- peroxides test :

We take a piece of meat free of blood vessels and placed in Jaffna ceramic and added her Guaiacum solution and add two drops of a solution of hydrogen peroxides If the bleeding perfect or good be bluish green color of the solution, but if the color purple or dark solution the bleeding was unacceptable

3-Reader test:

Test solution attends add (one ml) of the blue to Loflrzin with( 0.5 ml )of Carbol facin diluted to( 40 ml ) of distilled water, taking( 3 gm) of meat minced and placed in a test tube and then added to the meat,( 5 mL )of the solution record, then leave the contents of the tube for(5 minutes) if no solution color change or light green color of the solution, it means that the bleeding is good, but if the color of the solution was green or brown the bleeding are inacceptable.

4-- Extracting hemoglobin test:

In a test tube is placed (5 gm) of meat minced and added her (10ml) of distilled water, shaking the tube well or leave it for (10 minutes) If the color of the solution pink, it means that the bleeding good or acceptable if either the color of the solution dark red van bleeding is incomplete.

5-use pressure device:

Use two slices glass or plastic and put them a piece of meat, and when pressed Goose meat that falls on the filter paper will come out, if the bleeding well, the Minim space be low but if the bleeding is good, the limits of Minim more than (5 cm).

6- Test the filter paper:

We take meat muscle  and muscle work out incision and placed inside of it  the filter paper and leave for (2 minutes.) If the color paper dark  & the space  nomination for  edge , so the bleeding is incomplete.

## Blood collection:

If the blood collects for the purposes of manufacturing such as for animal consumption are collected in streams designed especially for this purpose, but if the blood is used to human purpose combines in especial tanks Sterile arbitrator or completed cover and using sodium citrate solution (5%) or citric acid (0.02%) in the final solution to prevent coagulate of blood clotting after collected .

## Note:

Animals slaughtered manner in Islamic prefers not to collect blood for human purpose due to the parts of the esophagus, and some scientists believe the possibility of connecting the esophagus with special lump hogs out to prevent any foodstuff and the possibility of contamination

Emergency slaughter:

Be in the following cases:

1-like pathological :-- (الحالات المرضية)

a-- severe dyspnea as a result of emphysema rumen(Tympany) b- obstruction of esophagus

c-- Dystocia d-- Milk fever

e-- Acute inflammation of the udder or joints or intestines and others.

2-Accidental fracture: (الحوادث العرضية)

a-Fracture of lambs or pelvic bones. b--wounds, whether superficial or deep during transportation . c-- Dog bite.

Treatment of animals slaughtered made an emergency landing vary depending on the country. Some countries deemed invalid or questionable, while other countries are not taken to accept this carcass if they are accompanied certified with veterinary health .

All animals slaughtering  made an emergency landing in a field must be damaged due to lack of availability of health requirements and slaughtering them Janitorial good bleeding and eviscerate.

In the case of forced  or emergency slaughter the animal must be slaughtered in a manner similar to the Islamic way or the slaughter of animals on the sloping surface and be the head of the sloping bottom and with the pressure on the groin (flank) area and pull the front rolls back one time and at a rate of( 15 times) / minute for (5)minutes.

After the bleeding and remove the entrails directly by making a longitudinal incision between the sternum and pelvis bone then transported carcass with it is hide (skin) to the slaughter house and these carcass, usually she is exposed to damage, which depends on air temperature, cleanliness and speed of bleeding and speed eviscerate.

## Process inflatable air (Air inflation or hide removal ) :

Is the introduction of air through a hole in one of the menus (front and rear), either by mouth or by a machine inflatable sheep, especially in the jungle after hitting a stick on all parts of the body outside air to distribute evenly under the skin.

## Carcass processing Dressing :

After the slaughter of the animal and under complete bleeding there are many processing down to examined carcass . Old was all processing taking place in one place by the same person or the same individuals or group where the animal after bleeding placed at a table of iron bars or tend skin and entrails and carcass lifted from earth .

The slaughtering house in modern each level takes place in place isolated other, for the purpose of processing the carcass fowl stage are :

(1) the stage of bleeding

(2) Stage is the removal or skin removal

(3) Evisceration stage and cutting the carcass animal and attached timer from the rear shock lists.

For cows after the completion of the process of cutting the head, bleeding from a place connected to paragraph-bearing (Atlas) and placed on the dorsal of the  carcass on a place dedicated to splitting or either on the ground or at a table special is hanging and removal the fore limbs  at the knee joint and the same to hind limbs from hock and are removed skin either manually or mechanics by making linear cutting the skin, starting from the neck up to the vulva area along the middle line of the body and then cut along the line of the lists of the front.

After that external genitalia with scrotum and udder still with lymph nodes stay above the udder and still udder and the fat that is around him and then works sternum manually or by an electric saw, as well as an incision in the abdominal cavity in the provision for eviscerate the place works where tend entrails as follows: -

1-Raising esophagus and trachea separated from the .

2-Raising guts dorsal area, either with or without liver .

3- Raise the bowels of the abdominal area, as well as the spleen with the survival of the kidneys in it is position .

4-- Lift the bladder and genitals in other females.

After that carcass is bisected longitudinally into two halves in the spine with a lift depressions upper vertebrae and refines تهذيبthe neck to give carcass appropriate appearance and then are washed carcass clean hot water to reduce the number of microbes on the surface of the sacrificial with the use of less amount of hot water be a degree of ( 70 to 80 c ) for a period of ( 2 minutes) or carcass covers with moisture cloth & the carcasses are placed in chilling room .

## Sheep:

For the processing of carcasses of sheep, suspending from Eccles tendon أوتار اكيلس in the background limb after cutting lists and skinned. skin(dressing) drag it once, or may begin to draw from the front to back and also eviscerate by making a longitudinal incision central abdominal muscles and building the chest area and the pelvic after washing the abdominal area and separates the rectum from the pelvic area after removing the skin completeness and also wash carcass with less amount of warm water and then put it into chilling room .

Foundations that must be followed during the processing of carcasses: الاسس المتبعه بتجهيز الذبائح

1-Must raise the carcass to prevent contamination of ground .

2-- You should not contaminate the carcass while lifting the skin especially in sheep .

3-- Should not open the intestines or stomach near the carcasses & must sent to places dedicated to that .

4-Must provide sanitary conditions of the water used to wash the carcass .

5—Don’t to allow to enter the halls of the slaughter house , but for their workers only .

## Examine or inspection of carcasses:

The purpose of the examination of the carcasses is:

1- To protect the consumer from the disease

2-- Alarm on the quality of the meat . تنبيه على نوعية

3- Protect livestock.حماية الثروة الحيوانية

After examination of carcasses correct examination is determined by the quality of the meat to:

A-- Meat fit for human consumption .

B-- Meat unfit for human consumption .

C-- Meat fit for human consumption after treatment with special transactions.

## Foundations that must be considered in the examination after slaughter:

1--That is examination by a veterinarian

2--Competent to be prepared for examination in that place and under natural lighting, drawing synthetic lighting if necessary

3-- Are not taken to the passage of any part of the carcass only after examination.

4-- Not to mix the guts or head and numbered carcass and accessories well and clearly numbered .

5--Any Notes in the examination before slaughter must take into consideration .
6-- To facilitate routine inspection take three sites : A-- Place to check heads
B-- Place to examine the entrails
C-- Place to examine the carcasses
D--Allocated elsewhere to examine carcasses reserved and doubtful for the purpose of conducting the final examination.

## Cooling meat ( Chilling meat) :

The arrival of muscle degree heat to the extent approach to degree( zero %) and not freeze depending on : A-- The size of carcass

B-- Quantity of the carcass grease(lipid or fat)

C-- Cooling system and degree temperature.

The goal (aim) of reducing the degree of carcass heat so quickly to prepare in order to don't increase the number of m.os or germs that may be found on the surface of the carcass and inside where the temperature is high (38—39c ) and be appropriate for the growth and multiplication of bacteria and thus corruption or caused meat spoilage .

Cold air used by special fans to cool the carcass because the situation or put carcass directly into room the temperature of it between (zero ---- 3 c) lead to the intensification or condensation of the moisture out and change shape as normal and the creation of the center is suitable for the growth of germs or m.o .

Served basis carcasses of cows storage for( 15 day) at temperature ( -1 c) and relative humidity (80--- 90%) with the movement of air within the limits of( 0.02 m./sec) .

# Aging:

The natural enzymes in the meat especially ( cathaspin )or enzymes produced by some bacteria interactions occur some meat after slaughter to make it softer or flay and jaws with special of taste and smell the and include bloating happening to glycogen and lyses to fibrous muscle &it is contain . Period of aging depending on spp & degree of fatness & also condition of animal before slaughtering & temperature of environment that carcass present init if temp. of environment little it need large period for aging so chilling of carcass between (1—3 c) we can storage for (1—20 days) , while chilling carcass in ( 2—3c) we can storage it between (10—20 days) ,while we can storage carcass for (24 hours) if we use (5—7c) .

If carcass cutting to multiple pieces this will be depress period of aging for (9 days) or little .