Imagine a hypothetical conversation with an Extension client: Client: “Something’s eating me up! It itches and I have bite marks where they got me.” Extension agent: “Can you bring in a sample of what’s causing the bites because I won’t be able to make any recommendations until I know what it is.”

There are three directions this simple conversation can take. Getting to the root of the problem is a process of elimination. Use the following as a guide.

**Itches**

First, the client might actually bring in an insect or other arthropod that is an identifiable culprit of the bites or stings. Fleas, ticks, biting midges and mosquitoes, lice, and fire ants are common obvious culprits. Once these obvious culprits are identified, standard Integrated Pest Management principles can be recommended to control these pests, and the problem should decrease in time.

Sometimes the causes of itching are more obscure. Common obscure culprits include mites such as:
- Chiggers
- The human itch mite that causes scabies
- Bird mites and mites on rodents that incidentally feed on humans

- The straw itch mite, cheese mite, and other grain and mold mites that can also cause itching or an allergic reaction
- Follicle mites that live in human hair follicles. Allergic reactions to this mite are rare and are characterized by acne or loss of eyelashes.

The house dust mite is commonly blamed as the cause of itching, but research indicates that this mite is more connected with asthma and respiratory-related allergies. Most mites, including the house dust mite, require a microscope for species identification. In general, mites range in size from 1⁄200 inch to 1⁄25 inch.

**How to Take a Mite Sample**

There are three methods that can be used to collect mite samples: the tape method, the vacuum cleaner bag method, and the skin scrape method. Give the client the following instructions for collecting mite samples.

**The Tape Method**

Take a piece of clear tape, and place the sticky side on the skin where the itching or “creepy-crawly” sensation is being felt. Two-inch-wide clear tape is best. It is very important that the tape be applied to the area at the time the sensation occurs, not after the sensation passes. Gently remove the tape from the skin, and stick the tape to a clean piece of white paper or an index card. Submit the sample for identification as usual. This is the easiest way to identify mites if they are walking across the skin.

**The Vacuum Cleaner Bag Method**

Using a clean vacuum cleaner bag, vacuum the rooms where the itching seems to be the worst. Vacuum carpeting and cracks and crevices of sofas and bed mattresses, especially around the ribbing. Submit the entire vacuum cleaner bag for identification.

This method is the least effective and probably the most labor intensive in terms of collecting the sample and then trying to locate any mites among the dust and other debris. Even if mites or other small arthropods are found in the sample, they may not be the cause of the itching.

**The Skin Scrape Method**

This method is best performed by someone who has medical training. Commonly, a microscope slide is scraped against the area of the skin where the itching or “creepy-crawly” sensation is being felt. It is very important that the slide be applied to the area at the time the sensation occurs, not after the sensation passes. Gently remove the tape from the skin, and stick the tape to a clean piece of white paper or an index card. Submit the sample for identification as usual. This is the easiest way to identify mites if they are walking across the skin.
Other Arthropod-Related Causes of Itching

While mites are commonly blamed for obscure causes of itching, there are some other less common arthropod-related causes that should also be considered, such as:

- Stinging caterpillars that have urticating (stinging) hairs (For more information, see Alabama Agricultural Experiment Station Bulletin 633.)
- Exuviae (cast-off insect skins) of dermestid beetle larvae
- Silk produced by gypsy moth caterpillars and tent caterpillars that can cause itching when small particles become airborne
- Psocids, springtails, thrips, clover mites, and other plant feeders, which can cause itching when they incidentally probe skin with their mouthparts
- Parasitic infections that should be treated as medical problems
- Bed bugs and bat bugs, which are related to bed bugs but are found on bats that can live in attics or walls

Bed bugs are rare these days. They come out and feed on people at night. You can inspect for them during the day by stripping bedding and turning the mattress. Check carefully along cracks and crevices. A flushing agent can help chase bed bugs out of their hiding places. If you feel the need to flush them out, call a professional pest control operator (PCO) for help. PCOs have access to flushing agents, and they know how to apply them.

The other arthropod-related causes listed above can be identified using the same methods as for sampling mites. The questionnaire at the back of this publication will also help you gather more information to help in the process of elimination.

Once identification has been made, standard Integrated Pest Management procedures can be followed to control these pests. Mites and small arthropods are particularly sensitive to desiccation, so running the air conditioning to keep relative humidity at about 50 percent is effective in these control programs.

Once the obvious and obscure causes of itching have been eliminated as possibilities, clients should be referred to medical doctors. Medical doctors who are careful in their examination will be able to help identify obscure causes of itching, as well as physical or psychological causes. The following causes of itching are not arthropod-related.

Pest control operators should not treat cases that fall within the categories of “Illusions” and “Phobias.” Homeowners should not be encouraged to treat their own premises, and Extension personnel should not give recommendations for arthropod pests unless the pests can be found.

Illusions

Some causes of itches are in the category of illusory parasitosis. Illusory parasitosis is a condition in which there is an identifiable cause of itching but in which a client has mistakenly identified active infestations of insects or other arthropods as the cause. Once these clients discover that there is a cause for their itching and that it is not arthropod-related, they no longer insist that they are being infested by an arthropod. This distinction is very important in separating illusory parasitosis from delusory parasitosis, which is discussed later.

Other actual causes of itching that fall under this category include but are not limited to:

- Insect bites that occurred earlier but itched later
- Eczema, contact dermatitis, and idiopathic urticaria (unknown causes of itching)
- Cutaneous sensitizers such as dyes, waxes, some plastics, poisonous plants
- Temperature and humidity changes
- Dust, paper particles, and other fibers such as those from clothing, carpeting, and furniture
- “Tight Building Syndrome,” which occurs in buildings that recirculate stale air and potential contaminants instead of fresh air
- Indoor air pollution caused by consumer products such as fresh paint, propellants used in aerosols, and other “inert ingredients” in homeowner pesticide products
- Prescription drugs
- Drug abuse
- Sun
- Cosmetics
- Perfumes and other fragrances
- Detergents
- Carpet-cleaning shampoos
- Tobacco smoke, which can contain up to 3,800 different chemical compounds
- Chemical resins used as adhesives and wood preservatives
- Fungal infections such as athlete’s foot
- Liver disease
- Renal (kidney) disease
- Diabetes
- Thyroid disorders
- “Shingles” (Herpes zoster)
- Pregnancy
- “Cable mites,” which are not mites at all. They are splinters from the material that covers cables.
“Paper mites,” which are not mites at all. They are slivers of paper that irritate the skin.
- Carbonless paper used in multipart forms
- Pollen
- Poison ivy, poison oak
- Food allergies that cause hives and other allergic reactions

Filling out the attached questionnaire will help you identify obvious and obscure causes, as well as causes that contribute to illusory parasitosis. If you have eliminated obvious and obscure causes and the nonarthropod causes listed under “illusory parasitosis” but the client still insists that “bugs are invading them,” you may be dealing with a case of delusory parasitosis.

Phobias

The final category of complaints of itching is delusory parasitosis (DP). DP refers to the mistaken belief that insects or other arthropods have invaded or infested one’s body. While these cases are rare, they can be troublesome and difficult.

How do you identify DP? A client profile might include the following.
- Someone who complains of being “infested by numerous ‘bugs’” but who can never produce a sample for identification. If a sample is submitted, it may contain a collection of lint, hair, fiber, jagged pieces of plastic, small bits of gravel, skin particles, scabs, grass seeds, crushed pieces of insects, or insects that are not known to cause the described symptoms. While some of these items can cause itching, the client will insist that a “bug” is infesting them, and this “bug” is responsible for his or her discomfort.
- Someone who can describe these “bugs” in detail. You may hear descriptions such as:
  1. “These things burrowed in my skin and I had to dig them out with my fingernail (or nail file, knife, some other sharp object).”
  2. The “bugs” are black and white or are described as “about the size and color of salt and pepper” but may change color later.
  3. The “bugs” can jump or fly.
  4. The “bugs” may be seen coming out of common household items such as toothpaste or cosmetics or other unexpected items such as cotton bond paper.
  5. The “bugs” are “flea dirt,” which when observed under a microscope turn out to be particles or skin or bits of scab that the client has dug from his or her skin.
  6. The “bugs” tend to attack clients at night.
  7. The “bug” activity is cyclical. Often, a client will spray in violation of the label directions and experience an outburst of “bug” activity shortly after the spray (for about 2 days). The client may attribute the activity to the anger of the “bugs.” The “bugs” may then “settle down” for a few days. These clients are probably experiencing a dermatological reaction to the pesticides they have used in their environment.
- Some clients are highly educated but cannot be convinced with reason concerning their affliction. These clients are absolutely convinced that they know the cause of their discomfort. They express anger and irritation at “incompetent doctors” who cannot or will not agree with their self-diagnosis.
- Clients who are men and women between the ages of 20 to 40 experience DP equally, but after the age of 50, women tend to experience DP at a rate three times higher than men do.
- Often, these people are reclusive. If these clients live with someone, it is not uncommon for the other person to begin taking on the symptoms of the person who is experiencing DP.
- They may have other health problems such as high blood pressure or diabetes.
- They may have recently experienced the loss of a spouse or someone close.

The symptoms that clients with DP describe are often real. The client may have welts, eczematoid, or feel itching, but the pattern of the welts and scratching are inconsistent with flea bites, chigger bites, scabies infestations, or other arthropod-related causes of itching. At no time should Extension personnel make control recommendations in an attempt to alleviate these clients’ symptoms.

Clients experiencing DP often come up with self-remedies such as:
  1. Overusing pesticides in their homes, which can exacerbate dermatological responses
  2. Bathing in bleach
  3. Giving themselves flea dips
  4. Wrapping themselves in kerosene-drenched blankets when they sleep or bathing in kerosene
  5. Washing their hair with gasoline
  6. Washing everything in hot water several times
  7. Putting their clothes in a plastic bag and setting off a flea bomb inside it
  8. Burning their clothes or other offending items
  9. Selling cars and homes in an effort to get rid of the suspect infested items
How do you advise someone who appears to be experiencing DP? Recommend that they see a medical doctor because without an insect or arthropod sample, you cannot make any control recommendations to help them. Clients who experience DP are suffering, but the cause is not arthropod-related. Be firm about their seeking medical assistance—that is the best recommendation anyone can give to help these clients.

References


Questionnaire
Please answer the following questions to the best of your ability. Return the questionnaire to your county Extension office. Use more space if needed.

Name ________________________________________________________________
Address ______________________________________________________________
Date _____________ Referred by _________________________________________
Male ____ Female ____ Age ________
1. Description of problem: Bites ____ Itching ____ Rash ____ Others
2. Problem occurring on: Hands and Arms ____ Legs ____ Eyes and Nose ____
   Chest ____ Waist ____ Ankles ____ Others ____
3. Date problem began __________
4. Specimens recovered from:
   Body (specify part) __________________________________________________
   House or apartment (specify room) _____________________________________
   Car ___ Carpet ___ Furniture ___ Other _________________________________
5. Physicians seen (specify) _____________________________________________
6. Diagnosis __________________________________________________________
7. Doctor’s recommended treatment ______________________________________
8. How many people are being affected, and what are their symptoms? _______
   ___________________________________________________________________
9. Describe the pests (color, shape, size). Do they walk, crawl, fly, hop? _______
   ___________________________________________________________________
10. Do they change form? _______________________________________________
11. Can you describe their life cycle? _____________________________________
12. Where do they come from? __________________________________________
13. Where did they originate? When did you first notice them? _______________
   ___________________________________________________________________
14. Have you been able to collect them? _________________________________
15. Have you submitted them for identification? ___________________________
16. If yes, what were they identified as? _________________________________
17. What initiated the problem? _________________________________________
18. At what times of day are they most active? ____________________________
19. What do the bites look like? _________________________________________
20. Where are the bites located? _________________________________________
21. What do the bites feel like? _________________________________________
22. What have you treated the house with? (Name products, including cleaning
   agents, insecticides, etc.) _____________________________________________
23. What treatments have you used on your body? _________________________
24. Have you had a pest control operator treat your home inside or outside?
   ___________________________________________________________________
25. If so, what product did they use? _____________________________________
26. What other techniques have you tried? Washing the bedding? Vacuuming?
   Mopping? Moving out of the house? _____________________________________
27. What are you allergic to? ____________________________________________

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For more information, call your county Extension office. Look in your telephone directory under your county’s name to find the number.