

# VISUAL ANEMONICS

# Microbiology

**Legionella pneumophila**  
www.medinaz.com

Use silver stain

Gram -ve rod

Grow on charcoal yeast extract

Medium needs iron and cysteine

Aerial transmission (eg. hot water tanks)

**Lyme Disease**  
www.medinaz.com

Bell's palsy (B/L)

Erythema migrans

Arthritis

K(c)ardiac block

"BEAK"

Bell's palsy (B/L)

Cardiac block

Tick

Arthritis

Erythema migrans

**Cytomegalovirus infection in Newborn**  
www.medinaz.com

CMV = CMV

periventricular calcification

microcephaly

mental retardation

Chorioretinitis

Deafness

**Klebsiella**  
www.medinaz.com

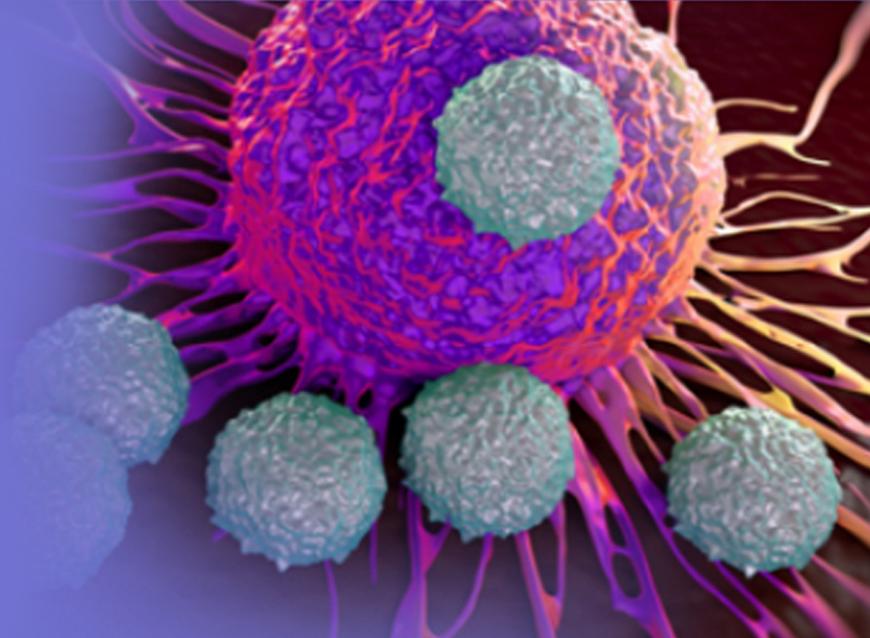
Gram -ve rod

Aspiration pneumonia

Alcohol

Current sputum

Abscess in lungs and liver



100+ slides



Copyright © 2018 by Nazmul Alam. All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

## TERMS OF USE

This is a copyrighted work and Medinaz and its licensors reserve all rights in and to the work. Use of this work is subject to these terms. Except as permitted under the Copyright Act of 1976 and the right to store and retrieve one copy of the work, you may not decompile, disassemble, reverse engineer, reproduce, modify, create derivative works based upon, transmit, distribute, disseminate, sell, publish or sublicense the work or any part of it without Medinaz's prior consent. You may use the work for your own noncommercial and personal use; any other use of the work is strictly prohibited. Your right to use the work may be terminated if you fail to comply with these terms.

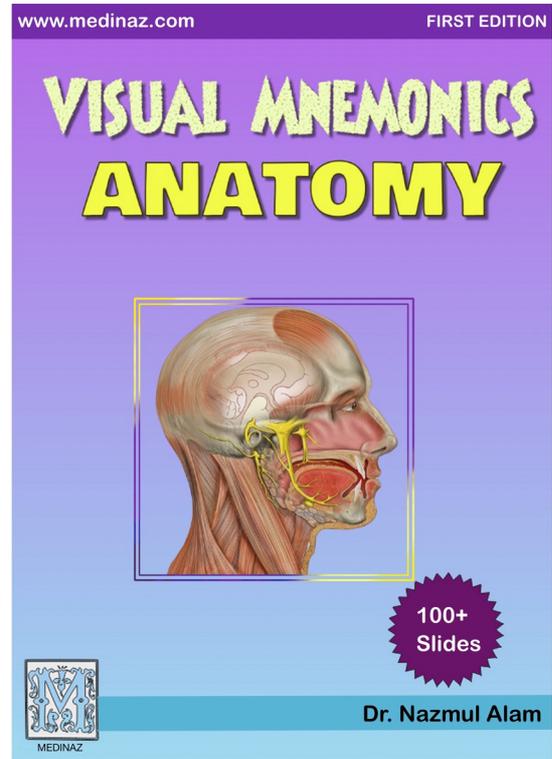
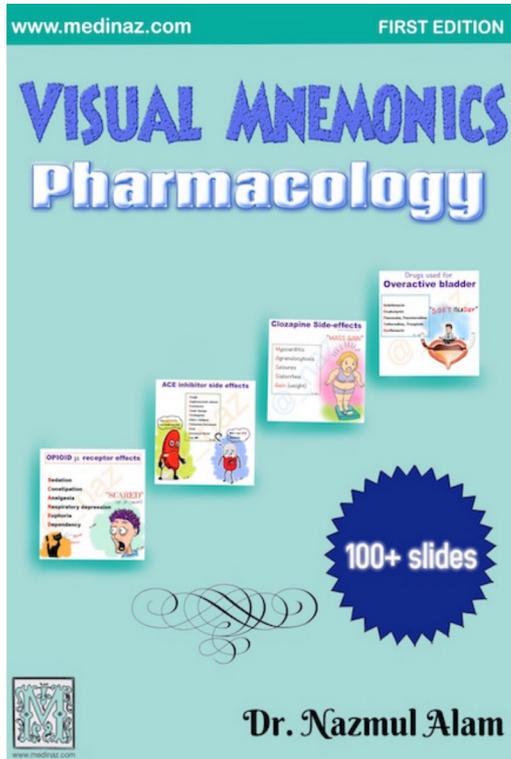


# Contents

- **BACTERIOLOGY**
- **VIROLOGY**
- **MYCOLOGY**
- **PARASITOLOGY**
- **IMMUNOLOGY**
- **MISCELLANEOUS**



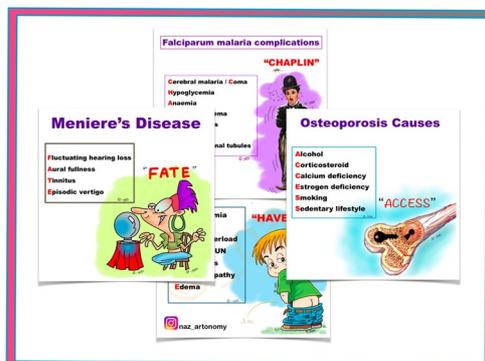
Visit my website for other mnemonic books  
[www.medinaz.com](http://www.medinaz.com)



WWW.MEDINAZ.COM

FIRST EDITION

# Visual Mnemonics (MEDICINE)



BY DR.NAZMUL ALAM



[www.medinaz.com](http://www.medinaz.com)



# **BACTERIOLOGY**





# Actinomyces israelii

www.medinaz.com

Actinomyces **israelii** produces  
**yellow** "sulfur" granules

© - MED

Israel has **yellow sand**

© - MED



www.medinaz.com

**S aureus** produces **yellow** pigment  
**Aureus** (Latin) = **gold** which is **Yellow**

© - MED

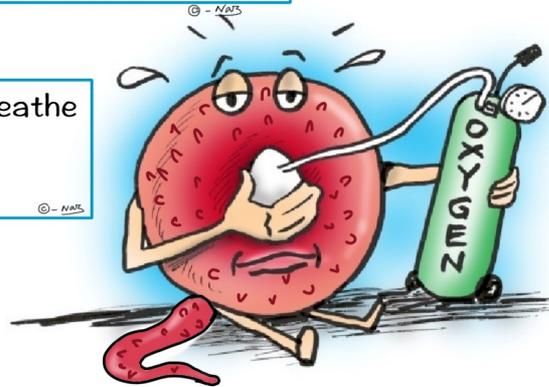




# Anaerobes

- C**lostridium
- B**acteroides
- F**usobacterium
- A**ctinomyces israelii

Anaerobes **C**an't **B**reathe  
Fresh **A**ir



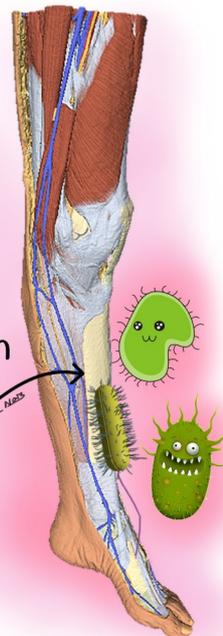
## Bacterial Transformation

[www.medinaz.com](http://www.medinaz.com)

Caused by...

- S** pneumoniae,
- H** influenzae type b
- N**eisseria

“attack on  
**SHiN**”



[www.medinaz.com](http://www.medinaz.com)



# Botulism Symptoms

www.medinaz.com

**D**iplopia  
**D**ysarthria  
**D**ysphagia  
**D**yspnea

“4 **D**'s”



# Catalase-positive Organisms

www.medinaz.com

**N**ocardia  
**B** cepacia  
**P**seudomonas  
**L**isteria  
**A**spergillus  
**C**andida  
**E** coli  
**S**taphylococci  
**S**erratia  
**H** pylori

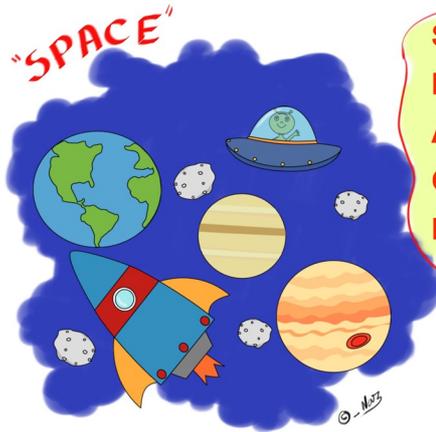
“Cats Need Beautiful **PLACESS**  
with **H**uman”



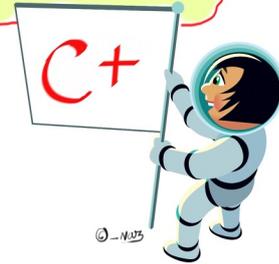
www.medinaz.com



## CATALASE +VE ORGANISMS



**S**taphylococcus aureus  
**P**seudomonas  
**A**spergillus  
**C**andida  
**E**nterobacter

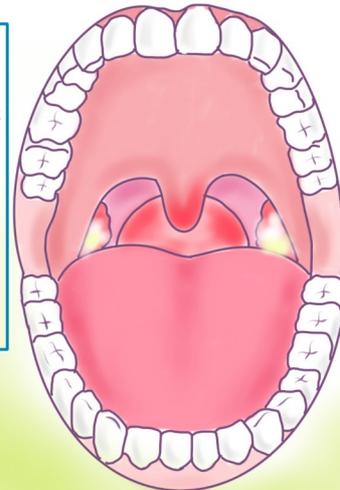


## Corynebacterium diphtheriae

[www.medinaz.com](http://www.medinaz.com)

“**M**ust **P**ronounce  
**A**BC**D**E**F**G”

**M**etachromatic granules  
**P**seudomembranous pharyngitis  
**A**DP-ribosylation  
 $\beta$ -prophage  
**C**orynebacterium **D**iphtheriae  
**E**longation **F**actor 2  
**G**ranules



[www.medinaz.com](http://www.medinaz.com)

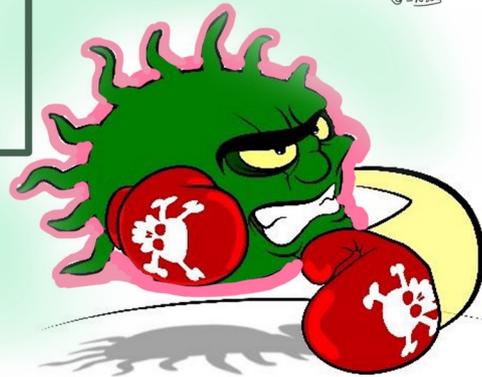


## Encapsulated Organisms

**B. anthracis**  
**Klebsiella**  
**Bacteroids, Bordetella**  
**H. influenzae**  
**S. pneumonia**  
**Pseudomonas**  
**Neisseria**  
**Cl. perfringes**  
**Cryptococcus,**  
**Cl. butyricum**

Bad Killer Bacteria Has  
Some Pretty Nice  
Carbohydrate Capsule

© - N25

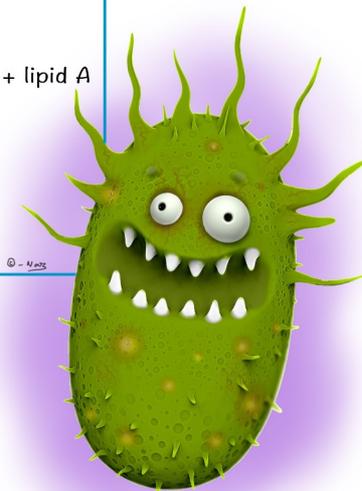


## ENDOTOXIN

www.medinaz.com

Edema  
Nitric oxide  
DIC/Death  
Outer membrane  
TNF- $\alpha$   
O-antigen + core polysaccharide + lipid A  
eXtremely heat stable  
IL-1 and IL-6  
Neutrophil chemotaxis  
Shock

“ENDOTOXINS”



© - N25



www.medinaz.com



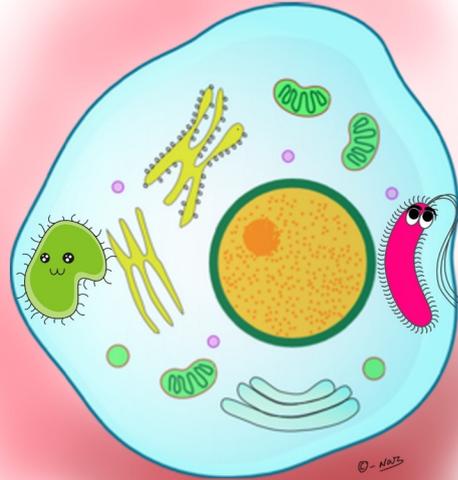
## Facultative Intracellular

**S**almonella  
**N**eisseria  
**B**rucella  
**M**ycobacterium  
**L**isteria  
**F**rancisella  
**L**egionella  
**Y**ersinia pestis

© - Naz

Some Nasty Bugs May  
Live Facultatively

© - Naz



© - Naz

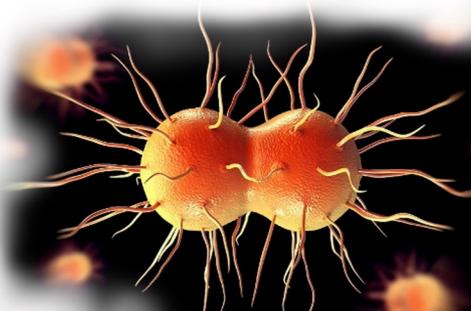
## Gonococci Vs Meningococci

[www.medinaz.com](http://www.medinaz.com)

**G**onococci acidify **G**lucose.

**M**eningococci acidify **M**altose (and glucose).

© - Naz



[www.medinaz.com](http://www.medinaz.com)



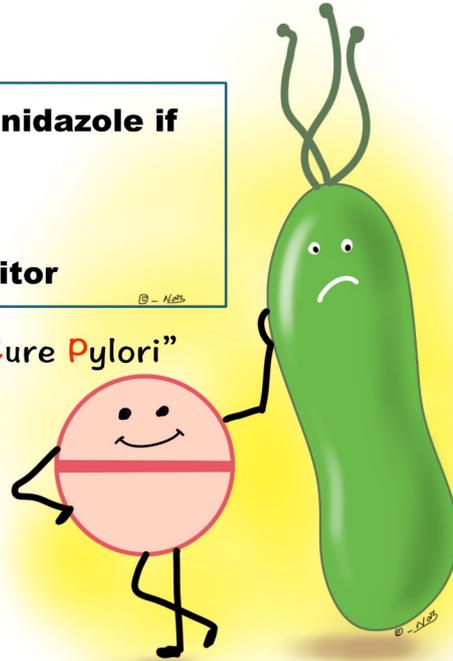
# Helicobacter pylori

www.medinaz.com

Triple therapy..

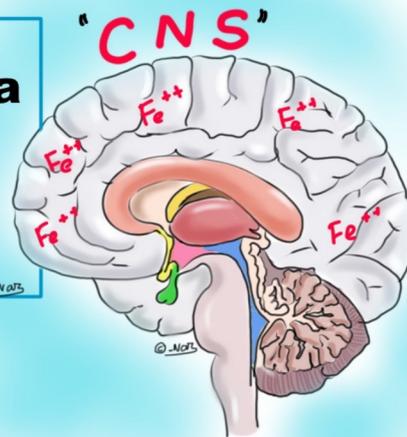
**A**moxicillin (metronidazole if  
penicillin allergy)  
**C**larithromycin  
**P**roton pump inhibitor

“Antibiotics Cure Pylori”



## Iron is required for the growth of...

**C.** diphtheria  
**N**eisseria  
**S**higella



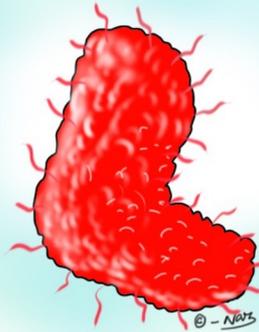
www.medinaz.com



# Klebsiella

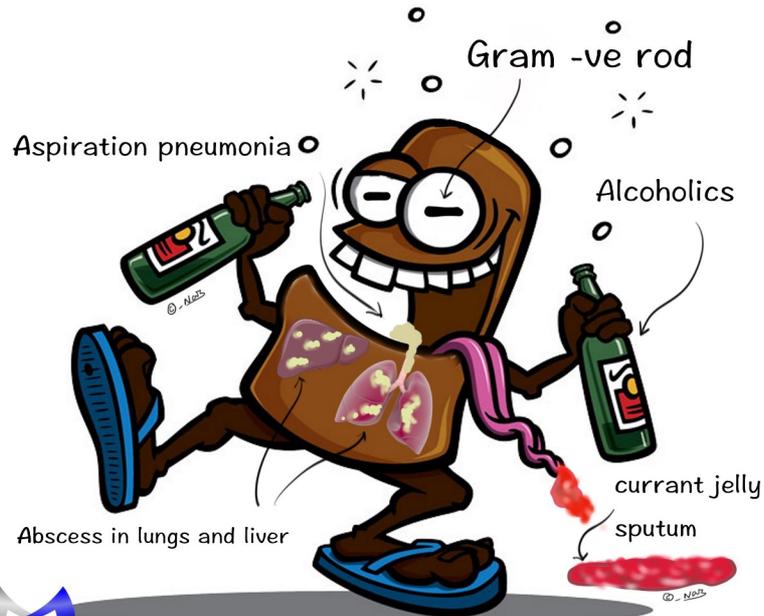
4 A's

**A**spiration pneumonia  
**A**bscess in lungs & liver  
**A**lcoholics  
**d**i**A**betics



# Klebsiella

[www.medinaz.com](http://www.medinaz.com)



[www.medinaz.com](http://www.medinaz.com)

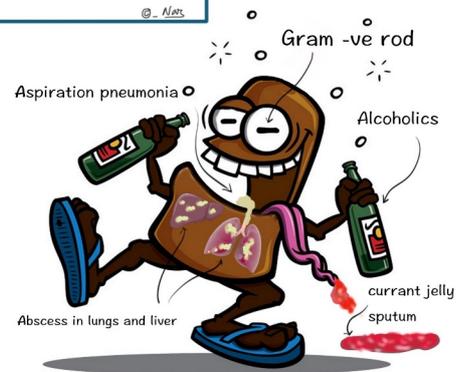


# Klebsiella

www.medinaz.com

**A**spiration pneumonia  
**A**bscess in lungs and liver  
**A**lcoholics  
**D**i**A**betics  
**C**urr**A**nt jelly sputum

5 A's

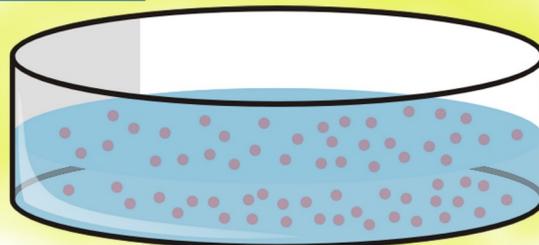


# Lactose-fermenting enteric bacteria

www.medinaz.com

**C**itrobacter  
**K**lebsiella  
**E** coli  
**E**nterobacter  
**S**erratia

Test with  
MacCon**K**EE'S agar

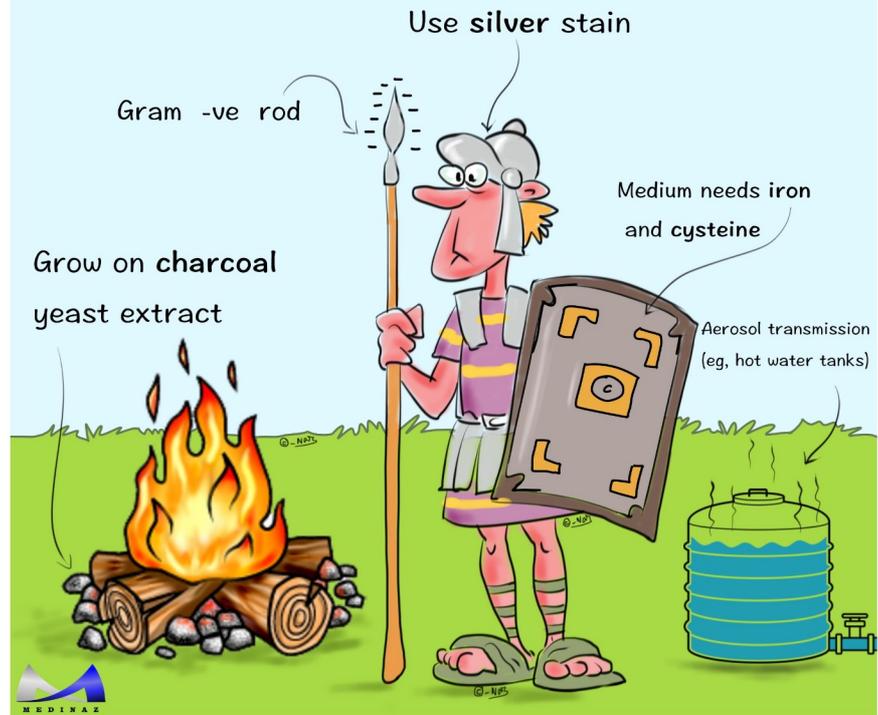


www.medinaz.com



# Legionella pneumophila

www.medinaz.com



## Leptospirosis is associated with..

www.medinaz.com

Rat



Rainfall

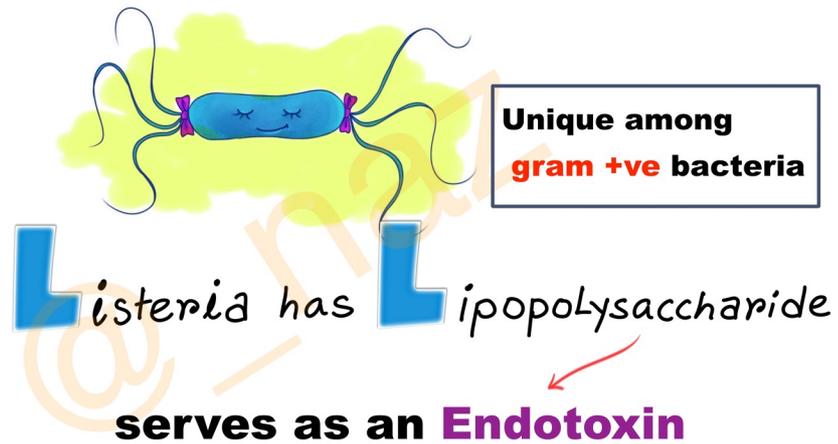


3R

Rice field



www.medinaz.com



### Obligatory Intracellular Organisms

It's **R**Really **C**Cold outside  
**R**Rickettsia and **C**Chlamydia  
can't make  
own **ATP**





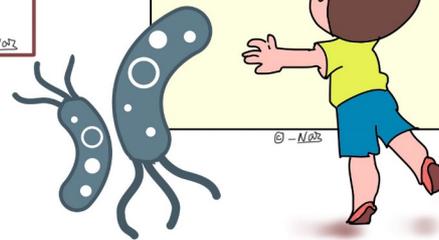
## Oxidase Positive Organisms

www.medinaz.com

H. pylori  
Legionella pneumonia  
Pseudomonas  
Vibrio  
Neisseria  
Pasturella  
Brucella

© - Noiz

"He Loves Painting Very  
Nice Picture on Building"

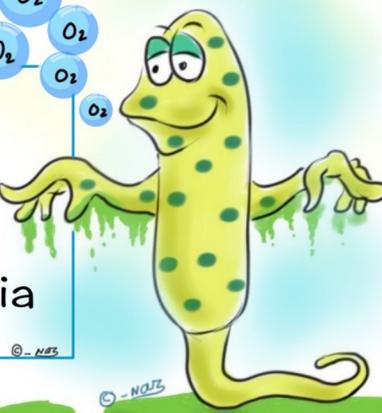


© - Noiz



## Pseudomonas aeruginosa

Pseudomonas  
AERuginosa  
↙  
AERobic bacteria



© - Noiz

© - Noiz

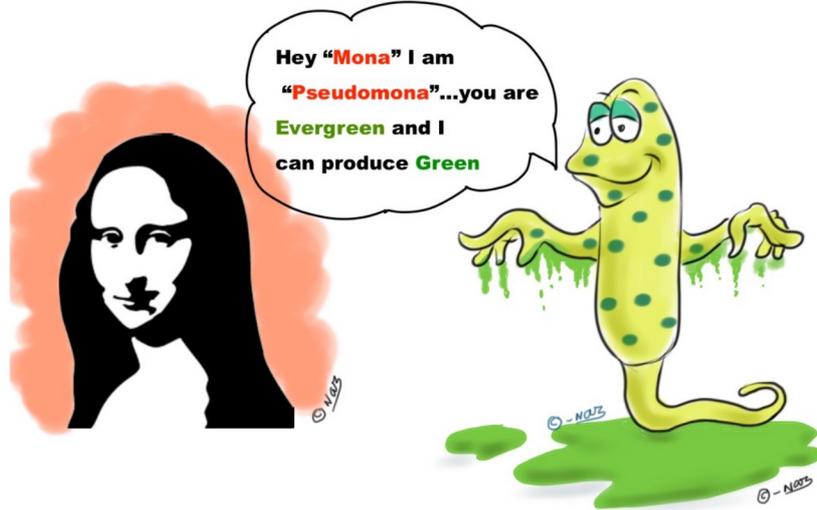
© - Noiz



www.medinaz.com



# Pseudomona



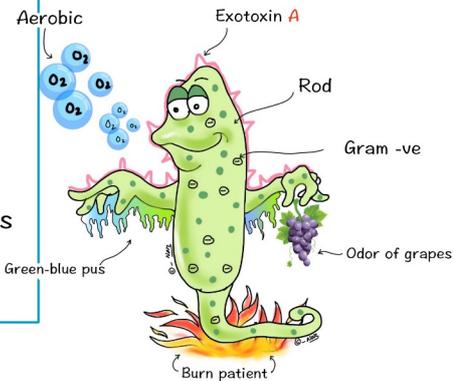
**Pseudomona aeruginosa**  
**can produce Green pus**

## Pseudomonas aeruginosa

www.medinaz.com

- Aerobic
- Exotoxin A
- Rod / Resistance
- UTIs, burns, injuries
- Green-blue pus
- Iron-containing lesions
- Negative gram
- Odor of grapes
- Slime layer in CF patients
- Adherin pili

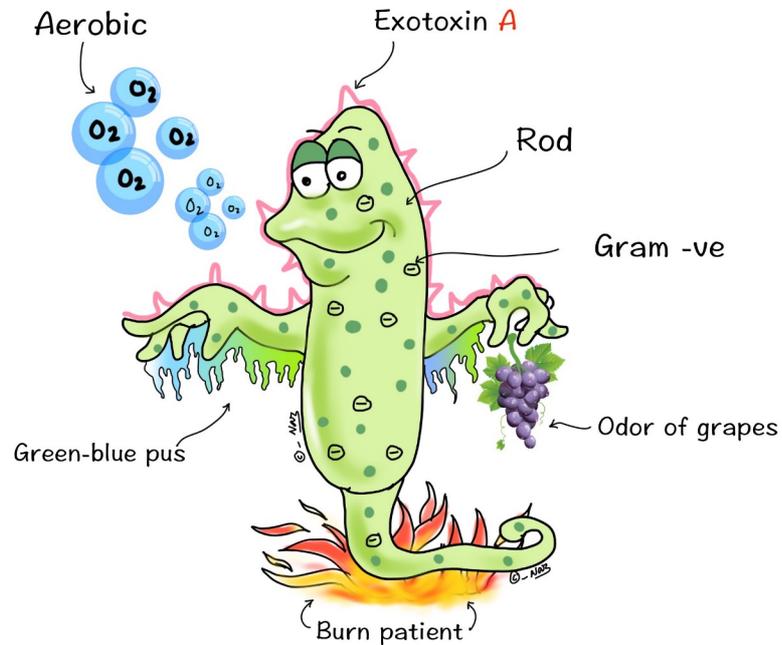
### “AERUGINOSA”





# Pseudomonas aeruginosa

www.medinaz.com



## Pseudomonas aeruginosa Treatment

www.medinaz.com

- Carbapenems
- Aminoglycosides
- Monobactams
- Polymyxins (eg, polymyxin B, colistin)
- Fluoroquinolones (eg, ciprofloxacin, levofloxacin)
- ThIRd- and fourth-generation cephalosporins (eg, ceftazidime, cefepime)
- Extended-spectrum penicillins (eg, piperacillin, ticarcillin)

© - Not5

“CAMPFIRE”



www.medinaz.com



## Pseudomonas aeruginosa Produces

www.medinaz.com

**P**hospholipase C (degrades cell membranes)

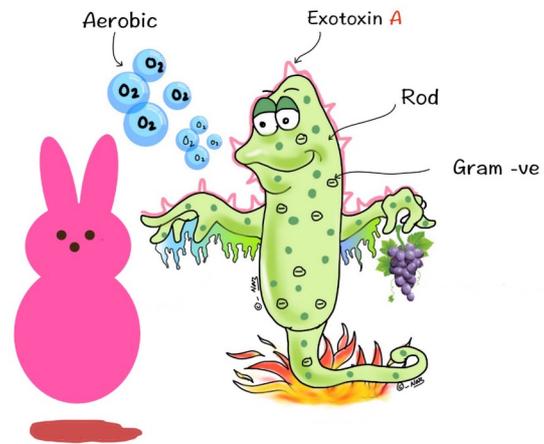
**E**ndotoxin (fever, shock)

**E**xotoxin A (inactivates EF-2)

**P**igments: pyoverdine and pyocyanin  
(blue-green pigment)

CHILLIN' WITH MY

**PEEP**



## Shigella

www.medinaz.com

**F**ingers



**F**lies



**F**ood



**F**eces



**4 F**



www.medinaz.com



## Staphylococcus aureus causes

www.medinaz.com

- S**kin infections
- O**steomyelitis
- F**ood poisoning
- T**oxic shock syndrome
- P**neumonia
- A**cute endocarditis
- I**nfective arthritis
- N**ecrotizing fasciitis
- S**epsis

“SOFT PAINS”



## Streptococcus pneumoniae

www.medinaz.com

Most common cause of

- M**eningitis
- O**titis media (in children)
- P**neumonia
- S**inusitis

Mnemonic

**MOPS** can spread  
**pneumonia**



www.medinaz.com



## Streptococcus pyogenes cause

www.medinaz.com

“NIPPLES”

Necrotising fasciitis & myositis

Impetigo

Pharyngitis

Pneumonia

Lymphangitis

Erysipelas & cellulitis

Scarlet fever, Streptococcal TSS



## Zoonotic bacteria

www.medinaz.com

“Big Bad Bugs  
Form Yellow Pus”

Bartonella

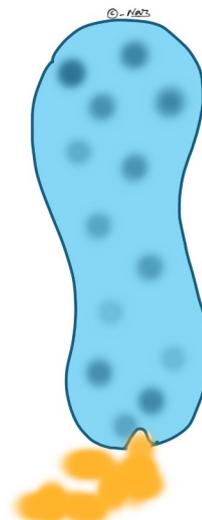
Borrelia burgdorferi

Brucella

Francisella tularensis

Yersinia pestis

Pasturella



www.medinaz.com



# **VIROLOGY**





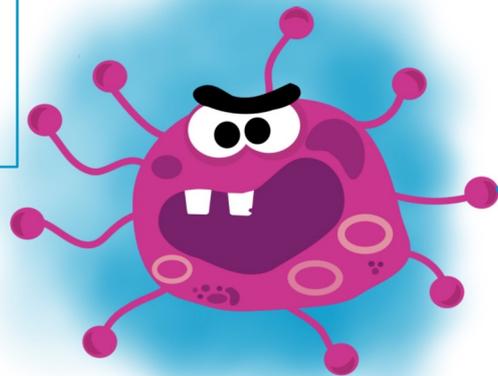
## Virus having segmented Genome

www.medinaz.com

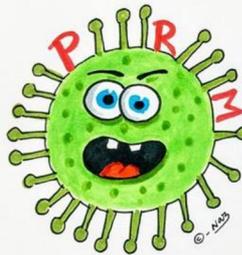
- Picornavirus
- Arenaviridae
- Reoviridae
- Bunyaviridae
- Orthomyxoviridae

“PARBO virus”

© - 2022



PaRaMyxo Virus



- Parainfluenza
- RSV
- Rubeola
- Mumps

Orthomyxo virus → Influenza



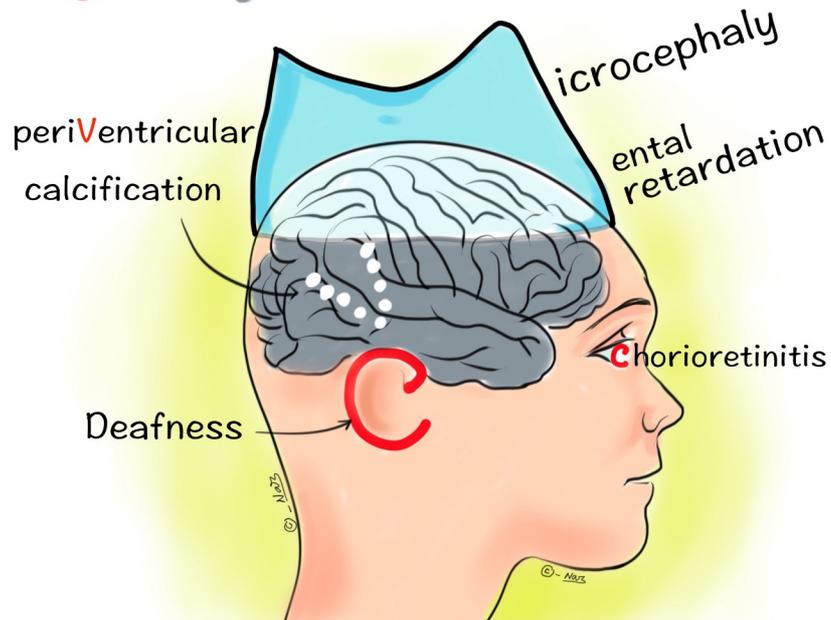
www.medinaz.com



## Cytomegalovirus infection in Newborn

www.medinaz.com

C M  = CMV



EBV = Heterophile **positive**

CMV = Heterophile **negative**

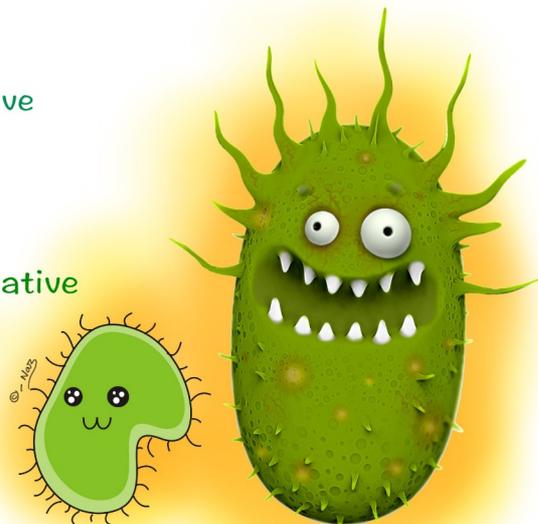
www.medinaz.com

EBV

positive

CMV

negative



www.medinaz.com



## Common Cold Viral Causes

www.medinaz.com

Paramyxovirus  
Rhinovirus  
Influenza virus  
Myxovirus  
Adenovirus

“common cold PRIMARily  
caused by”



 naz\_artonomy

## B19 Virus

www.medinaz.com

**B**abies (5th disease,  
infectiosum erythematosa)  
**B**lack Bleeders (sickle cell anemics  
- aplastic anemic crisis)  
**B**earing Babies [pregnant women]  
(hydrops fetalis)

3 **B**'s



www.medinaz.com

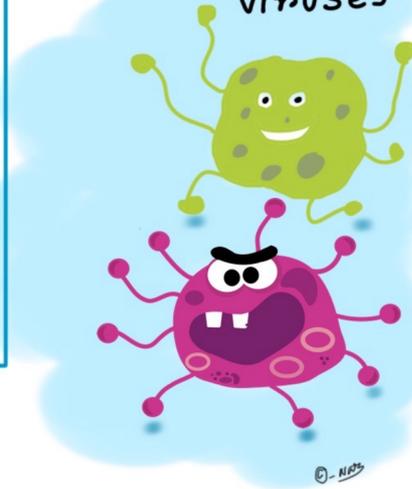


# DNA Viruses

**H**epadna virus  
**H**erpes virus  
**A**deno virus  
**P**ox virus  
**P**arvo virus  
**P**apova virus

© - NDS

"**HHAPPP**<sub>y</sub>  
Viruses"



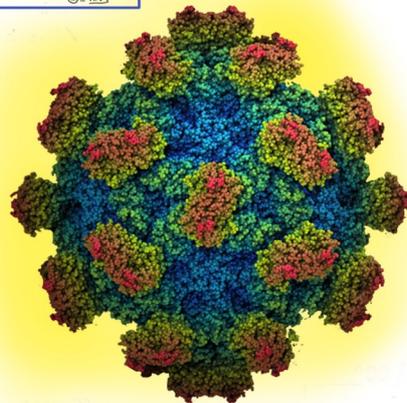
© - NDS

# Hepatitis **A** virus

[www.medinaz.com](http://www.medinaz.com)

**A**symptomatic  
**A**cute  
**A**lone (No carrier state)

© - AMES



[www.medinaz.com](http://www.medinaz.com)



# Hepatitis **B** virus

[www.medinaz.com](http://www.medinaz.com)

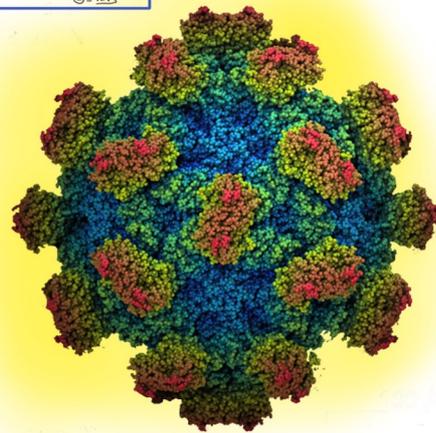
Transmission

**B**lood

**B**aby- making (sexual)

**B**irthing (perinatal)

© - AMES



# Hepatitis **C** virus

[www.medinaz.com](http://www.medinaz.com)

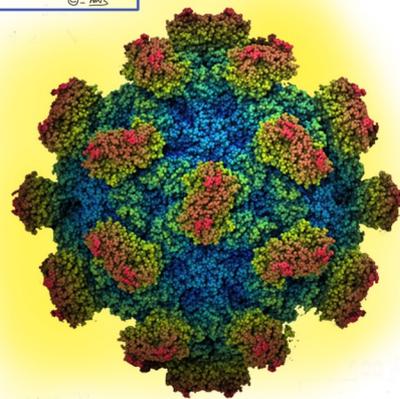
**C**irrhosis

**C**arcinoma

**C**hronic

**C**arrier state (very common)

© - AMES



[www.medinaz.com](http://www.medinaz.com)

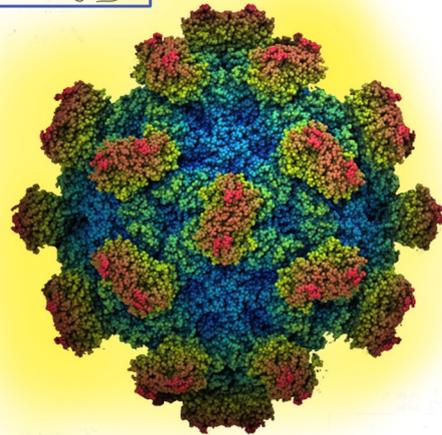


# Hepatitis **D** virus

[www.medinaz.com](http://www.medinaz.com)

**D**efective virus  
**D**epends on  
**HBV HBsAg coat for**  
**entry into hepatocytes**

© - AMES



# Hepatitis **E** virus

[www.medinaz.com](http://www.medinaz.com)

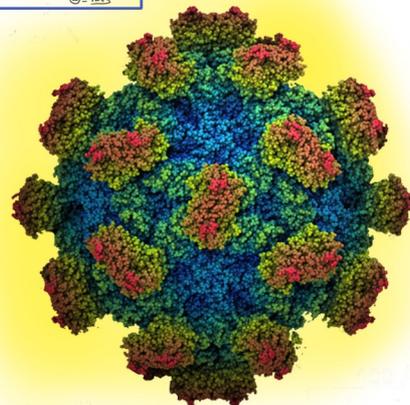
**E**xpectant (pregnant)

(Fulminant hepatitis in women)

**E**nteric

**E**pidemic

© - AMES



[www.medinaz.com](http://www.medinaz.com)



# HIV Infection

www.medinaz.com

Four stages of untreated infection:

**F**lu-like (acute)

**F**eeling ne (latent)

**F**alling count

**F**inal crisis



# Measles (rubeola)

www.medinaz.com

**C**ough

**C**oryza

**C**onjunctivitis

“3 C’s”



www.medinaz.com



## Mumps Symptoms

www.medinaz.com

**P**arotitis  
**O**rchitis  
**a**septic **M**eningitis  
**P**ancreatitis

“Mumps makes your parotid glands and testes as big as **POM-Poms**”



## Naked RNA Viruses

www.medinaz.com

**C**aliciviridae

(Norwalk virus)

**P**icornaviridae

(Enterovirus, Poliovirus, Cocksackievirus)

**R**eoviridae

(Reovirus, Rotavirus)

“naked **CPR**”



www.medinaz.com

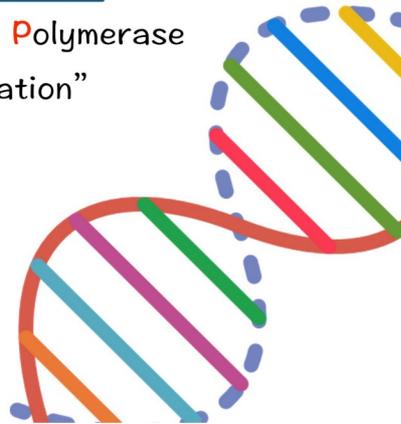


## Negative-stranded viruses

www.medinaz.com

**Arenaviruses**  
**Bunyaviruses**  
**Paramyxoviruses**  
**Orthomyxoviruses**  
**Filoviruses**  
**Rhabdoviruses.**

“Always **B**ring **P**olymerase  
Or **F**ail **R**eplication”



## Picornaviruses

www.medinaz.com

**Poliovirus**  
**Echovirus**  
**Rhinovirus**  
**Coxsackievirus**  
**HAV**



www.medinaz.com



# Segmented viruses

[www.medinaz.com](http://www.medinaz.com)

**B**unyaviruses

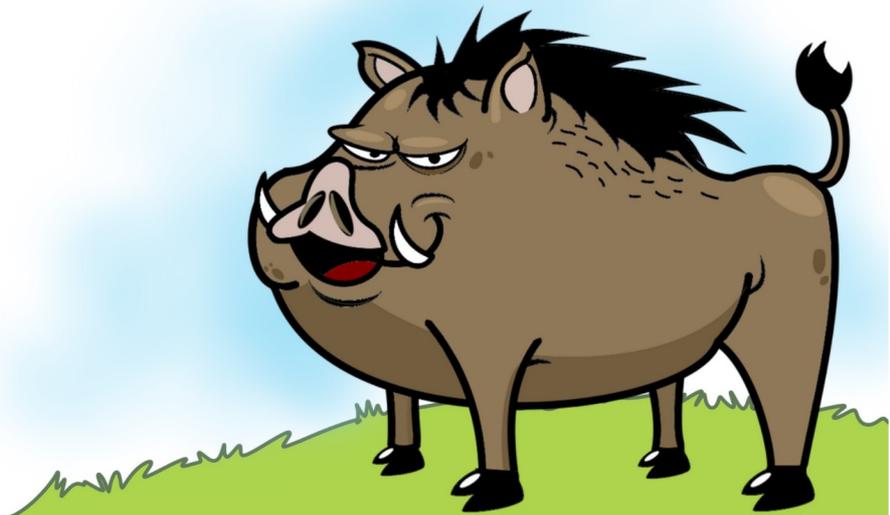
**O**rthomyxoviruses (influenza viruses)

**A**renaviruses

**R**eoviruses

@\_NoB

“**BOAR**”



[www.medinaz.com](http://www.medinaz.com)



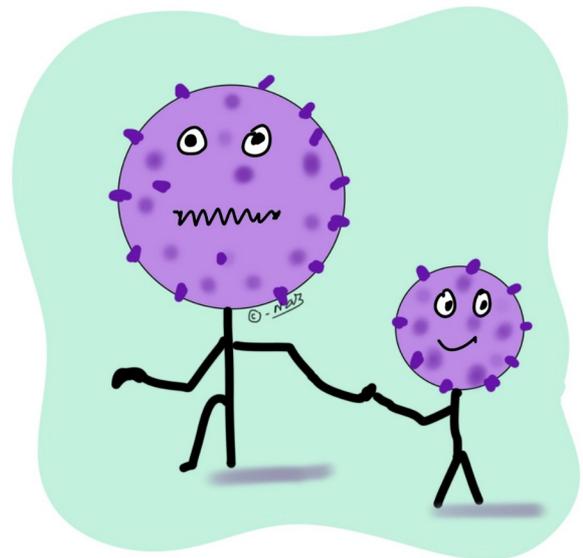
# Oncogenic DNA viruses

[www.medinaz.com](http://www.medinaz.com)

- Hepatitis B virus
- Epstein Barr virus
- Pox virus
- Adenovirus
- Papilloma virus

© - Meds

“HE is my PAPA”



[www.medinaz.com](http://www.medinaz.com)



# MYCOLOGY





# Aspergillus

**A**cute / narrow angle (45°)

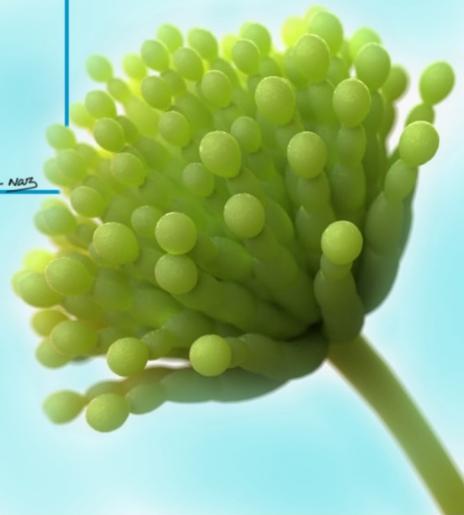
**S**eptate hyphae

**P**enetrates vessels

**E**osinophilia

**f**ruiting bodies

“**ASPER**”



© - NBS

# Aspergillus

**A. niger** → Otomycosis

**A. nigER**



**Ear**

Infection

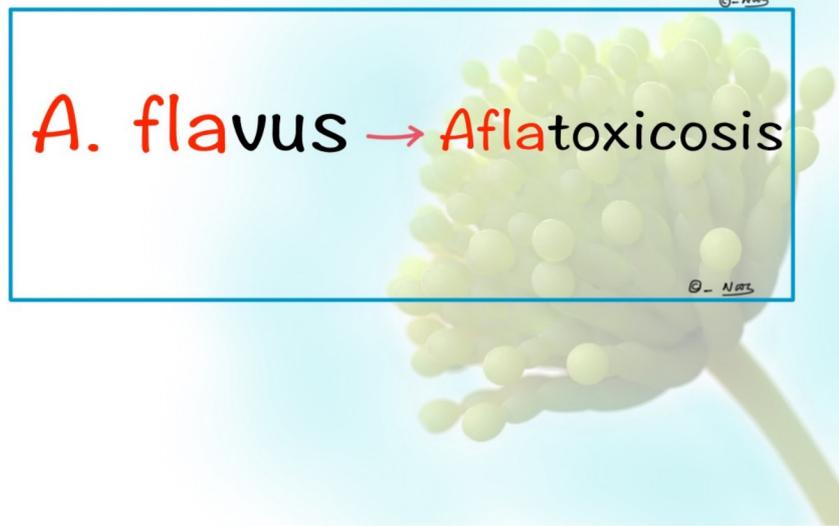
© - NBS

© - NBS



# Aspergillus

**A. flavus** → Aflatoxicosis  
(Hepatotoxin)



# Aspergillus

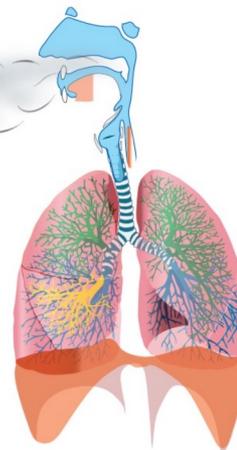
**A. fumigatus** →

Pulmonary aspergillosis  
Invasive aspergillosis  
Keratomycosis

**A. fumigatus**

fume

Fumes go to lungs and  
disseminate cause Pulmonary  
and Disseminated mycosis





# Endemic Mycosis

[www.medinaz.com](http://www.medinaz.com)

“Pakistan Cricket Board  
Headquarter”

Paracoccidioidomycosis  
Coccidioidomycosis  
Blastomycosis  
Histoplasmosis



[www.medinaz.com](http://www.medinaz.com)



# Blastomycosis

www.medinaz.com

**Blasto buds**  
**broadly**

**Broad**-based budding of **Blastomyces**  
(same size as **RBC**)

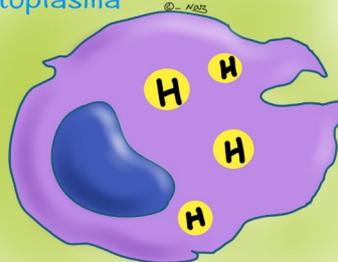


# Histoplasmosis

www.medinaz.com

**Histo hides**  
**within macrophages**

**Macrophage** filled with **Histoplasma**  
(smaller than **RBC**)



www.medinaz.com



# PARASITOLOGY



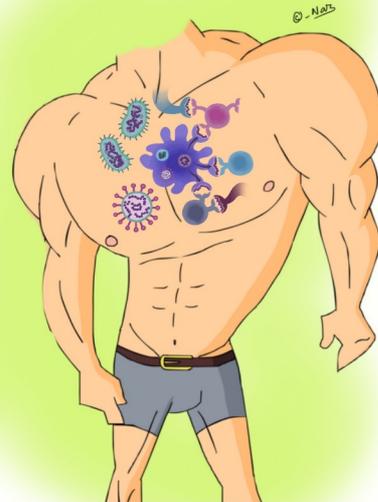


## Parasites Causing Autoinfection

www.medinaz.com

Capillariasis  
Cryptosporidium  
Hymenolepis nana  
Enterobius  
Strongyloides  
Tenia

“Cool CHEST”



## Chlamydia trachomatis serotypes

www.medinaz.com

A

Africa



B

Blindness



C

Chronic infection





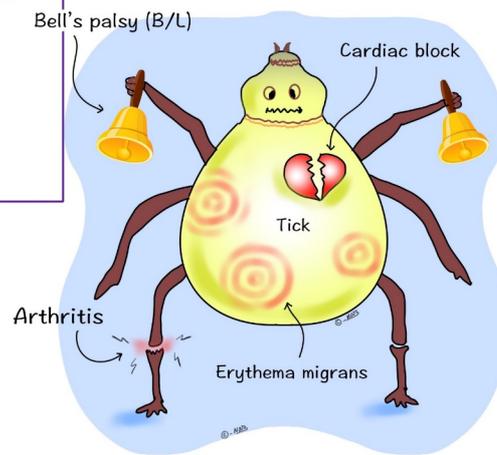
# Lyme Disease

www.medinaz.com



**B**ell's palsy (B/L)  
**E**rythema migrans  
**A**rthritis  
**K**(c)ardiac block

“**BEAK**”

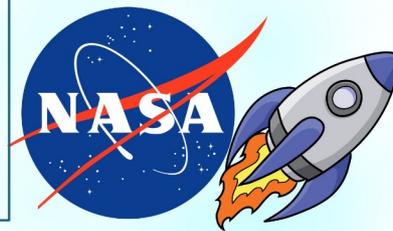


# Nematodes in Intestine

www.medinaz.com

Small intestine..

**N**ECATOR  
**A**NCYLOSTOMA  
**S**TRONGYLOIDS  
**A**SCARIS



Large intestine..

**E**NTEROBIUS  
**T**RICHURIS



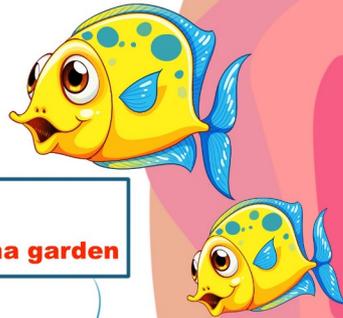
www.medinaz.com



# Gardnerella vaginalis

www.medinaz.com

Clue cells



I don't have a **clue** why  
I smell **fish** in the **vagina garden**

**fishy** smell  
**vaginal** discharge  
**Gardnerella vaginalis**



## Falciparum malaria complications

**"CHAPLIN"**

**Cerebral malaria / Coma**  
**Hypoglycemia**  
**Anaemia**  
**Pulmonary edema**  
**Lactic acidosis**  
**Infections**  
**Necrosis of renal tubules**



www.medinaz.com



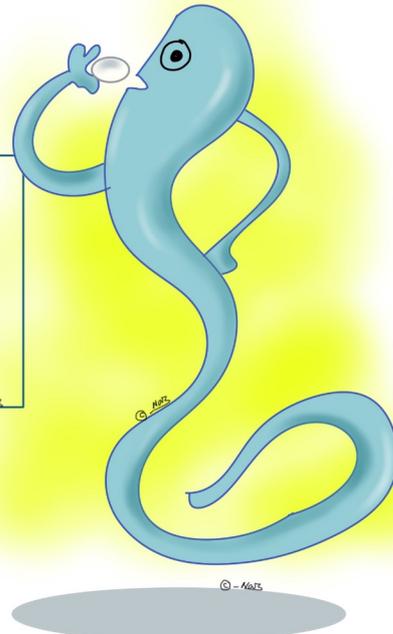
## Nematodes spreading by egg ingestion

www.medinaz.com

“ATE eggs”

A  
T  
E

Ascaris lumbricoides  
Trichuris trichiura  
Enterobius vermicularis



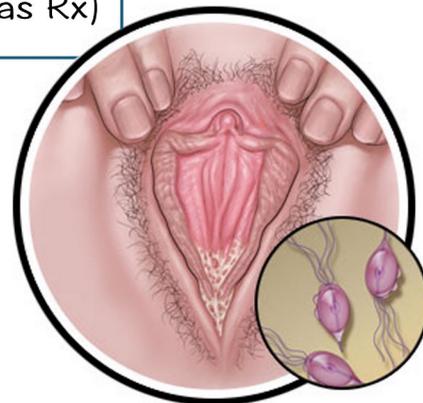
## Trichomoniasis features

www.medinaz.com

F  
F  
F  
F  
F

Flagella  
Frothy discharge  
Fishy door (sometimes)  
Fornication (STD)  
Flagyl (metronidazole as Rx)

“5 F's”

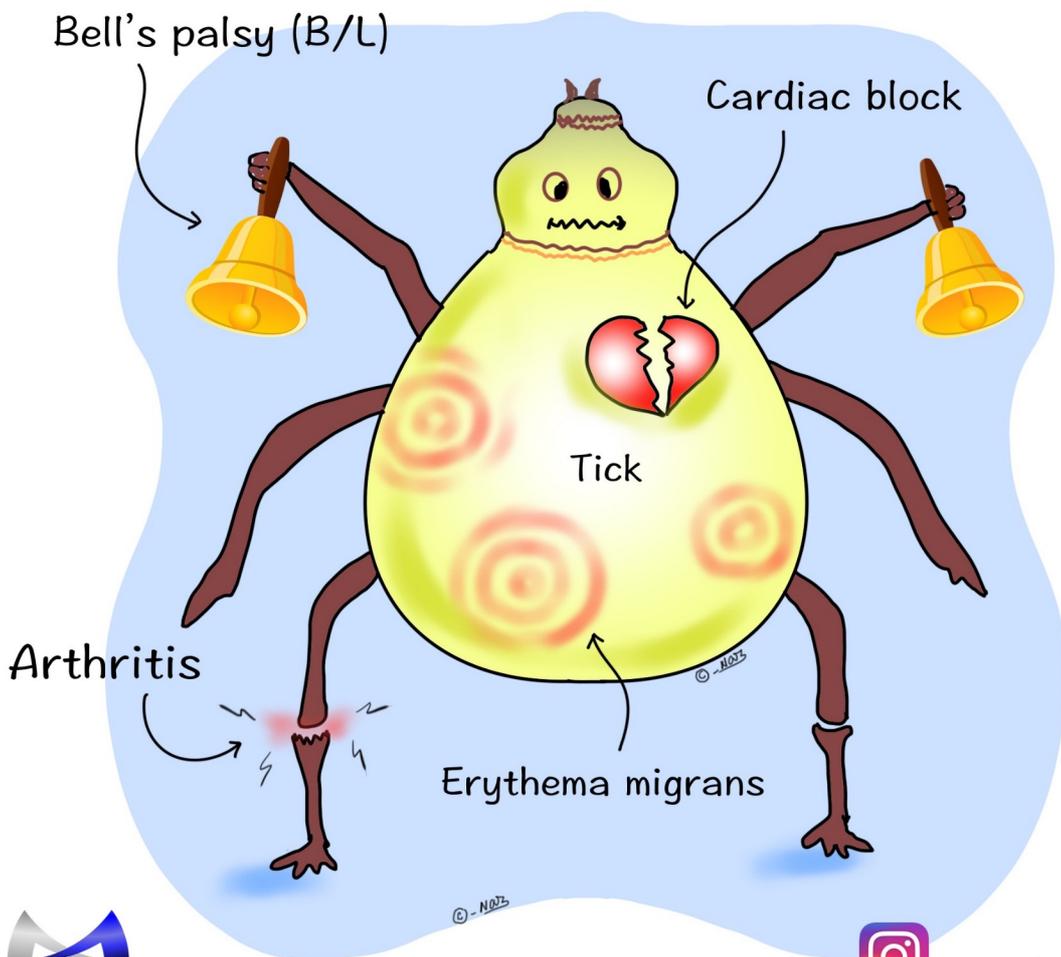


www.medinaz.com



# Lyme Disease

www.medinaz.com



www.medinaz.com

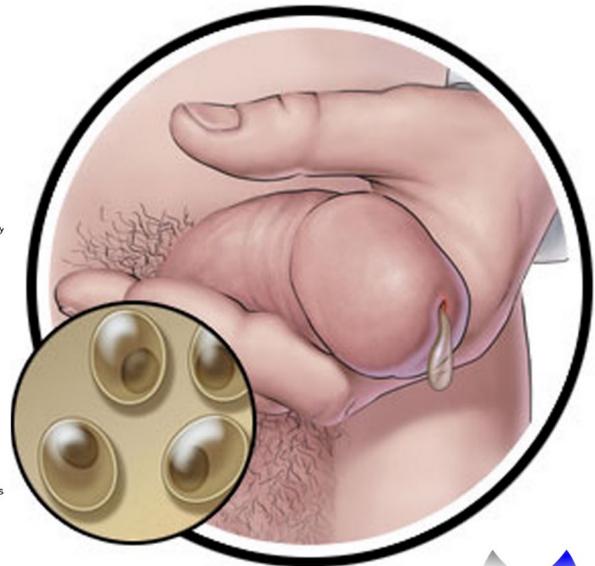
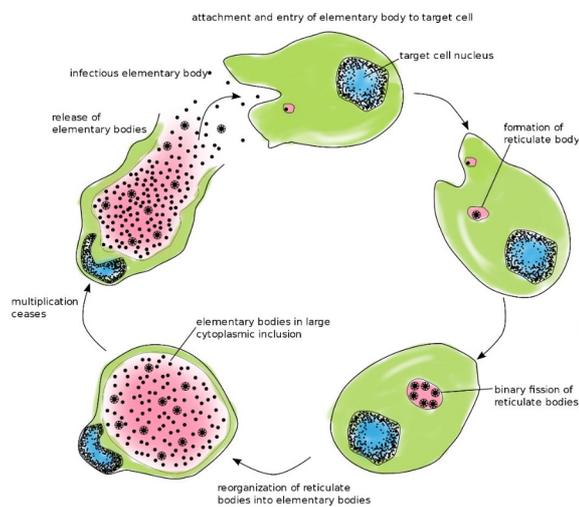


# Chlamydiae

www.medinaz.com

Elementary body (small, dense) is “**E**nfectious” and **E**nters cell via **E**ndocytosis; transforms into reticulate body

Reticulate body **R**eplicates in cell by fission; **R**eorganizes into elementary bodies.



www.medinaz.com



# IMMUNOLOGY





## Complement System

www.medinaz.com

Classical Pathway  
**IgG & IgM** mediated

© - MEDZ

“GM makes classic cars”



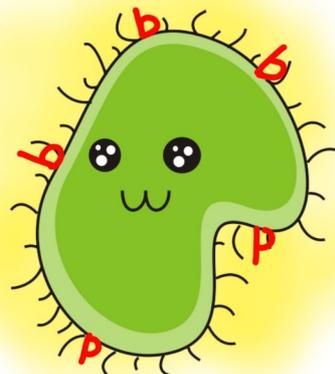
## Complement System

www.medinaz.com

C3a, C4a, C5a mediators of anaphylaxis

C3b binds bacteria

© - NRS



www.medinaz.com



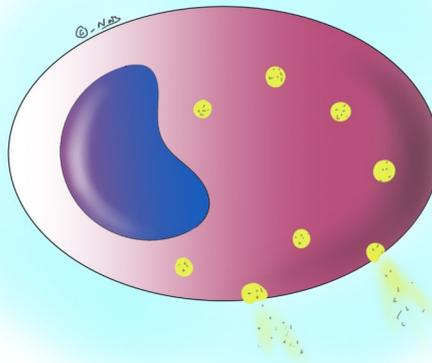
# Histamine Features

www.medinaz.com

- H**CL production
- I**nflammation
- S**trong vasodilator
- T**herapeutic value none
- A**llergy
- M**ast cells
- N**eurotransmitter/ Narrow airways
- I**gE

© - MEDS

“**HISTAMINE**”



# Hypersensitivity types

www.medinaz.com

- A**naphylactic and **A**topic (type I)
- C**ytotoxic / **A**ntibody-mediated (type II)
- I**mmune Complex (type III)
- D**elayed (cell-mediated, type IV)

© - MEDS



“**ACID**”



www.medinaz.com



# Immunoglobulin types

www.medinaz.com

**IgG**

**IgA**

**IgM**

**IgE**

**IgD**

“GAMED”



# INTERLEUKINS

www.medinaz.com

- IL-1: fever (**hot**).
- IL-2: stimulates **T** cells.
- IL-3: stimulates **bone** marrow.
- IL-4: stimulates **IgE** production
- IL-5: stimulates **IgA** production.
- IL-6: stimulates **aKute**-phase protein production

“Hot T-bone stEAK”



www.medinaz.com



# Killed vaccine

www.medinaz.com

**Rabies**  
**Influenza (injection)**  
**Polio (Salk)**  
**hepatitis A**

“RIP Always”



Salk = Killed



# MHC I vs MHC II

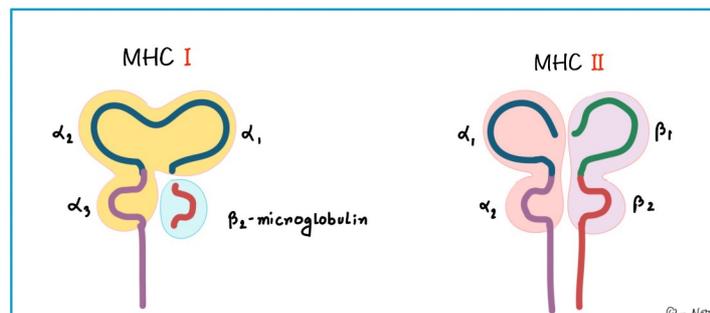
www.medinaz.com

Rule of 8:

$$\text{MHC II} \times \text{CD4} = 8$$

$$\text{MHC I} \times \text{CD8} = 8$$

© - Meds



www.medinaz.com



www.medinaz.com

MHC - I = ENDO

MHC - II = EXO

© - Meds

MHC I molecules express Endogenous antigens  
MHC II molecules express Exogenous antigens



## MHC I vs MHC II

www.medinaz.com

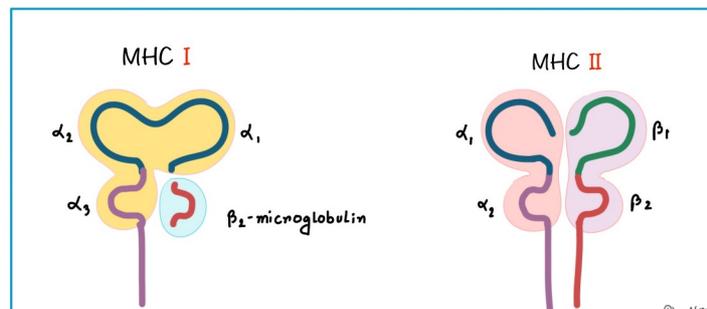
MHC I loci have 1 letter

1 long chain, 1 short chain

MHC II loci have 2 letters

2 equal-length chains (2  $\alpha$ , 2  $\beta$ )

© - Meds



www.medinaz.com



MEDINAZ

# Live attenuated vaccine

[www.medinaz.com](http://www.medinaz.com)

**Adenovirus**  
**Polio (sabin)**  
**Varicella (chickenpox)**  
**Smallpox**  
**BCG**  
**Yellow fever**  
**Influenza (intranasal)**  
**MMR**  
**Rotavirus**

© - Noz

**“Attention! Please Vaccinate Small,  
Beautiful Young Infants with  
MMR Regularly”**



[www.medinaz.com](http://www.medinaz.com)



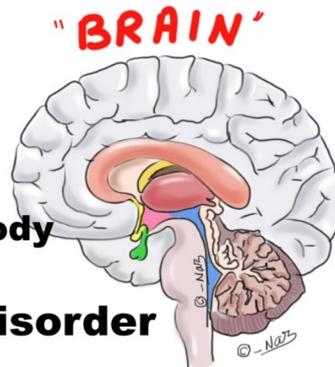
# SLE

**S**erositis  
**O**ral ulcer  
**A**rthritis  
**P**hoto-  
sensitivity



# SLE

**B**lood disorders  
**R**enal disease  
**A**ntinuclear antibody  
**I**mmunologic disorder  
**N**eurologic disorder



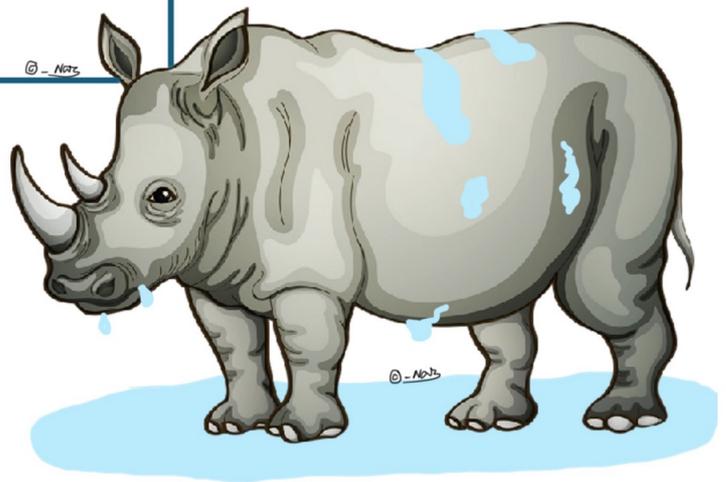


# SLE criteria

[www.medinaz.com](http://www.medinaz.com)

- Discoid rash
- ANA (+)
- Malar rash
- Photosensitivity
- Arthritis
- Serositis (pleural, pericardial)
- Renal involvement
- Hematologic abnormality
- Immunologic abnormality
- Neurologic abnormality (seizures, psychosis)
- Oral / nasal ulcer, Observed

“DAMP AS RHINO”



[www.medinaz.com](http://www.medinaz.com)



# MISCELLANEOUS



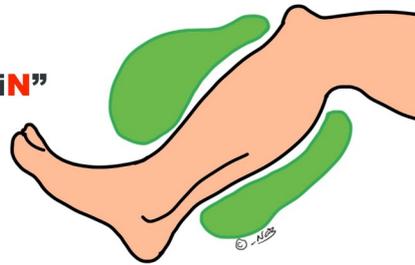


## Bugs show positive Quellung reaction

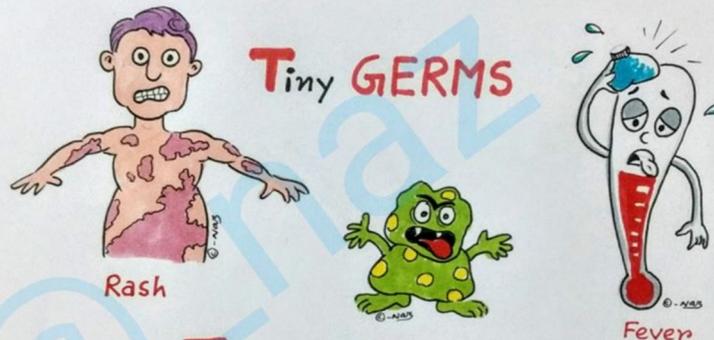
www.medinaz.com

Klebsiella pneumoniae  
Salmonella  
Streptococcus pneumoniae  
Haemophilus influenzae type B  
Neisseria meningitidis

“Kapsules Shield SHiN”



## Infection with Fever and Rash...think



**T**iny → **T**yphoid fever  
**G** → **G**onococemia  
**E** → **E**ndocarditis  
**R** → **R**ocky Mountain Spotted fever  
**M** → **M**eningococemia  
**S** → **S**epsis (bacterial)

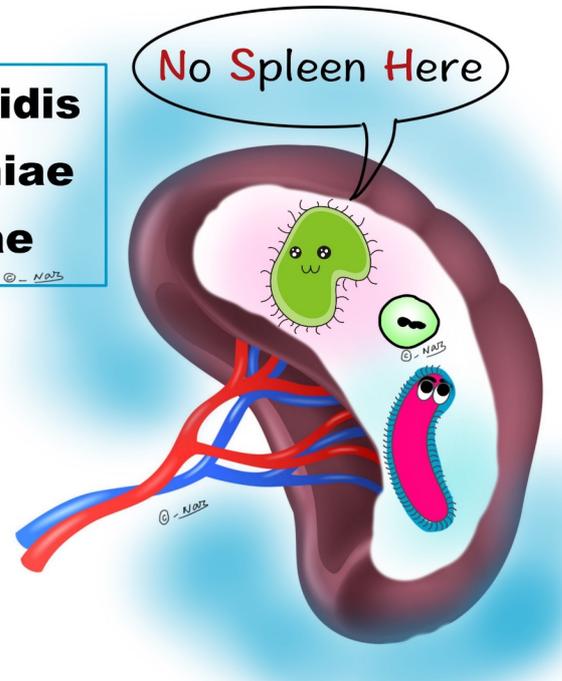


www.medinaz.com



## Asplenic need vaccines to protect against ....

**N** meningitidis  
**S** pneumoniae  
**H** influenzae



## Bloody Diarrhea

[www.medinaz.com](http://www.medinaz.com)

**C**ampylobacter  
**E**IEC/EHEC  
**E**nteroamoeba  
**S**almonella  
**S**higella  
**Y**ersinia enterocolitica



“bloody diarrhea is **CEESY**”



[www.medinaz.com](http://www.medinaz.com)



# Blotting Techniques

www.medinaz.com

**Southern = DNA**  
**Northern = RNA**  
❄️ = 💧  
**Western = Protein**

**SN ❄️ W**

**DR 💧 P**

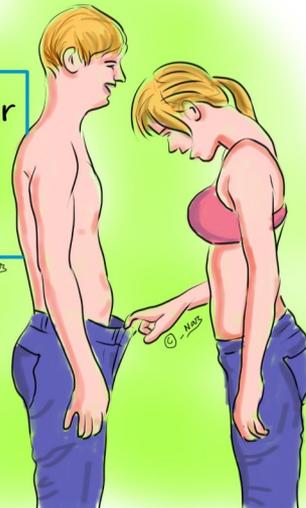
📷 naz\_artonomy



**Dick test for Scarlet fever**

“Dick test for Sex”

Dick test → Scarlet fever  
Schick test → Diphtheria



www.medinaz.com

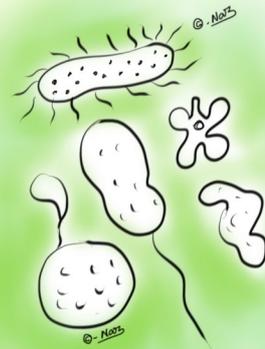


## Bugs do not Gram stain well

www.medinaz.com

Treponema,  
Leptospira  
Mycobacteria  
Mycoplasma,  
Ureaplasma  
Legionella,  
Rickettsia,  
Chlamydia,  
Bartonella,  
Anaplasma,  
Ehrlichia

“These Little Microbes May  
Unfortunately Lack Real  
Color But Are Everywhere”



## Important Growth Factors

www.medinaz.com

**S. Typhi - Tryptophan**  
**Gonococci - Glutathione**  
**Legionella - L-cysteine**  
**Atypical mycobacteria - Aryl sulphate, Amide**  
**RoTa virus - Trypsin**  
**MyCoplasm - Cholesterol**  
**NoCardia - Carbon source (Paraffin)**

 naz\_aratomy



www.medinaz.com



# Mumps Complications

- S**alpingitis
- O**rchitis
- O**ophoritis
- A**septic meningitis
- P**ancreatitis

“SOAP”



## Day of appearance of rash in febrile patient

- V**aricella - day 1
- S**carlet fever - day 2
- P**ox (small) - day 3
- M**easles - day 4
- T**yphus - day 5
- D**engue - day 6
- T**yphoid - day 7

“Very Sick Person Must  
Take Double Tablets”





## Rickettsia Vs Typhus Rash

www.medinaz.com

### Rickettsia on the wRist



(Rash starts on hand and feet)

### Typhus on the Trunk

(Rash starts centrally and spreads out, sparing palms and soles)



## Palm & Sole Rash

www.medinaz.com

“We drive **CARS** using our **Palms** and **Soles**”

**C**oxsackievirus **A**  
**R**ocky mountain spotted fever  
**S**yphilis



www.medinaz.com

## Sandfly ( Phlebotomus )



**P**  
**h**  
**L**eishmaniasis  
**e**  
**b**  
**O**riental Sore  
**t**  
**O**roya Fever  
**m**  
**S**andfly Fever

Diseases  
transmitted



## VDRL false positives



**V**irus (mono, hepatitis)  
**D**rugs  
**R**heumatic fever  
**L**upus and Leprosy

© - N025

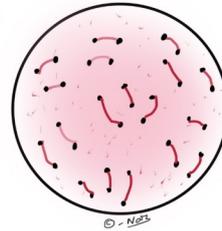


## Stains for Metachromatic granules

www.medinaz.com

Ponder's stain  
Loeffler's stain  
(most commonly used)  
Albert's stain  
Neisser's stain

“PLAN”



## Syphilis vs H. ducreyi

www.medinaz.com

In **du-crey-i**, you do **cry**  
(Because the ulcer is **painful**)

**Syphilitic** ulcer is  
**Painless**



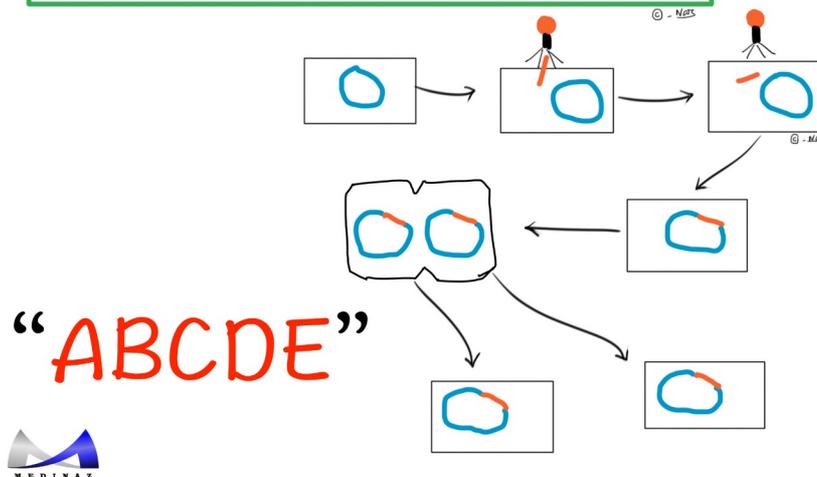
www.medinaz.com



## Toxins encoded by lysogenic phage

www.medinaz.com

- shigA-like toxin (EHEC)
- Botulinum toxin (certain strains)
- Cholera toxin
- Diphtheria toxin
- Erythrogenic toxin of Strep Pyogenes

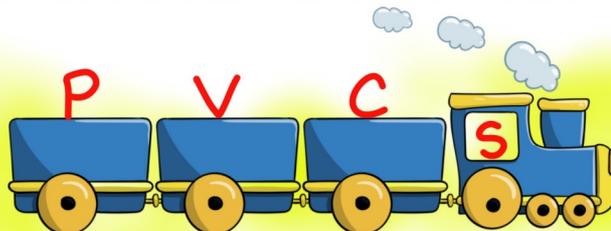


## Transport Medias

www.medinaz.com

- Pike's media → Streptococcus pyogenes
- VR media → Vibrio
- Cary-Blair media → Vibrio cholerae, shigella, salmonella
- Sach's media → Shigella

© - Meds



www.medinaz.com



# VDRL False Positives

[www.medinaz.com](http://www.medinaz.com)

**Pregnancy**

**Viral infection (eg, EBV, hepatitis)**

**Drugs**

**Rheumatic fever**

**Lupus and leprosy**

© - Med

“False-Positive results on VDRL”





## Eggs of these organisms are found in stool

[www.medinaz.com](http://www.medinaz.com)

TINA = Taenia

3(tri) = Trichuris

SIS = Schistosoma

NANA = H. nana

DAANE (pimples)

D. latum

Ascaris

Ancylostoma

Necator americanus

Enterobius

FAce = FAsciola hepatica

“TINA’s 3 SIS and NANAji  
have DAANE on their FAcE”

© - N075



© - N075



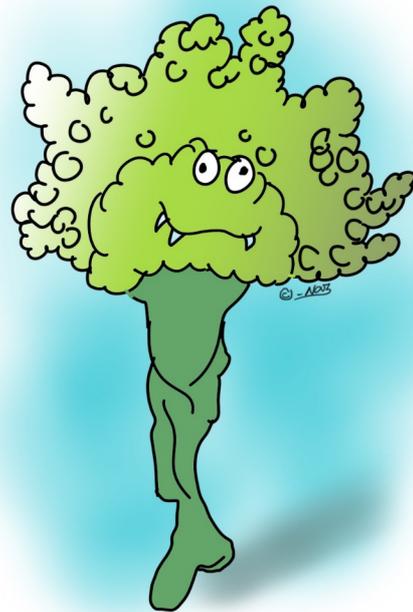
# ASpergillosis

[www.medinaz.com](http://www.medinaz.com)

Acute angle 45

Aflatoxins (associated with hepatocellular carcinoma)

Septate hyphae



[www.medinaz.com](http://www.medinaz.com)