

Research Activities

Pediculosis (head lice) is transmitted through direct head to head contact with a person with head lice.

Researchers in Queensland examined the hats worn by over 1000 school children while their heads were being checked for head lice. **No** head lice were found on the hats. None at all. However there were over 7000 head lice on the heads of the children.

“Head lice do not live or breed on animals, bedding, furniture, carpets, clothes or soft toys. They cannot spread by sharing hats”. (NHMRC Staying Healthy – Preventing infectious diseases in early childhood education and care services, 5th edition)

Transmission of head lice (*Pediculus capitis*).

Although the global increase in pediculosis is well recognised, little is known about the exact nature of head lice (*Pediculus capitis*) transmission. Several mechanisms have been proposed such as head-to-head and fomite transmission, but some contention remains concerning the primary transmission route. This study investigated spatial and kinetic factors influencing the dynamics of hair-to-hair transfer to further clarify how head lice transmit from head to head. Forty-eight factorial experimental trials, with 10 replicates each, were conducted using 480 freshly caught *P. capitis* from primary school children. In the trials, each louse was placed on a stationary suspended hair or a mobile hair and was presented with mobile or stationary hairs for transmission. All hair passes involved contact between the uninhabited hair and the lice. Hairs without a louse were presented dorsally, laterally and ventrally to the louse. They were also passed from head to tail or from tail to head and were moved at speeds of 8 m and 4 m per min. The proportion of *P. capitis* transmission was highly dependent on the specific setting. The tail-to-head direction, slow movement and a parallel direction all proved favorable for transmission. The highest transfer proportion of *P. capitis* (85%) was observed in the setting where the presented hair was laterally slow moving in a parallel way from tail to head. No transmission was observed under an angle of 90 degrees. Hair-to-hair *P. capitis* transmission occurred more frequently when hairs were in particular physical and kinetic relationships. This suggests that head lice are less likely to take advantage of many proposed fomite transmission scenarios and are most likely to rely on head-to-head contact for transmission. Lice survived immersion for 30 minutes in fresh and salt water and in chlorinated water from fresh and saltwater swimming pools. **In a survey of dust vacuumed from the carpets in 118 primary school classrooms we found no lice. The children using those classrooms had 14,033 lice on their heads.** These studies showed that lice used specific cues in transferring between hairs. Potentially they could survive in a swimming pool, but may not actually become dislodged. The risk of acquiring lice from carpets in school classrooms and, by extrapolation, homes, is zero.

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