

Pediculosis: Adult & Pediatric

Skin and Integumentary

Clinical Decision Tools for RNs with Additional Authorized Practice [RN(AAP)s]

Effective Date: February 1, 2022

Background

Pediculosis is the human infestation by *Pediculus humanus capitis* (head lice), *Pediculus humanus corporis* (body lice), or *Pthirus pubis* (crab louse) (Winland-Brown & Porter, 2019). Pediculosis infestations are common and occur in all age and socio-economic groups (Winland-Brown & Porter, 2019). Lice are blood-obligate parasites that receive all nutritional requirements from their host (Winland-Brown & Porter, 2019). *Pediculus humanus capitis* and *Pthirus pubis* live and reproduce on humans whereas the *Pediculus humanus corporis* feeds on the host but lives and lays eggs on fomites (e.g., cloth fibers) (Winland-Brown & Porter, 2019). Furthermore, *Pediculus humanus corporis* is the only lice that transmits disease such as typhus (Winland-Brown & Porter, 2019).

Immediate Consultation Requirements

The RN(AAP) should seek immediate consultation from a physician/NP when the client has moderate to severe cellulitis associated with pediculosis as defined in the *Cellulitis* CRNS Clinical Decision Tool (Interprofessional Advisory Group [IPAG], personal communication, October 20, 2019).

Predisposing and Risk Factors

Predisposing and risk factors for head and body pediculosis include:

- crowded housing (e.g., shared beds, crowded schools),
- pediatric clients especially in the fall and winter months,
- faulty application of treatments or treatment failure,
- failure to treat close contacts simultaneously, and
- failure to eradicate lice from fomites (e.g., linens and clothing) at the time of treatment. Socio-economic factors may contribute to this (e.g., lack of running water).

Predisposing and risk factors for pubic pediculosis include:

- sexual contact.

Health History and Physical Exam

Subjective Findings

The circumstances of the presenting complaint should be determined keeping in mind that pediculosis infestation may be asymptomatic. These may include:

- asymptomatic presentation with the first exposure to lice, clients may not develop pruritis for four to eight weeks as sensitivity to lice must occur;
- severe itching following sensitization, generally worse at night. Location of the itchiness may provide information on the type of lice implicated in the infestation. For example, head pediculosis: involves the scalp, body pediculosis involves the body, and pubic pediculosis involves the pubic area but nits may be found in hairs on the abdomen, thighs, axillae, eyebrows, and eyelashes;
- secondary bacterial infection may be present; and/or
- other household members or close contacts may have similar symptoms (Winland-Brown & Porter, 2019).

Objective Findings

The signs and symptoms of pediculosis may include:

- small grey-white nits found at the base of the hair shafts that are difficult to dislodge,
- nits in seams of clothing,
- lice may be visualized,
- excoriation of skin in affected areas due to pruritus,
- cervical and nuchal lymph node enlargement (head lice), and/or
- fever secondary to superinfection typically from Staphylococcus organisms (Winland-Brown & Porter, 2019).

Differential Diagnosis

The following should be considered as part of the differential diagnosis:

- atopic dermatitis;
- bed bugs;
- bullous pemphigoid;
- cholestatic liver disease;
- chronic renal disease;
- contact dermatitis;
- seborrheic dermatitis;

- dandruff;
- delusion of parasitosis;
- dermatitis herpetiformis;
- dirt, lint, or sand;
- dried hairspray;
- drug reaction;
- ecthyma;
- folliculitis;
- impetigo;
- insect bites;
- miliaria;
- pityriasis rosea;
- polycythemia vera;
- psoriasis;
- scabies;
- seborrheic dermatitis; and/or
- white piedra (fungi, *trichosporon beigelii* on the hair shaft) (Winland-Brown & Porter, 2019).

Making the Diagnosis

The diagnosis is based on history and physical findings, including live adult lice, nymphs, or nits on the head, body, or pubic area (Winland-Brown & Porter, 2019).

Investigations and Diagnostic Tests

Investigations and diagnostic tests are typically not indicated (Winland-Brown & Porter, 2019).

Management and Interventions

Goals of Treatment

The primary goals of immediate treatment are to eradicate infestation, prevent and/or treat secondary infection, and relieve pruritus (Winland-Brown & Porter, 2019).

Non-Pharmacological Interventions

The RN(AAP) should recommend, as appropriate, non-pharmacological options:

Head Lice

- Manual delousing using a fine-toothed comb or an electronic comb that electrocutes the lice may be considered (Winland-Brown & Porter, 2019).

Body Lice

- Simple hygienic measures, including bathing and laundering of infested clothing and linens in hot water, are effective management.
- Alternative strategies for items that cannot be washed are dry cleaning or storing them in a sealed plastic bag for two weeks or put in freezer for 48 hours. If lice are adherent to body hair, then pediculicides may be helpful (Winland-Brown & Porter, 2019).

Treatment of lice and nits found on eyebrows or eyelashes can be done manually using a nit comb or with application of an ophthalmic-grade petrolatum ointment (Sterilube, Duolube) to the eyelid margins bid to qid for 10 days. (Winland-Brown & Porter, 2019; Karabela, Yardimci, Yildirim, Atalay, & Karabela, 2015).

Pharmacological Interventions

The pharmacological interventions recommended for the treatment of pediculosis are in accordance with the *RxFiles Drug Comparison Charts* (RxFiles Academic Detailing Program, 2021) and *Parasitic Skin Infections* (Winland-Brown & Porter, 2019).

Pediculicides

Treatment may temporarily exacerbate the pruritus erythema and scalp edema of lice infestation. Burning/stinging, tingling, numbness, or scalp discomfort is usually transient and mild. Do not recommend pyrethrin products to treat lice on eyelashes or eyebrows.

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 2 months of age) and Adult (may use in pregnancy)					
	Permethrin 1% creme rinse	Head lice: Wash hair with conditioner-free shampoo, rinse with water, and towel dry. Apply Permethrin 1% to saturate the hair and scalp, leave on for 10 minutes and then rinse.	topical	apply day 1 and repeat in 7 days	n/a
		Pubic lice: Saturate the pubic hair with Permethrin 1%; leave on for 10 minutes then rinse.			

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 2 years of age) and Adult (may use in pregnancy)					
	Pyrethrins/ piperonyl butoxide (R&C Shampoo)	Head and pubic lice: Thoroughly saturate dry hair with product. Massage into scalp/skin and leave on for 10 minutes. Add a small amount of water and work the shampoo into the hair and skin to form lather. Rinse thoroughly.	topical	apply day 1 and repeat in 7 days	n/a
OR	Isopropyl myristate 50%/ cyclomethicone 50% (Resultz)	Head lice: Apply to dry hair and scalp. Allow product to remain on hair and scalp for 10 minutes. Rinse off with warm water.	topical	apply day 1 and repeat in 7 days	n/a
OR	Dimeticone 50 % (NYDA)	Head lice: Spray carefully all-over dry hair. Massage in until hair is saturated with solution. Leave solution on hair. After 30 min, comb hair with a lice comb. Allow solution to dry on hair for at least 8 hours and then wash.	topical	apply day 1 and repeat in 8-10 days	n/a

Client and Caregiver Education

The RN(AAP) provides client and caregiver education as follows:

- Counsel about the appropriate use of medications (dose, frequency, application, compliance, side effects, etc.).
- Suggest informing schools and daycares so they can take appropriate action.
- Instruct that close contacts should be treated.
- Advise that hair conditioner should not be used before applying pediculicides and that hair should not be washed for one or two days following treatment after the lice medicine is removed.
- Advise to refrain from sharing combs, brushes, hats, etc.
- Advise that all items that have been in prolonged or intimate contact with the client's head or body (bedding, hats, etc.) should be cleaned at the time of first treatment. This can be accomplished by washing them in hot water for 15 minutes or putting them in the dryer on the hottest setting. For items that cannot be washed or put in a dryer, place them in a sealed plastic bag for two weeks or for 48 hours at -10°C.
- Advise that mattresses, carpets, furniture (which can harbor lice) be vacuumed thoroughly.
- Advise that pyrethrins/piperonyl butoxide (R&C II) aerosol spray can be used to clean items by saturating the area (five to 10 squirts) and washing it off after 30 minutes.
- Advise that the use of household pesticide sprays and kerosene is unsafe and potentially fatal (Winland-Brown & Porter, 2019).

Monitoring and Follow-Up

The RN(AAP) should advise that follow-up in one week is recommended to assess response to treatment. The client should be instructed to return immediately if signs of secondary infection develop. Clients diagnosed with pubic pediculosis should be evaluated for sexually transmitted infections (STIs) and all sex partners from the previous month should be informed that they are at risk for infestation and should be treated. Clients should avoid sexual contact until after they have been treated and reevaluated.

Complications

The following complications may be associated with pediculosis:

- recurrent infestation;
- secondary infection which is typically due to *Staphylococcus aureus* or Group A streptococcus; and
- psychological issues such as embarrassment, or delusion of parasitosis (Winland-Brown & Porter, 2019).

Referral

Refer to a physician/NP if client presentation is consistent with those identified in the *Immediate Consultation Requirements* section or if the client does not respond to treatment (IPAG, personal communication, October 20, 2019).

References

- Anti-Infective Review Panel. (2019). *Anti-infective guidelines for community-acquired infections*. MUMS Guideline Clearinghouse.
- Karabela, Y., Yardimci, G., Yildirim, I., Atalay, E., & Karabela, S. N. (2015). Treatment of phthiriasis palpebrarum and crab louse: Petrolatum jelly and 1% permethrin shampoo. *Case reports in medicine*, 2015, 287906. doi:10.1155/2015/287906
- Rx Files Academic Detailing Program. (2021). *RxFiles drug comparison charts* (13th ed.). Saskatoon Health Region.
- Winland-Brown, J. & Porter, B. (2019). Parasitic skin infections. In L. Dunphy, J. Winland-Brown, B. Porter, & D. Thomas (Eds.), *Primary care: The art and science of advanced practice nursing – an interprofessional approach* (5th ed., pp. 159-167). F. A. Davis.

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