

# Pet Related infections

Or “can I catch something from Fido?”



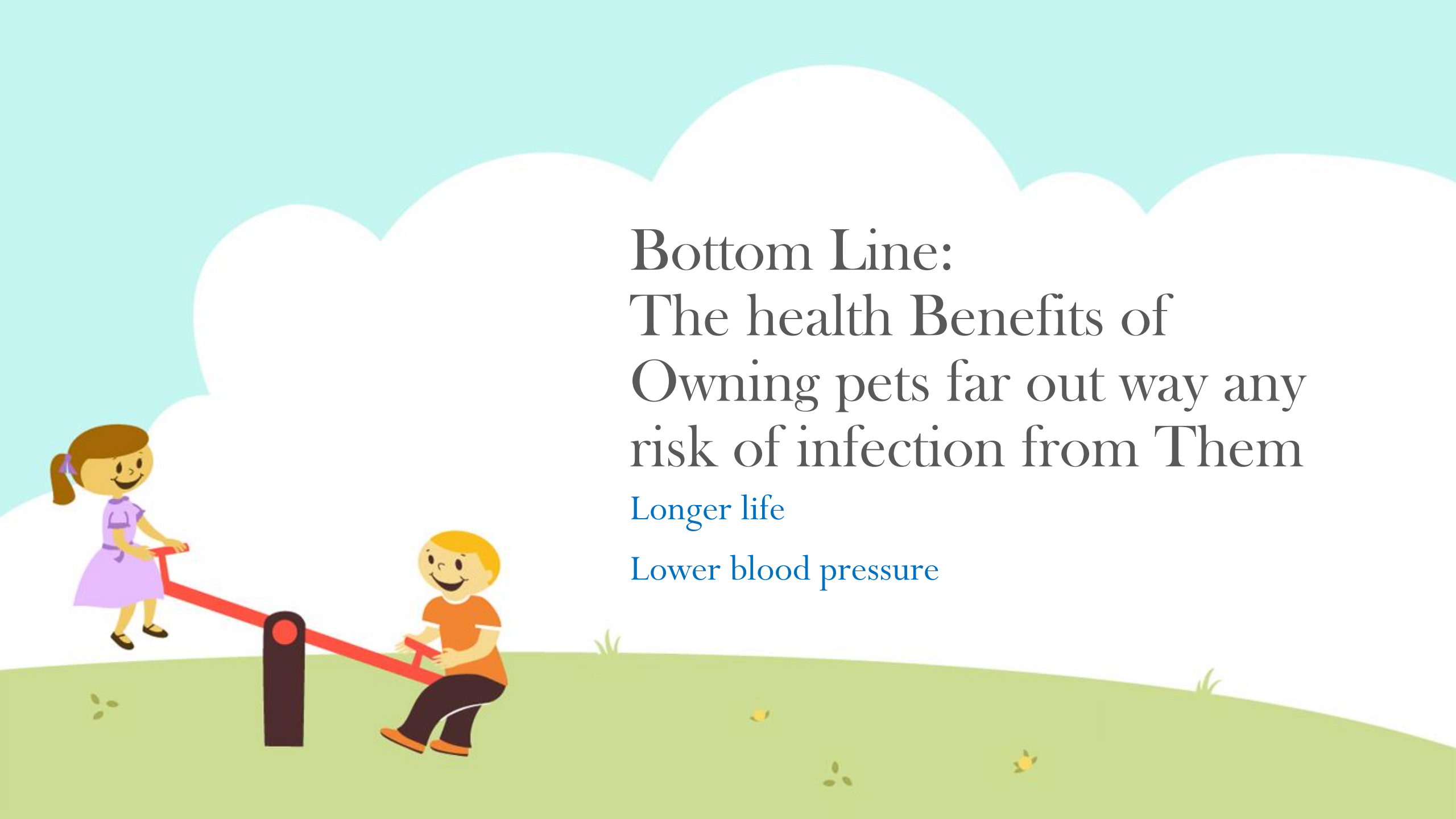
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# Objectives: at the end of this lecture you will:

1. Know what infections can be transmitted from pets to humans
2. Recommend or start appropriate treatment for each infection
3. Know how each infection is transmitted and how to avoid the transmission of from pets to humans or even vice versa



An illustration of a young girl with brown hair in a ponytail, wearing a purple dress, and a young boy with blonde hair, wearing an orange shirt and dark pants, playing on a red seesaw in a green park. The background features a light blue sky with white, scalloped-edged clouds. The text is positioned on the right side of the image.

Bottom Line:  
The health Benefits of  
Owning pets far out way any  
risk of infection from Them

Longer life

Lower blood pressure

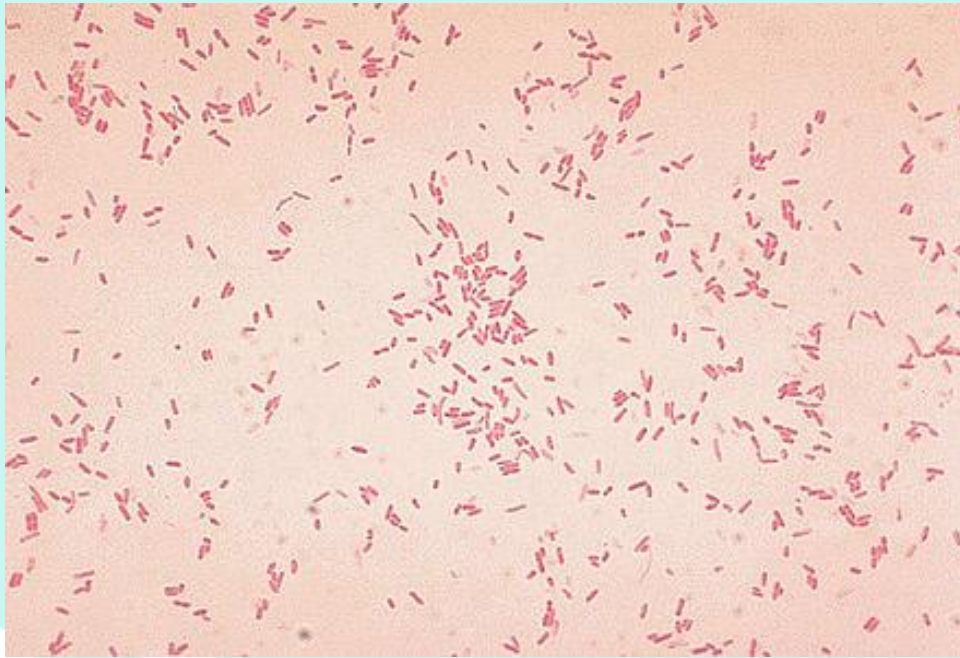


**FISH**

**fresh and salt**



# Aeromonas spp



Usually A hydrophilia

- From Fresh water \
- Gastroenteritis or wound infection  
May require extensive debridement  
or rarely amputation
- Medicinal leeches
- Ciprofloxacin, Levaquin, TMP-SMX  
or Cefepime





Do NOT do this  
at home!!!

Caption



# Vibrio vulnificus

Salt or brackish water



- Usually wound infection or sepsis
- 50% mortality in those with cirrhosis also from Gastroenteritis from shellfish
- Many need debridement
- Doxycycline or minocycline
- Also can use Ciprofloxacin or Levaquin





# Mycobacterium marinum



“fish tank granuloma”

Rapid grower for a mycobacterium

Look for nodules

May need debridement

Clarithromycin 500 BID plus  
Ethambutol 25mg/kg q 24 or  
Rifampin 600g plus Ethambutol daily  
for at least 1 to 2 months after  
resolution

For very mild early disease can use  
minocycline, Doxycycline daily or  
TMP-SMX bid



# Streptococcus iniae



- Lethal to fish populations with at least 50% mortality
- Rare in humans mostly in immunocompromised humans
- Often seen in Asian fish handlers
- Treatment similar to other strep with Penicillin being the drug of choice



# Salmonella sp (typhi, paratyphi and choleraesuis)

Gastroenteritis and dysentery also can rarely get from fish

Ciprofloxacin, Levaquin or Ceftriaxone for 7-14 days



# BIRDS



# Enemy number one





# Enemy number 2



# Fungal infections from pigeons

## Cryptococcosis

- *Cryptococcus gattii* and *neoformans*
- Pulmonary and CNS infections
- Infection comes from breathing in dust or from open wounds
- worse in immunocompromised patients
- Diagnosis by antigen in blood
- Azoles or Amphotericin B

## Histoplasmosis

- From pigeons or bats
- Very common in Midwest
- Usually asymptomatic
- Again symptomatic in immunocompromised patients
- Can find in bone marrow
- Diagnosis through urine antigen
- Treatment depends on locations and severity of infection





# Parrot Fever (Psittacosis)

- Also seen from small bird pets (parakeet, canaries)
- Pneumonia
- *Chlamydia psittaci*
- Treatment like other *Chlamydia* tetracycline
- Or minocycline



# SMALL MAMMALS



# Gastrointestinal illnesses

- *Campylobacter jejuni* and *coli*
- Rare from rodents: usual bacterial diarrhea with cramps, abdominal pain, fever lasts 2-5 days
- rarely also can be a cause of Guillain-Barre
- Treatment is Azithromycin 500m daily for 3 days, 14 days if bacteremic
- Do NOT use Ciprofloxacin or Levaquin first line due to common resistance in other countries



# Giardiasis (G lamblia)



“Beaver Fever

”Protozoan intestinal parasite

Diagnose with stool antigen

Acute or chronic diarrhea with malabsorption and weight loss not invasive

Treat with Tinidazole 2gm x1

Nitazoxanide 500mg bid x 3 days

Metronidazole 250 tid for 5-7 days

Albendazole 400mg daily x 5 days

Combination for IC host

# Mites

Cheyletiellosis (Cheyletiella sp)  
“Walking Dandruff”  
Rabbit fur mite



Sarcoptic Mange  
Seen with guinea pigs  
Only minor skin irritation in humans



# Rat Bite Fever



- Spirillum minus (Sodoku)
- Fever and wound can last for months
- Treatment is penicillin
  
- Streptobacillus moniliformis
- High fever, rigors, joint pain, septic arthritis
- Can find bacterium in blood and joint fluid
- Also treat with Penicillin or Doxycycline if allergic



# Viral infections

- **MONKEY POX**
- not found in the USA
- In monkeys and small mammals in Central and south Africa
- Gambian giant rat and Funisciurus squirrels
- Supportive treatment



# Lymphocytic Choriomeningitis (LCMV)

- Hamsters can become infected from common house mice
- Symptoms of viral meningitis in 2 phases with headache, body aches, fever, N/V anorexia
- Second phase can include temporary encephalitis
- Most recover less than 1% mortality
- Treatment is supportive with NSAIDs and occasionally steroids





# Other

- Ringworm
- Salmonella rare from urine, saliva, droppings
- Pasteurella ( *Pasteurella multocida* ) – Rabbit sniffles



# Ferrets



# Common infections from Ferrets

- Campylobacter
- Giardia
- Rabbit fur mites
- Influenzas
  - From ferret to human but also human to ferret
  - No vaccine available for Ferrets



# CATS



# The list expands.....

- Campylobacter
- Giardia
- Salmonella
- Mites
- Ringworm
- Pasteurella multocida
- Rabies (if not vaccinated- pet or person)
- MRSA (treat with usual MRSA drugs TMP/SMX, doxycycline, or IVs)



# And expands.....

- Hookworm – treat with Albendazole 300mg daily or Mebendazole for 3 days or one dose and repeat 6 months in anti-worming programs
- Roundworm (Strongyloidiasis) Ivermectin 200mg daily for 2 days may need up to 2 weeks in IC or Albendazole
- Toxocara cati Albendazole or Mebendazole can be visceral or ocular larva migrans
  - Ocular Prednisone and Triamcinolone drops for 2 weeks may need surgery
  - Visceral- Albendazole 400mg bid x 5 days with or without prednisone 60mg/day
    - Or Mebendazole 500mg daily for 3 weeks



# And more

- Echinococcosis (hydatid cyst) Albendazole for 30 days and surgical resection make sure on Albendazole before and after can aspirate and inject the cyst if of only one Post op Albendazole only for pulmonary cysts
- Plague (*Yersinia pestis*) Associated with prairie dogs increase seen in Vietnam war treat with Streptomycin, doxycycline, gentamicin or fluoroquinolones
- Cryptosporidiosis Nitazoxanide 500mg bid for 3 days IC correct the IC state
- Toxoplasmosis very common also from eating raw meat
  - Choriooretinitis Pyrimethamine 200mg then 50-75 mg daily+ Sulfadiazine 1gm qid + Folic acid 5-20mg 3x week and prednisone 1mg/kg/day
  - In Aids with CD4 below 200 prophylaxis with TMP/SMX DS 1 daily



# Cat scratch Fever





# Bartonella henselae

- 40% of cats (especially kittens) colonized with it
- Self limited regional lymphadenitis
- Positive antibody test for B henselae
- If need to treat can use Azithromycin 500mg x1 dose then 250 daily for 4 days
- Disseminated Doxycycline 100mg bid + Rifampin 300mg bid for 4-6 weeks



# Mans best Friend?



# Some common players

- Campylobacter      plague
- Dog tapeworm      MRSA
- Hookworm      Echinococcosis
- Roundworm      Giardia
- Rabies      Cryptosporidium
- Ringworm
- Salmonella
- mange



# Tick Bourne

Ehrlichiosis

H Chaffeensis (HME) Lone star  
tick

Anaplasma phagocytophilum

HGA Ixodid tick

Lyme disease

RMS

Doxycycline for 3 to 21 days



# Dog bite related

*Pasteurella multocida*- normal flora of dogs and cats ( also from scratches) always R to cephalosporins but S to PCN DOC is Amox-Clav

May have to cover human skin flora also (staph and strep) may need to add Doxycycline or IV

Pcn allergic use Doxycycline or Levaquin

*Capnocytophaga* slow growing bacteremia also normal flora of cats and dogs- overwhelming sepsis in Alcoholics and IC patients

Treatment- mild Amox-Clav Sepsis Pip/Tazo or Meropenem



# Horses

- Previously seen:

- Salmonella

Ringworm

Ehrlichiosis

Lyme disease

MRSA

Rabies

Cryptosporidiosis



# Viral Mosquito Bourne

- West Nile virus
- Eastern Equine encephalitis
- Western Equine encephalitis
- Southern Equine encephalitis
- Venezuelan Equine encephalitis
  - vaccines available for horses
  - Treatment is supportive





## Bacterial infections

Anthrax-*Bacillus anthracis*

3 forms inhalational

Gastrointestinal  
cutaneous

Animals vaccinated now

Can be biological weapon

Ciprofloxacin, meropenem, monoclonal ab

Human vaccine for military

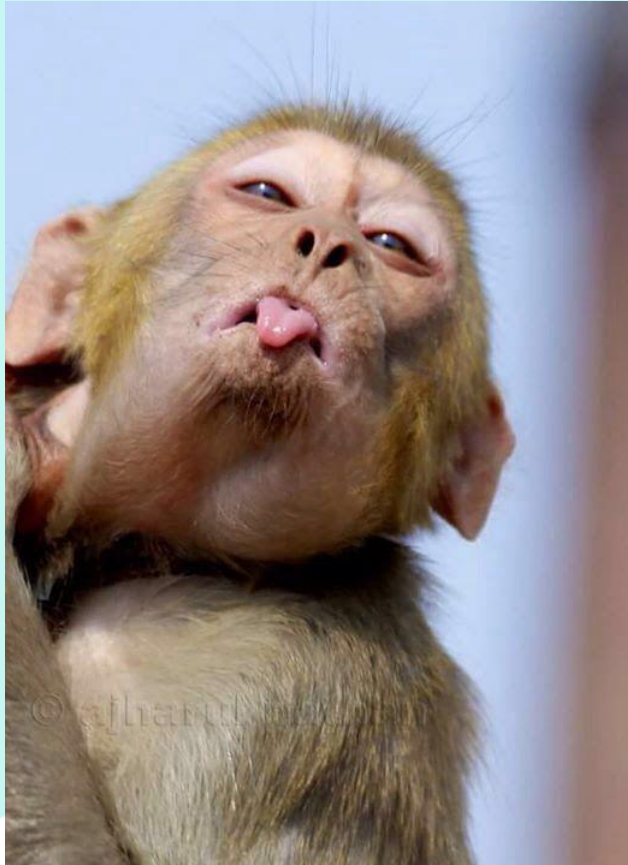
*Brucella melitensis* and *abortus*

Doxycycline, gentamicin, rifampin





# Monkeys



- Human herpesvirus 1
- Fatal encephalitis from monkey bite  
no cure or prevention available
- Humans and chimpanzees get  
same illnesses which can be passed  
from one to the other





