

Passing Things Along: Critters to Social Diseases

SCABIES

Sarcoptes scabiei

- Human itch mite
- Gravid adult female burrows through stratum corneum to the stratum granulosum & lays 2 to 3 eggs per day for a month
- Key symptom: PRURITUS, esp. nocturnal (hypersensitivity to saliva & fecal matter)
- Type IV delayed hypersensitivity: Syx on 1st exposure @4-6 wks, subsequent exposure @2-3days

CLINICAL

- Burrows, papules, vesicles, & excoriations
- Web spaces, wrists, areolae, axillae, glans penis, umbilicus & belt line
- Infants have involvement above the neck, adults do not
- Penhouse scabies

BURROW

- Tiny linear scaly disruptions of the skin
- Erythematous component or as a 'dirty' elevated line ('dirt' represents mites & mite products)



Scabies mite



Wrist



Wrist



Finger webs



Finger webs



Finger webs

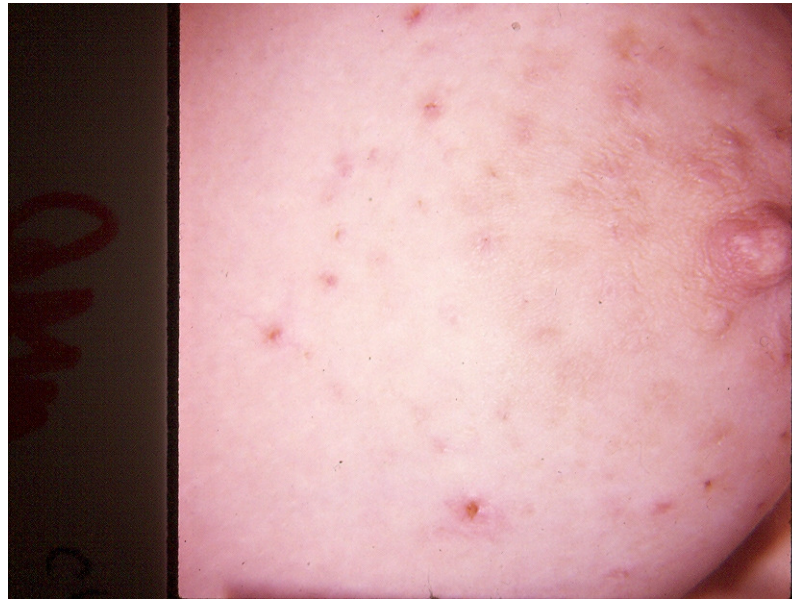




Breast area



Peri-areolea



Belt line & umbilicus



Groin



Scrotum: often papulo/nodular



Glans penis: often papulo/nodular





Face & scalp: infants









Palms & soles: infants





Norwegian (crusted) scabies

- Disabled, elderly, mentally handicapped or immunosuppressed patients
- Infested with innumerable mites
- Highly contagious



SKIN SCRAPINGS

- Dx: identify adult mite, eggs, or feces in scrapings from a burrow
- Place a drop of mineral oil over a burrow or suspected lesion
- Scrape area firmly with the rounded scalpel blade
- Place scrapings on a microscopic slide
- Examine for mites, eggs, scybala (fecal pellets)



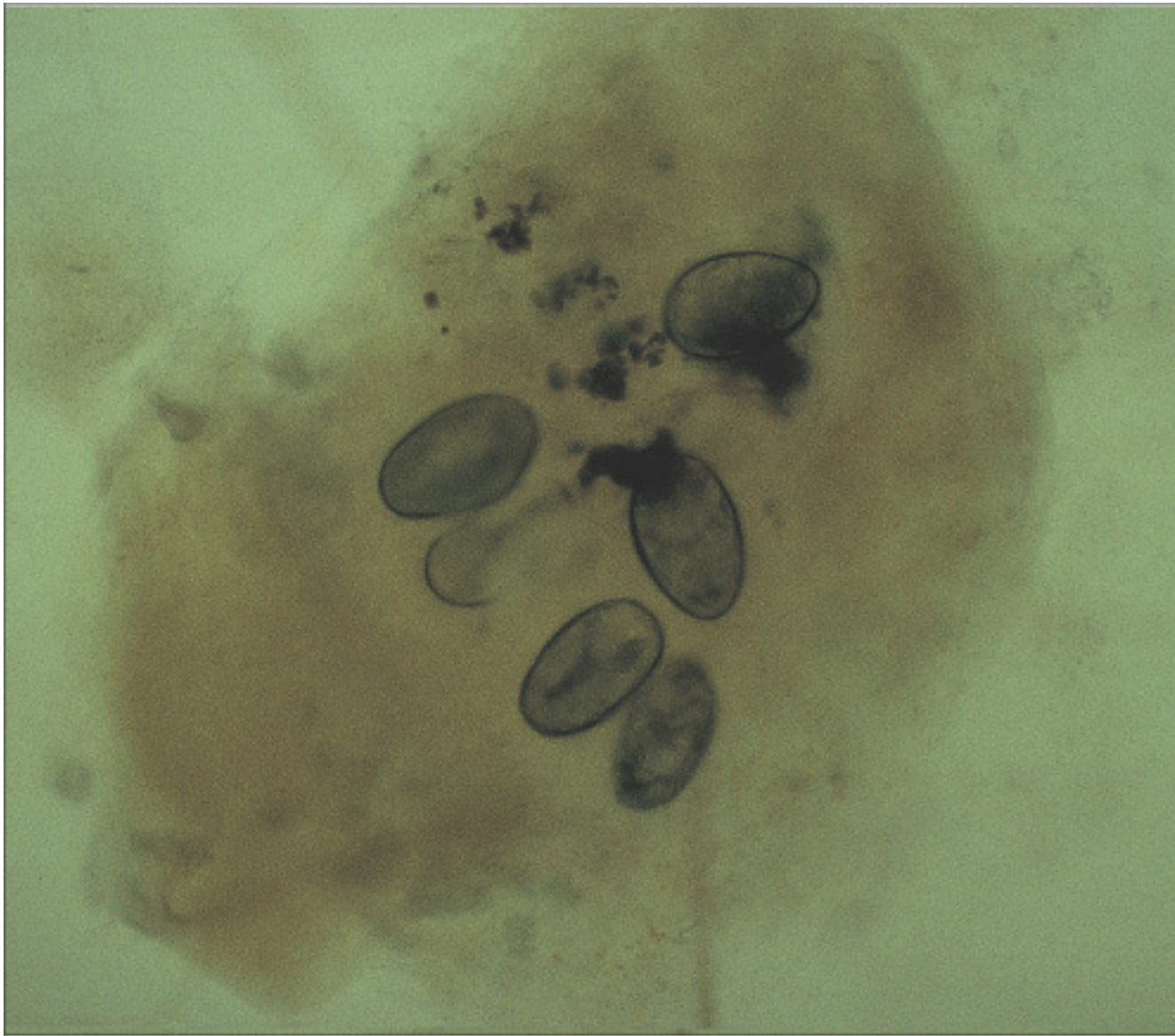


Table 84.1 Treatment for scabies. All treatments for scabies should be repeated 12–14 days later to kill any nymphs that survived treatment and the development of resistance.

TREATMENT FOR SCABIES			
Therapy	Administration	Risk factors	Efficacy
Permethrin cream (5%)	Topically overnight on day 1 and day 8	Allergy to formaldehyde	Good but some tolerance
Lindane lotion (1%)	Topically overnight	CNS side effects, pregnancy	Poor, resistance common
Sulfur (5%)	Topically for 3 nights	None	Not evaluated
Crotamiton (10%)	Topically overnight on days 1, 2 and 8	None	Very poor
Ivermectin (250–400 µg/kg)	Orally on days 1 & 12 or 14 (250–400 µg/kg)	Avoid if <15 kg, pregnancy	Excellent

Rx Scabies

- Permethrin (Elimite 5% Cr) or lindane 1% (Kwell Lotion)
- Apply to entire skin surface, neck down including under fingernails & toenails and in the umbilicus
- Apply h.s., leave on for 12 hrs, bathe off
- Repeat in one week
- Lindane: “use” with caution in infants (neurotoxicity)

Rx Scabies cont.

- Crotamiton 10% (Eurax Cr): qd to bid X 2-5 days
- 5-6% ppt sulfur in white petrolatum or Eurax Cream qhs X 3 nights (odor, stains)
- Oral ivermectin (Stromectol 6 mg scored tablets) 200 ug/kg as a single dose or repeat in 2 wks. Caution with elderly:?
Increased risk of death

SCABIES Rx

- 1: Bath (no jewelry)
- 2: Rx as prescribed- do not overuse Rx
- 3: Adults: apply to whole body from the neck down-include webs of fingers and toes, groin, axillae, umbilicus, buttock crease, palms & soles
- 4: Infants and small children: include scalp and face, avoid eye & mouth areas

Scabies Rx continued

- 5: Trim & clean nails – apply medication to nail edges – DO NOT WASH HANDS AFTER APPLICATION
- 6: Thoroughly remove medication by bathing in warm soapy water after overnight (8-12hrs) application of lindane (Kwell) or permethrin (Elimite) or 48 hrs of crotamiton (Eurax)

Rx continued

- 7: After bathing wash all bedlinens & intimate clothing / hot wash & dry cycles
- 8: Let other clothes hang for a week / scabies mites cannot live more than 2-3 days without host contact
- 9: Tell patients that itching may persist for several days to weeks / Rx after scabies Rx with topical corticosteroids & antihistamines

Rx continues

- 10: Do NOT use topical steroids the night the scabicial agent is used
- 11: YOU MUST BE EXPLICITE / LEAVE NO DETAIL OUT

- Treat all household members and sexual contacts simultaneously
- Itch and rash may persist for 2-4 wks after successful Rx. (until the mites and its antigens are sloughed off with the dead skin layers)

Other mites

- Chyletiella mites: 'walking dandruff': birds & mammals (pets)
- Harvest mite: chiggers: bite reaction/can transmit typhus
- House/dust mites
- Rat, mouse, rodent, bird, poultry, & even grocery mites

LICE

LICE

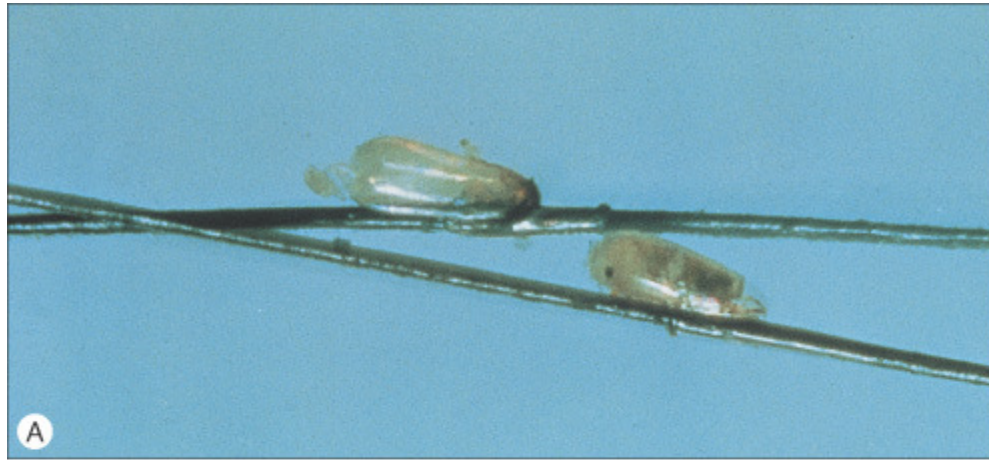
- Human ectoparasite
- *Pthirus (Phthirus) pubis*: the pubic or crab louse
- *Pediculus humanus capitis* : the head louse
- *Pediculus humans coporis* : the body louse

Eggs/Nits

- Attached to hairs (head & pubic lice)
- Attached to fibers of clothing (body lice)
- Note : nits do not move / 'glued to the hairs' / hair casts move

Head lice





Secondary infection



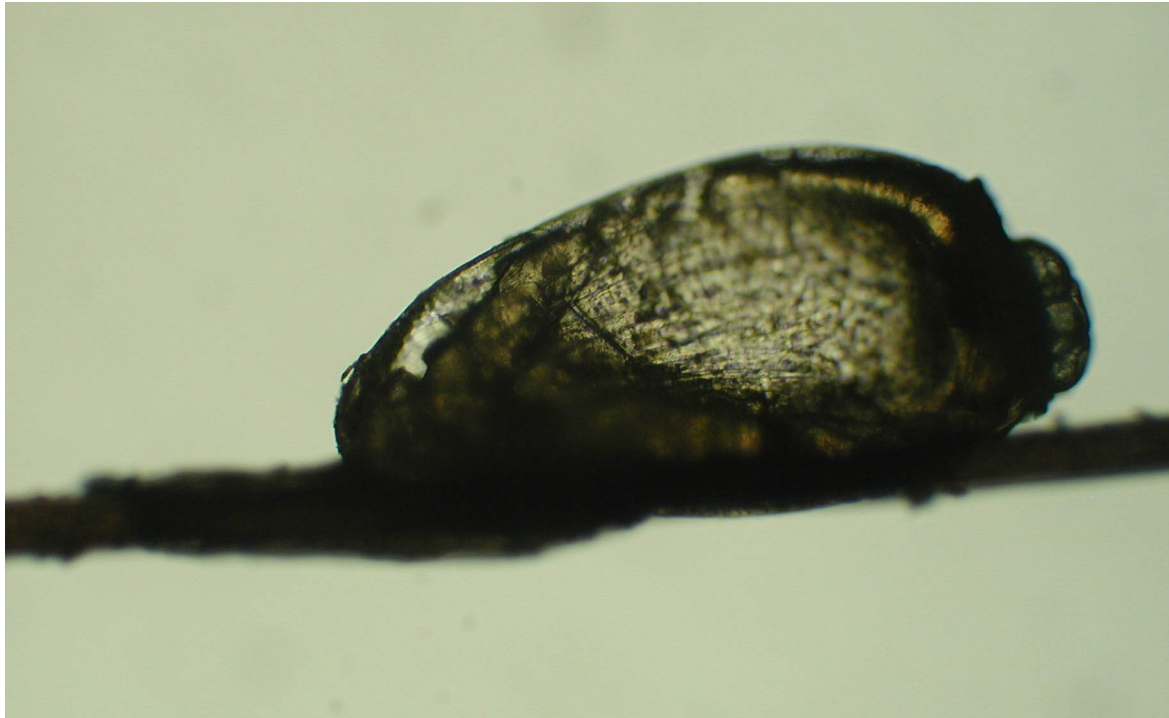
Pediculus humanus var. capitis: head louse / lice





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Louse egg (nit): cemented to the hair shaft

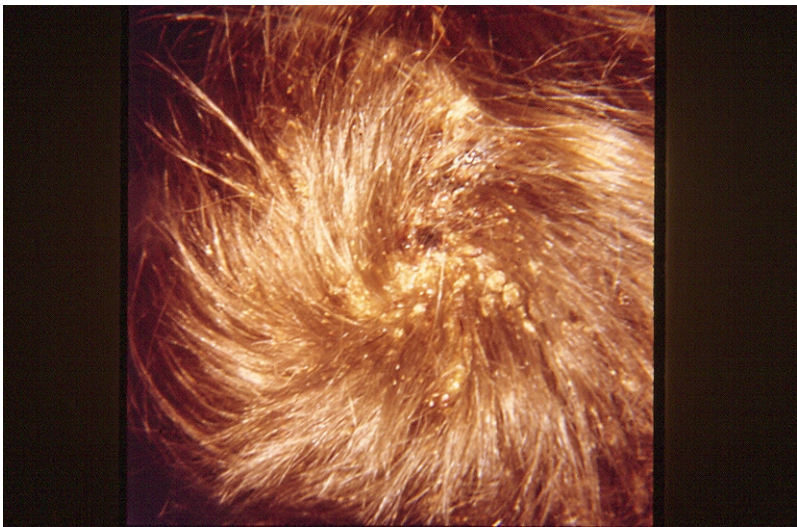


Nits: attach to hair shaft close to the scalp surface



“NO NIT” Policy

- Many schools have adopted ‘no nit’ policy which requires mechanical removal of all nits before a child may return to school
- Nit combs (takes hours)
- 8% formic acid rinses & enzymatic treatments
- Some cultures use monkeys: ‘employed as patient & effective nit removers



Lice Myths

- All children with lice scratch & itch
- Lice jump or fly from head to head
- Lice live in carpets, beds, clothes & sofas
- Lice die immediately after treatment
- One treatment is enough
- Permethrin products are 100% ovicidal
- Everyone in the family should be treated
- Head lice prefer long or dirty hair

Table 84.2 Treatments for head lice. All treatments should be given on two separate occasions, one week apart.

TREATMENTS FOR HEAD LICE					
Treatment	Group	Administration	Risk factors	Efficacy	Resistance
Permethrin (1%)	Synthetic pyrethroid	10 minutes topically	None	Fair	Worldwide resistance
Permethrin cream (5%)	Synthetic pyrethroid				
Pyrethrins, synergized	Natural botanical	10 minutes topically	Allergy to chrysanthemums and related plants	Fair	Worldwide resistance
Malathion (0.5%)	Organophosphate, cholinesterase inhibitor	8–12 hours* topically	Isopropyl alcohol base is flammable	Excellent	Resistance in UK and
Carbaryl (0.5%)	Carbamate	8–12 hours topically	Cholinesterase inhibitor	Fair	Good, but not approved in the US
Lindane (1%)	Organochlorine	10 minutes topically	CNS side effects, pregnancy	Poor	Worldwide resistance
Topical ivermectin	Avermectin	10 minutes topically	None	Appears promising	None noted
Oral ivermectin	Avermectin	Oral (250 µg/kg)	Avoid if body weight <15 kg, pregnancy	Very good	None noted

* A 10-minute treatment may be sufficient.

Rx head lice

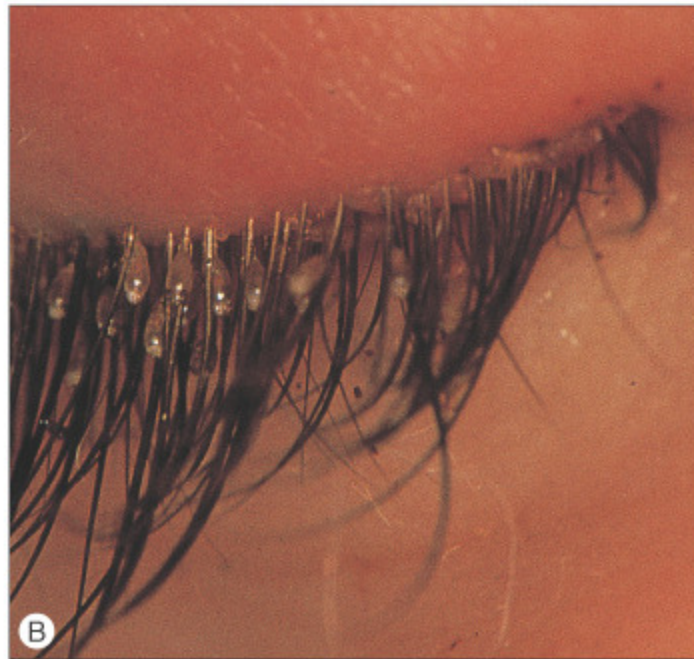
- Permethrin rinse 1% (Nix crème rinse)
- Pyrethrin shampoos & creams (RID mousse, RID shampoo, A-200)
- Permethrin 5% (Elimite) h.s. to a.m. with shower cap occlusion
- Malathion lotion 5% (Ovide) X 8-12 hr.
Repeat in 7-9 days
- Benzyl alcohol lotion 5% (Ulesfia) 10 min
X 2 rx's

Rx head lice cont

- Lindane shampoo (Kwell): 5min contact. Repeat in 1 week.
- Oral ivermectin (Stromectol): 200 ug/kg, repeat in 10 d
- Hair styling gel (Dippity Do) with shower cap h.s. to a.m.
- Removing all nits is essential
- Fromite control

Phthirus pubis : pubic louse/lice





Pediculosis palpebrum



Table 84.3 Treatment for crab lice. All crab lice treatments should be given on two separate occasions, one week apart

TREATMENT FOR CRAB LICE			
Treatment	Administration	Risk factors	Efficacy
Permethrin (1%)/synergized pyrethrin shampoos*	10 minutes topically	None	Fair
Permethrin cream (5%)	8–12 hours topically	None	Good
Lindane shampoo (1%)	4 minutes topically	CNS side effects, pregnancy	Poor
Ivermectin	Oral (250 µg/kg)	Avoid if body weight <15 kg, pregnancy	Excellent

* Available over the counter.

Rx pubic lice

- Nix cream rinse: apply X 10 min, rinse
- RID, A-200, R&C
- Permethrin 5% (Elimite cream) h.s. to a.m.
- Lindane (Kwell) shampoo: Apply for 5 min, repeat in 1 wk.
- Malathion lotion (Ovide): applt to dry hair, shampoo out in 8-12 hr.
- Oral ivermectin 200 ug/kg single oral dose, repeat in 10 days

Rx pubic lice cont.

- Nits not affected by Rx so must repeat in 1 Week
- Remove nits
- Shave area
- Fromite control
- May affect eyelashes- white petrolatum (Vaseline) h.s. to a.m.

Occlusive Agents

- Phthiriasis palpebrum : petrolatum
- Pediculus humanus capitis : hair styling gel (Dippity Do) with a shower cap hs to am

Pediculus humanus var. corporis: body lice



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Rx BODY LICE

- Rx infected clothing
- Laundering & ironing
- DDT, permethrin or fumigants, 1% malathion powder to clothes
- Can carry or transmit infectious diseases: epidemic typhus, relapsing fever, trench fever

Psocid Book lice

- Books, baskets, leafy matter
- Ticking sound with mating

BED BUGS

BEDBUGS CIMICIDS

- Blood-sucking ectoparasites
- Nocturnal – hide in cracks & crevices
- True bugs / bite / 5-7mm (size of a tick)
- Erythematous & pruritic papules
- Face & distal extremities (areas uncovered by sleeping clothes or blankets)

BEDBUG



THE KNIGHT LIFE

By Keith Knight



Bedbugs



True bug bite





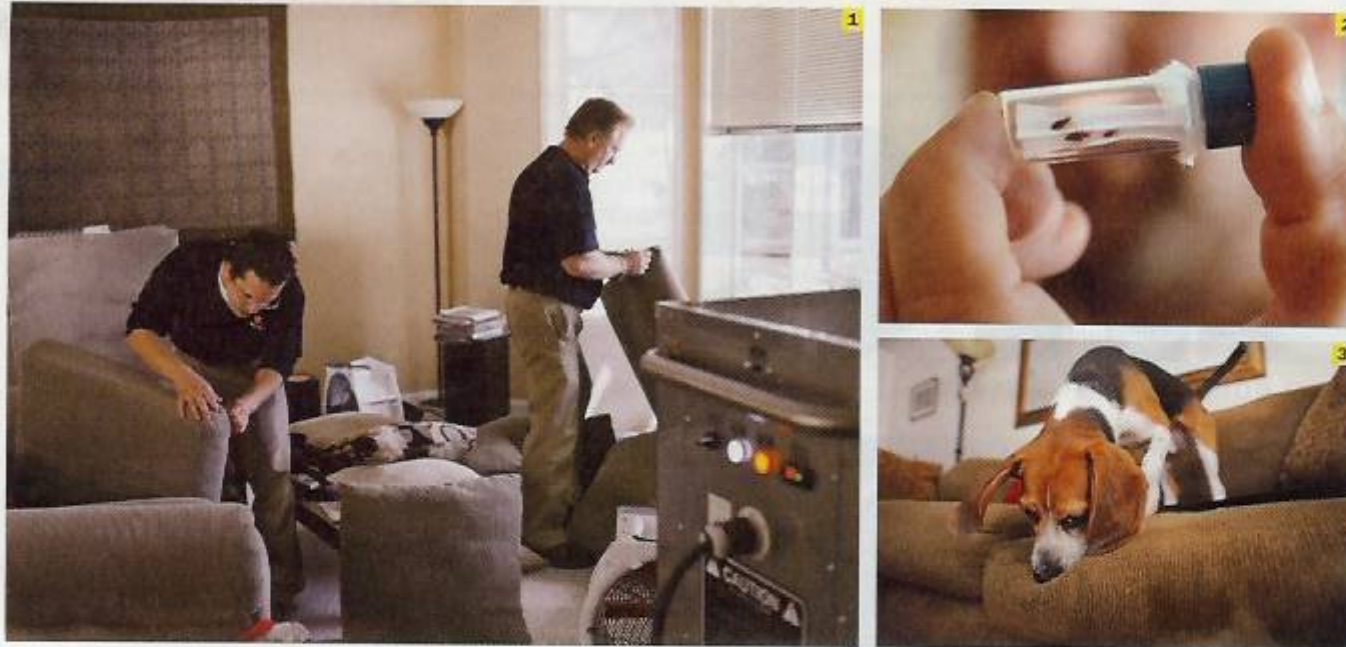
Cimex lectularius

- Blood sucking ectoparasite
- Resistant to most insecticides: DDT banned in 1972
- Propoxur: OUTDOOR insecticide
may cause birth defects, ? carcinogen,
cognitive disabilities, nausea,
dizziness, blurred vision esp. in
children

Call in the canines

The New Bug Bombs. How to evict these suckers

71MB 11/16 9/10



1 Pest technicians inspect furniture prior to heating rooms above 113°F (45°C) **2** Heat is the preferred abatement method, since the tick-size bugs can hide in small crevices **3** Dogs trained to sniff out the bugs and their eggs are used for early detection or to pinpoint follow-up areas

Rx

- Call in the canines- dogs specially trained to sniff out bedbugs and their eggs. Useful for early detection or to pinpoint follow up areas
- Pest companies have machines that heat rooms above 113 degrees F (45 degrees C) Cost: thousands of dollars per room!!
- Throwing away infested mattress & furniture unlikely to solve the problem

- EPA recommends: reducing clutter, sealing cracks and crevices, vacuuming often, drying infested clothes at high heat and using a special mattress cover so “you can sleep tight without letting the bedbugs bite”
- Travelers inspect hotel mattresses, box springs and headboards for fecal and the ink-like streaks of their droppings

A real problem!!!!



That's it. Sleep tight & don't let
the bedbugs bite!!!!

TICKS

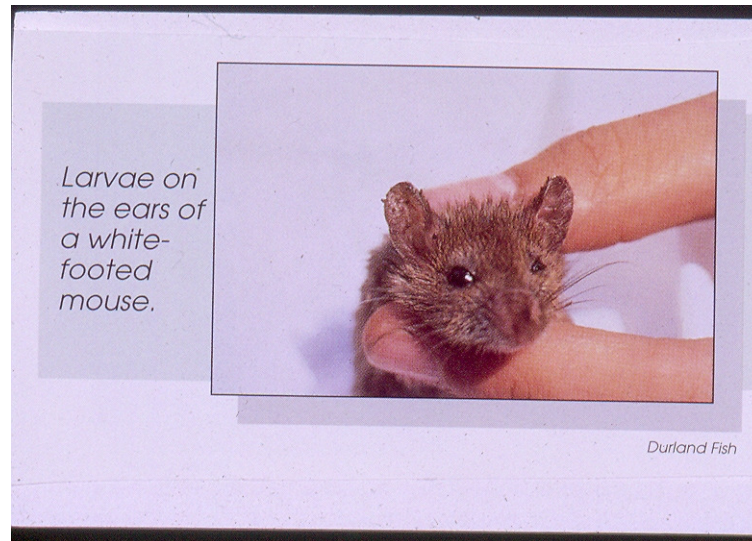
Erythema Migrans: cutaneous eruption of Lyme Disease



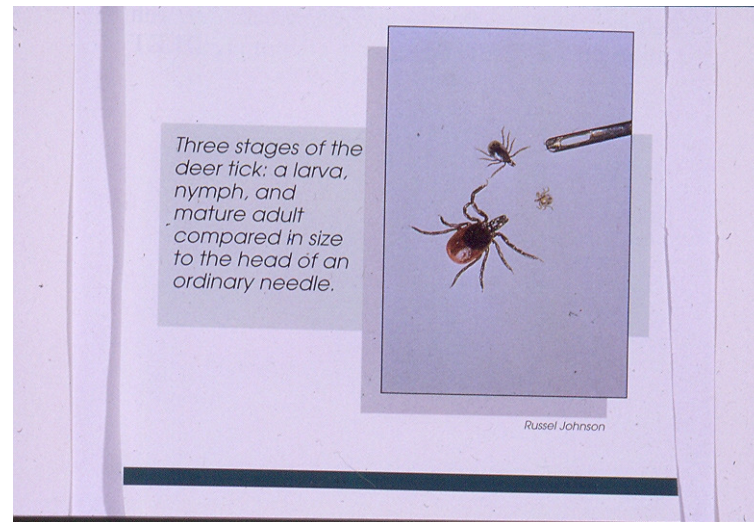
Tick: (dog tick) attached & engorged



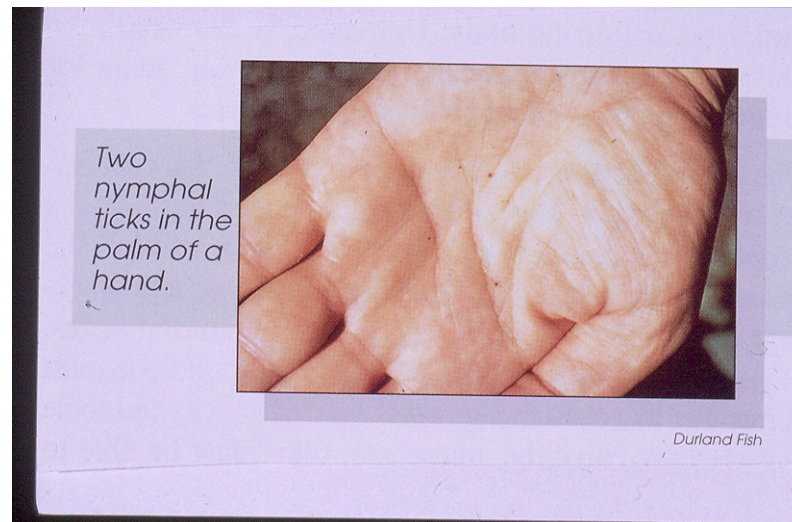
Lyme Disease: white footed field mouse not Bambi



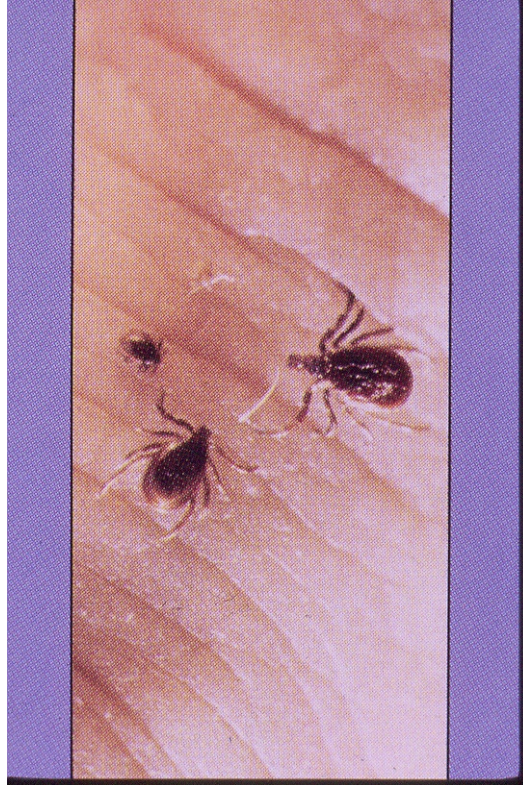
Lyme Disease: Deer tick, larger one a mature tick



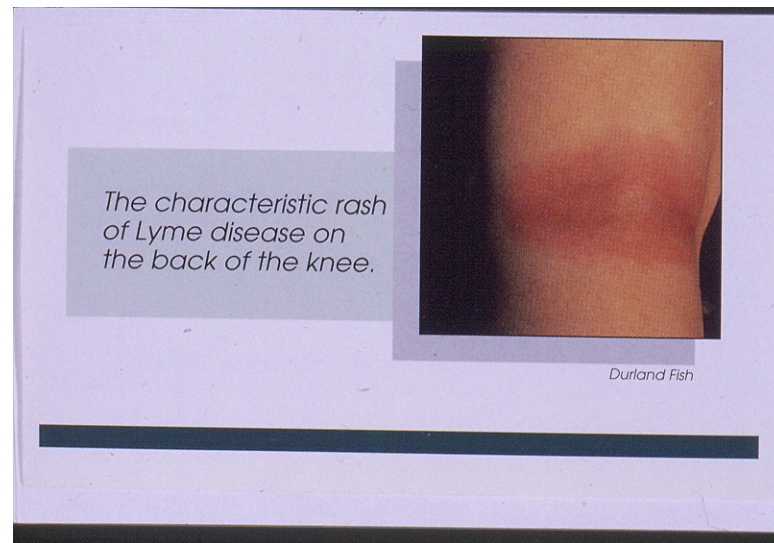
Lyme Disease: nymphal ticks small



Lyme Disease: adult deer tick



Lyme Disease: erythematous patch (flat), blanches with pressure



Lyme Disease: red patch may reach 10 cm in size



- Tick-borne disease
- Spirochete *Borrelia burgdorferi*
- Cutaneous eruption : erythema migrans (bright red expanding eruption)

Erythema Migrans



Erythema migrans

- Small papule with slowly enlarging ring of erythema, fades in 2-3 weeks



Erythema migrans

- 20-50 % of pts. Have multiple concentric rings at sites of subsequent hematogenous dissemination



Erythema Migrans: expanding border



Erythema migrans: expanding border may be slightly elevated



Erythema Migrans: tick bite site
and large slowly expanding border



Erthema Migrans: subtle rash



Erythema Migrans





Tick Removal

WARTS

Warts: epidermal proliferation
human papilloma virus



Verruca Vulgaris



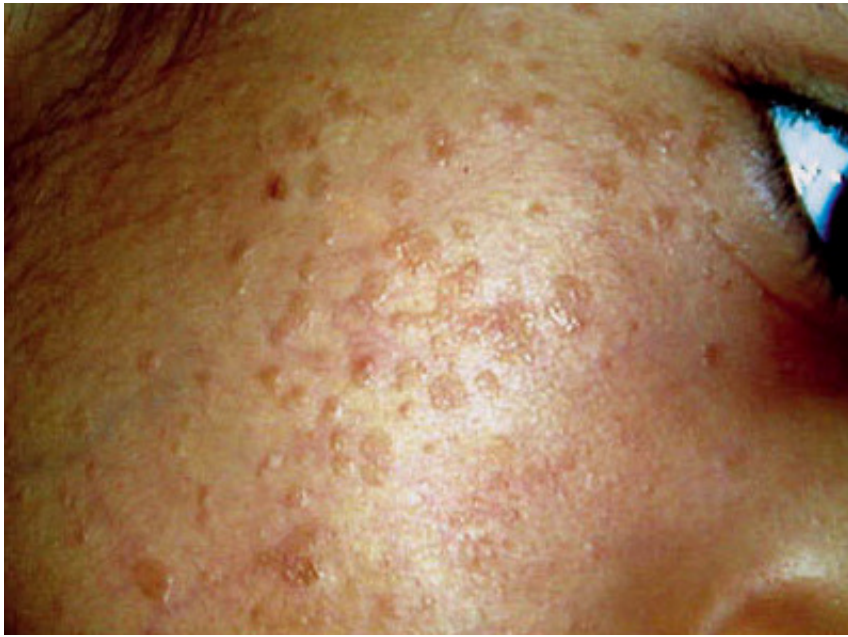
Verruca: innoculation



WARTS



- Verruca vulgaris: common warts
- Rx: OTC SSA products, duct tape, cryotherapy with liquid nitrogen, electrocautery and curettage, IL bleomycin (painful), Candida antigen therapy, laser,



- Rx cont: imiquimod (need to occlude +/- SSA), acids (care hands to face/eyes), hypnosis, etc, etc, etc
- Flat warts: often an issue for shaving (men-beards/women-lower legs)

Verruca Plana



- Rx flat warts: SSA preps
imiquimod
tretinoin
liquid nitrogen (GENTLY)
5-FU cream
electrocautry (LIGHTLY)
- Filiform warts

Rx common warts: MANY

- When the list is long nothing works really well!!
- OTC SSA products, duct tape, cryotherapy with liquid nitrogen, electrocautery, IL bleomycin (painful), Candida antigen therapy, laser, imiquimod (need to occlude +/- SSA), hypnosis, etc., etc., etc.

Condyloma Acuminata Genital Warts



Condyloma Acuminata (Genital Warts)



- Human papilloma virus
- Rx: podofilox (Condylox gel) Apply BID for 3 consecutive days followed by 4 days of no treatment. Repeat cycle weekly for maximum of 4 weeks.



- Rx cont; Condylox S.E.
pain, burning, inflammation, and erosion
- Cryotherapy with liquid nitrogen
- Electrocautery and curettage

- Rx cont.

Imiquimod cream: Apply every other night. Left on for 8-12 hours. Wash off with mild soap and water. May take 3-4 months of Rx. S.E.irritation

LASER: \$\$\$\$

Extensive vulvar warts



Wart virus likes moist places



Extensive perianal warts



Rx: Genital Warts

- Podofilox (Condylox gel): Apply BID for 3 consecutive days followed by 4 days of no treatment. Repeat cycle weekly for maximum of 4 weeks. S.E: pain, burning, inflammation & erosion
- Cryotherapy with liquid nitrogen
- Electrocautery & curettage

Rx Genital Warts cont.

- Imiquimod 5% (Aldara cream): Apply every other night. Left on for 8-12 hours. Wash off with mild soap & water. May take 3-4 months of Rx. S.E: irritation. Box of 12-24 single use foil packets.
- Laser: \$\$\$\$
- New: 10% sinecatechins (Veregan Oint): TID for up to 16 weeks.

HPV 2 Vaccine: HPV 16 & 18 Cervix

- Killed virus given I.M.
- Three doses: time zero
 - @ 1-2 months
 - @ 6 months
- Recommended for females age 11-12 years with catch-up vaccination ages 13-26 yrs.
- Prevention of cervical precancers & cancers in females

HPV4 Vaccine: HPV 6,11,16 & 18 Gardasil

- Killed virus given I.M.
- Three doses: time zero
 - @ 1-2 months
 - @ 6 months
- Recommended for prevention of cervical, vaginal, and vulvar cancers (in females) & genital warts (in females & males)
- Females: age 11-12 yr with catch-up vaccine ages 13-26yr. Males: aged 9-18yr

Molluscum

Molluscum Contagiosum

- DNA virus of the pox virus family
- 1-2 mm shiny, white to flesh-colored, dome-shaped firm papules
- Small central whitish umbilication
- Spread on the skin by autoinoculation & is transmitted to others by skin-to-skin contact

Molluscum Contagiosum



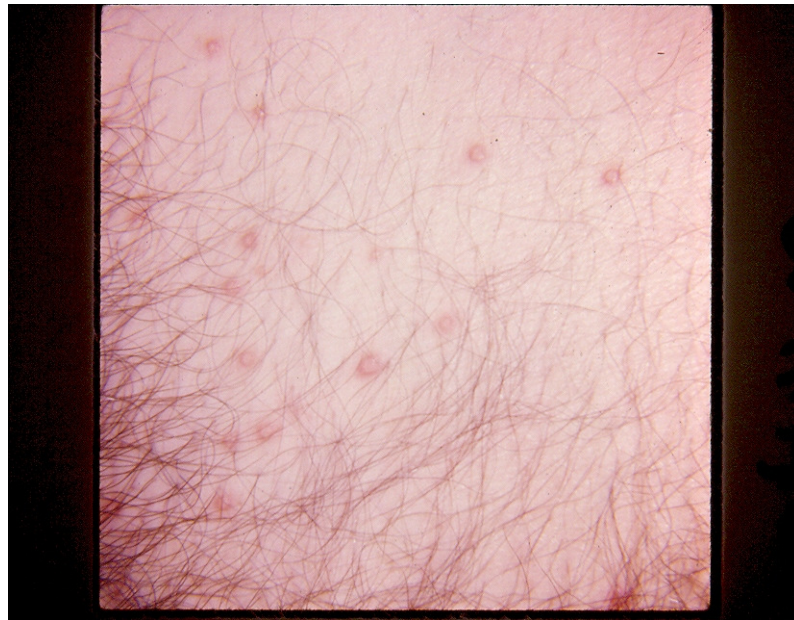
- DNA virus of the pox family
- 1-2 mm shiny, white to flesh-colored, dome-shaped firm papules
- Small central umbilication

Molluscum Contagiosum



- With time lesions more pink and umbilication more obvious
- May involute but can persist for 6-9 mos. before slowly involuting

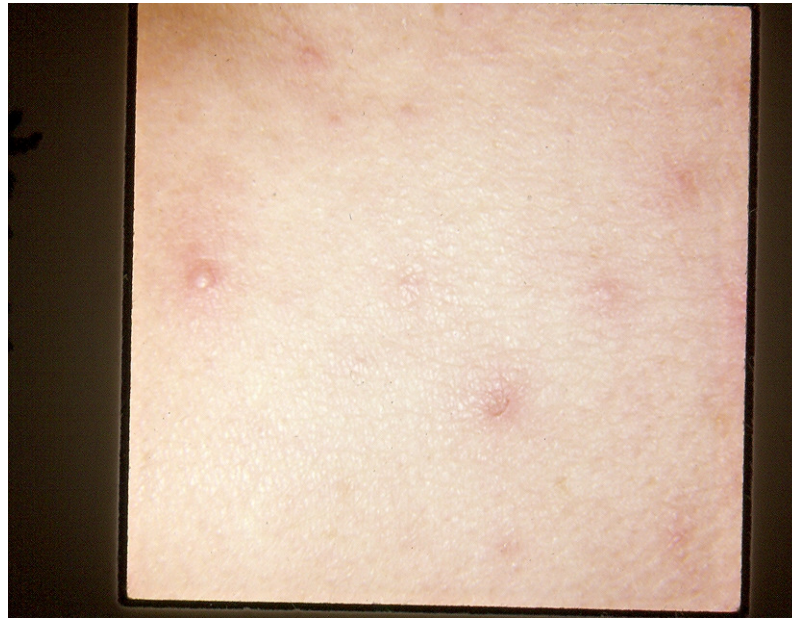
Molluscum Contagiosum



Molluscum Contagiosum



Molluscum Contagiosum







Rx: Molluscum Contagiosum

- Nothing: good hygiene & avoid skin-to-skin contact with others
- Curettage
- Liquid nitrogen
- Cantharidin (must instruct pt. to wash off)
- Imiquimod 5% cream
- Tretinoin
- Acids

HERPES “I & II”

Herpes Simplex

- Type “1” : oral
- Type “2” : genital
- Social boundaries no longer exist

Herpes simplex: grouped vesicopustules on an erythematous base



COLD SORES : HSV I

- “fever blisters” “herpes labialis”
- Primary infection: asymptomatic or severe gingivostomatitis/pharyngitis
- Recurrent infection: prodrome, grouped vesicles on an erythematous base, crust and heal in 7-8 days

Primary Phase

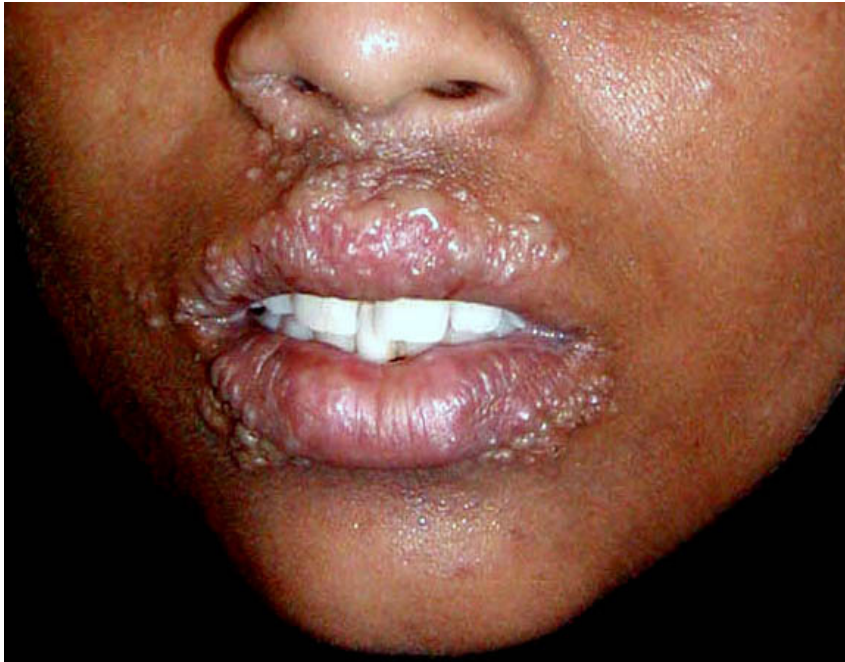


- Viral infection established in the nerve ganglion. Usually asymptomatic but can be symptomatic with gingivostomatitis, pharyngitis,

Herpes Simplex : Primary infection



Secondary Phase



- Recurrent disease at same site
- Intraoral recurrences are rare
- Usually nonscarring unless secondary infection
- Frequency of infections tend to decrease with time

Secondary phase cont.

- Prodromal symptoms: itching, burning, tingling, then grouped vesicles on an erythematous base occur over 2-4 days, rupture and crust, then shed over the next 7-8 days, leaving a pink re-epithelized surface.
- Triggers: UVL on lips, menses, flu or other viral illness (“ fever blisters”)

HSV



Herpes simplex



HSV



Herpes simplex: herpetiform
(grouped vesicles on a red base)



Herpes simplex 2ndary impetigo:
note honey-combed crust



Topical Rx : HSV I

- Abreva (docosanol): 5 x/d for up to 10 d
- Acyclovir Cr (Zovirax) : 5 x/d X 4 d
- Acyclovir Oint (Zovirax): 6 x/d X 7 d
(approved for pts with weakened immune systems only)
- Denavir Cr (penciclovir): q2hr while awake
X 4 d

Hygiene Trick

- Use saran wrap pieces to apply topical products
- Prevents autoinoculation esp. to the eye (herpetic keratitis can be a serious affliction and difficult to treat)
- Q 2-4 hr applications and hand washing issue

Oral Rx : Episodic HSV1

- Acyclovir (Zovirax): 400 mg q8hr X 5d
- Famciclovir (Famvir): 1500 mg X one dose
(other Rx 125 mg B.I.D X 5 d)
- Valacyclovir (Valtrex): 2 gm q12hr X 1 d
(other Rx 500 mg B.I.D X 3d)

Oral Rx : Suppressive HSV1

- Acyclovir(Zovirax): 400 mg B.I.D for up to 12 mo. (other dose regimens: 200 mg T.I.D to 200 mg 5x/d)
- Famciclovir (Famvir): 250 mg B.I.D for up to one year
- Valacyclovir (Valtrex): 1 gm/d if > 9 episodes per year (500 mg/d if < 9 episodes per year)

L-lysine / arginine

- Test tube work
- L-lysine 1 gm/d
- Avoid arginine foods:
 - chocolate incl. cola drinks
 - beer
 - jell-o
 - nuts / peanuts
 - legumes

EDUCATION

- Contagion: direct contact
- Hygiene: towels, washcloths, eating utensils. FINGERS: self-hygiene concerns especially to the eye
- Trigger factors: lip sunscreen, dietary issues (arginine)
- CAN SHED VIRUS WHEN ASSYMPTOMATIC

Other sites via inoculation



- Herpetic whitlow : digit often of health care worker
- Herpes gladiatorum: cutaneous herpes in athletes involved in contact sports (esp. wrestlers)

Herpes Gladiatorum



Herpes: inoculation



Herpes: grouped vesicles on an erythematous base



Herpetic whitlow



Herpetic whitlow



Herpetic whitlow



- Herpetic whitlow
- Herpes gladiatorum
- Eczema herpeticum (Kaposi's varicelliform eruption): widespread dissemination of the virus on the skin of patients with severe skin diseases esp. atopic dermatitis

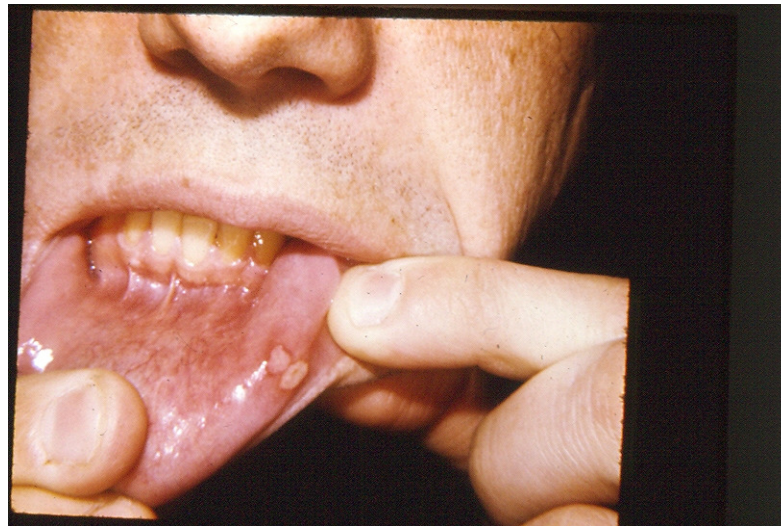
Canker Sores / Aphthae

- Intraoral, recurrent, painful, 1-5 lesions, 2-10 mm, erythematous papular lesions that become necrotic round oval ulcers with a grayish- white fibropurulent membrane & bright red halo, heal 1-2 wks without scarring
- Some cases due to nutritional def.
(vit B2, B6. & B12, folic acid, Fe, Zn)

Aphthae: fibropurulent adherent
membrane



Aphthae: intraoral



Rx aphthae

- ? Hypersensitivity to bacteria in the mouth
- Viscous xylocaine (care gag reflex)
- TCN mouthwashes (care preg females)
- Topical steroid-(Lidex Gel- fluocinonide 0.05%)
- Aphthasol: 5% amlexanox
- Soothing unsweetened apple juice mouth rinses , coat with pancake syrup pre-eating

Genital HSV “2”

- Prodrome- itching or burning sensation
- Grouped vesicles on an erythematous base, rupture to form shallow painful erosions that crust and heal in 1-2 wks., may leave hypopigmentation, hyperpigmentation and scarring.

HSV 2 : Primary Infection



- Vulvovaginitis with fever, lymphadenopathy, headache, and generalized aching.

Primary Infection Rx (initiate within 72 hrs)

- Acyclovir (Zovirax): 200mg q4hr X 10 d
400mg q8hr X 10d
800mg q12hr X 10d
- Famciclovir (Famvir): 250mg q8hr X 10d
- Valacyclovir (Valtrex): 1gm q12hr X 10d

Herpes simplex (genital): grouped vesicles



Herpes simplex (genital)



Herpes: extensive, persistent think
HIV



Recurrent Infection HSV 2

- Acyclovir (Zovirax):200mg q4hr X 5d
400mg q8hr X 5d
- Famcyclovir (Famvir):125mg q 12hr X 5d
1000mg BID X 1d
- Valacyclovir (Valtrex):500mg BID X 3d

Suppressive Therapy HSV 2

- Acyclovir (Zovirax): 400mg BID X 12mo
- Famciclovir (Famvir): 250mg BID X 12mo
- Valacyclovir (Valtrex): 1 gm qd (>9 episodes per yr)
500mg qd (<9 episodes per yr)

Patient education

- Asymptomatic shedding of the virus
- Hygiene
- Discuss Dx with sexual partner(s)

- HSV can be a cause of erythema multiforme and Stevens-Johnson Syndrome