

## Bed-Bugs and Bites

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Bed-bugs are Hemiptera (“half-winged” bugs), flat, oval insects, with very short functionless forewings. The adults are 5mm long: reddish brown in colour and become purple after feeding. The principal host is man, though other warm-blooded animals can be parasitised. They are found in human habitations throughout the world.

As bed-bugs cannot fly, they must either crawl or be passively transported in clothing, luggage, furniture, books and other harbourages. They demonstrate great ability to withstand many months without feeding.

This increases their chances of surviving transportation and the insects’ world wide distribution confirms their breeding success. In cool climates, bed bugs reach their peak numbers in early autumn, when all stages in the life cycle will be present. With colder weather, activities decrease: egg-laying ceases and the development of the juvenile forms slows down.

Bed bugs are not regarded as disease carriers, but their blood feeding can cause severe irritation in some people, resulting in loss of sleep. Any household can be invaded by bed-bugs, but infestations will only become established in premises with low standards of hygiene. Bed-bugs are therefore generally associated with poor, crowded and unhygienic conditions.

However there are recurrent reports of their appearance in quality American hotels and they are often inhabitants of low class hotels in less salubrious parts of the world. Holiday resort areas have been noted for bed bug infestation with hotels, hostels and holiday camps significant sources.

Bed-bug excrement gives a characteristic speckled appearance to insect harbours, whilst their “stink glands” confer a distinctive and unpleasant almond-like smell on infested rooms. Nocturnal creatures, both juveniles and adults, live similar lives, hiding away in cracks and crevices most of the time and coming out at night, usually just before dawn, to feed on blood from sleeping hosts.

Hiding places are close to where hosts sleep: in the bed frame or the mattress, in furniture, behind the skirting, behind the wallpaper, or where there is dark harbourage during daylight hours. The increased use of central heating, in homes and hotels, allows continued feeding and proliferation during winter. With frequent feeding at normal room temperatures (18-20C) adults live for 9 – 18 months. Under these conditions nymphs feed at about 10-day intervals. If necessary both can survive long periods without food. Under cool conditions (13C) starved adults can survive for a year.

### **Case History 1**

A 21 year old, female student came to surgery complaining of painful very itchy weals on both legs round the ankle and calf. She had recently returned from an expedition in Equador.

She had been sleeping rough for some weeks in a malarial area but, had been unaware of any bites at this time. Her last two nights in the country were spent in an up-market rural hotel but, she said that the rooms had been dull and gloomy and had a musty smell. She had slept under a mosquito net, but had been annoyed to find in the morning that she had been bitten about the feet and assumed that the netting had not been tucked in at the bed foot.

She assumed a mosquito had attacked her skin and was concerned about the malaria risk. On examination, she had several clusters of whitish swollen lumps on her lower legs. These had been caused by bed bugs. She was relieved at the diagnosis, but upset that she had attracted the insects which she believed related to poor personal hygiene. The swellings disappeared within a few days and the itch was relieved with hydrocortisone cream.

### **Case History 2**

Two boys and girls on an expedition to Kashmir spent a night in separate dormitories in a youth hostel in Srinagar. In the morning the girls were complaining about bites on their calves and feet. The boys displayed bites on thighs and abdomen.

The bites were itchy, with the girls' ones lumpy and whitish in colour whereas the boys' were scattered and red and slightly raised round the bite. The boys had slept on the floor using borrowed blankets, whereas the girls had slept in hostel beds on mattresses. The beds and mattresses had been harbours for bed bugs and the blankets with fleas. The insects had left their female hosts, but several of the lads were unwilling hosts to fleas. Although both sexes continued itching their way on their hike into the mountains, the boys' itches settled quickly while the girls sported blotchy itchy legs for some weeks. Bed-bugs do not normally carry infection, but fleas can carry nasty illnesses.

### **Control Measures for Bed-Bugs**

The control measures used must be thorough and be directed at all insect hiding places. If they are suspected, a close inspection of the bed, the mattress around the seams, the back of the headboard, etc. should reveal their presence. The use of a pyrethroid based aerosol sprayed lightly around these areas may help, as the insects will be driven out of their hiding places. The finding of eggs, or egg cases and the blackish spots of bug excrement, will also indicate their presence. Infested bedding (e.g. sheets) and clothing should be laundered, or burnt and the fabric of infested rooms extensively cleaned. Eradication with insecticides should include beds, other furniture and harbourages in the fabric of infested rooms. A professional pest control organisation should be used, as detection and treatment of all bed bug hiding places is a job requiring experience.

### **Treatment Summary**

Bed-bug bites often give rise to a hard, off-white swelling distinguishing it from the flea bite, which leaves a dark red spot surrounded by a reddened area. The pain and itch from a bug bite can last for several weeks whereas flea bite effects wear off in a day or two. Several bites close together may coalesce and cause quite marked skin swellings which are intensely itchy as well as sore. A common site is round the ankles, accessed when the bed bug has crawled in below loose sheets at the foot of the bed. They can wander quite far up the leg before settling for a meal. The unwilling host may believe them to be mosquito or flea bites, but turns up for diagnosis and treatment when the irritation has lasted a week or two after return from a foreign holiday when flea and mosquito bites would have settled. The intense itch results in scratching and secondary infection can occur. Simple bites respond to anti-inflammatory

ointments with the addition of an antibiotic if badly infected. The swellings gradually disappear over a week or two without leaving marks.

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