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Bugged by Itching?

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I can imagine why Van Gogh cut off his ear. About ten years ago some infernal, multilegged creature crawled deep into my ear. The itch was extreme — torture even though it wasn't a pain. I poured water into the ear to flush the critter out. When that failed, I poked at the ear with various utensils — not a smart approach, but the tickling was driving me mad. I was about to crack when an ant scurried out. Why do we itch? Why does a small patch of eczema or the bite of a puny mosquito cause so much discomfort? And what's the best way to soothe an itch?

Rhymes with . . .

Itching — "pruritus" in medical parlance — is a natural protective mechanism that evolved over millennia to alert animals to the presence of parasites and other irritants on the skin. Itching is not only the major symptom of skin disease; it is also a common manifestation of systemic illness, such as kidney failure.

Perhaps most interesting is that itching reflects our thoughts and emotions. Some people become itchy when they're anxious or depressed. Some people scratch their heads when they're deep in thought. It's easy to make light of itching, but even mild itching can exasperate people; severe and chronic cases can devastate lives. "We have some t-cell lymphoma patients who itch so badly that they are suicidal," says Dr. Patrick Kerrington, a dermatologist at the V.A. Medical Center in Little Rock, Arkansas.

It seems that everything causes itching. Skin disorders, obviously, are a major culprit. The 15 million Americans who suffer from eczema — an inflammatory condition in which hard, scaly, or crusty lesions develop— know this all too well. Acne can itch. So can scars.

Various bacterial, fungal, and viral infections also cause itching. These include athlete's foot, candida, chicken pox, folliculitis (an infection of the hair follicles, often caught in hot tubs), herpes, HIV infection, jock itch (which can affect women as well as men), rubella, shingles, and vaginitis. And, as I found out, little critters — ants, bedbugs, fleas, lice, mites, pinworms, and the like — can cause big itches.

Some itches coincide with the seasons. "Winter itch," a common problem among the elderly, strikes when biting cold and indoor heat dry the skin. Hay fever, with itchiness of the eyes and nose, accompanies spring. Summer brings jellyfish stings, mosquito bites, poison-ivy rashes, prickly heat, and sunburn.

Allergies — to cosmetics, detergents, or the nickel in earrings watchbands — can cause a host of itches. The itching of hives (urticaria), an allergic disorder marked by swollen patches of skin, is intense. Itching of the back, chin, or neck commonly precedes attacks of asthma, which often stems from allergies. Some women itch after having sexual intercourse — from allergies to latex condoms, semen, or sweat.

Other causes of itching include aspirin, birth-control pills, the antimalarial drug chloroquine, morphine, penicillin, and rabies shots. Sometimes it's not the medication itself that causes the itch, but the dyes or preservatives in the product.

Often, itching is not just skin-deep. It is a symptom of many systemic diseases, including diabetes, kidney failure, liver disease, Lyme disease, nerve disorders, thyroid disease, and various forms of cancer. In some cases, itching is the first symptom of a serious internal illness. Diffuse, whole-body itching is an early symptom of kidney failure. In rare cases, a nasal itch heralds a brain tumor.

Odd itches include aquagenic pruritus, which results from contact with water, and mitempfindungen, an itch in one spot on the body that results from scratching another spot.

Some itches are all in the mind. Various mental conditions, from obsessive-compulsive disorders to delusional syndromes, compel people to scratch. And anxiety can worsen real itches.

The Orphan Nobody Wants

Despite the ubiquity of itching, scientists know relatively little about its physiology. In a 1992 *New England Journal of Medicine* editorial, English dermatologist Malcolm Greaves lamented that itching "remains an orphan symptom, frustrating to patients and their physicians and sadly neglected by neurophysiologists and pharmacologists."

Neurophysiologists do know that some external stimuli — such as a mosquito landing on one's leg — trigger certain receptors between the outer and inner layers of the skin. These receptors send impulses through special nerve fibers, called "C fibers," to the spinal cord and finally to the cerebral cortex. After this split-second relay, one realizes, for example, that a bug is on one's leg, and the cortex signals the hand to remove it — unless one is reacting to more urgent matters, such as a bee circling one's head. "When your mind is not occupied, that neural signal from the periphery becomes a loud noise," explains Dr. James Leyden, professor of dermatology at the University of Pennsylvania School of Medicine. "So when you try to go to sleep, that itch that wasn't too bad during the day now becomes unbearable."

In the meantime, the C fibers release neurotransmitters — chemicals that regulate nerve impulses. The most important of these C-fiber neurotransmitters is *substance P*, which dilates blood vessels and indirectly activates *mast cells*. These release histamines, which cause redness and swelling of the skin. Some allergens affect mast cells directly, aggravating the itch.

C fibers also convey pain signals, and for decades scientists considered itching a dull form of pain. Dermatologists now regard itching and pain as different mechanisms. A few observations make this understandable: Pain elicits

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withdrawal: A person in pain tends to avoid touching the painful areas on his or her body. Itching, however, elicits scratching. Opiates can both relieve pain and promote itching. And itching and pain can occur simultaneously at a single bodily site.

To Scratch or Not to Scratch

In "Taboo to Boot," his ode to itching, Ogden Nash wrote: "One bliss for which/There is no match/Is when you itch/To up and scratch." Scratching, as Nash recognized, is taboo. While occasional, discreet scratching probably won't raise an eyebrow or a nose, repeated, public scratching can get one arrested. According to the dermatology journal *Cutis*, a 36-year-old man was incarcerated for public scratching. The man, a machinist, had just finished a project that had generated a huge amount of fiberglass dust. As he waited in line at a pharmacy, he developed an epic itch, particularly in his groin, and began to scratch. An offended customer called the police, who arrested the machinist for "lewd and indecent behavior." He spent a night handcuffed in jail before the charges were dropped.

Scratching may feel good, but it's not innocuous: It can irritate the skin and so perpetuate itself. This "itch-scratch cycle" can lead to infection or eczema. Dermatologist Jeffrey Bernhard, an itch expert at the University of Massachusetts Medical School, says: "With certain itches, one scratch is too many, and a thousand are not enough." There are many ways to break the itch-scratch cycle, including some home remedies and over-the-counter antipruritics. However, some dermatologists dispute the alleged effectiveness of such antipruritics, asserting that they relieve only the mildest itches. Antihistamines can relieve allergy-related itches, but to have a significant effect, they must be taken by mouth, before an attack. And antihistamines can cause drowsiness. If nonprescription products fail, a visit to a doctor may be in order.

When to See a Doctor

There is no rule of thumb for determining whether one should see a physician concerning an itch. However, itching over the entire body, or without a rash, may be a sign of serious internal disease. Either symptom should prompt a visit to the doctor. Generally, treatment of the underlying illness relieves itching of this sort.

Untamable but otherwise ordinary itches are rare. Treatment, of course, depends on the diagnosis. A powerful hydrocortisone preparation may relieve the symptoms of psoriasis, but the same preparation can aggravate a fungal infection. Prescription drugs that contain hydrocortisone are especially useful against localized itches. The histamine-blocker doxepin, a new prescription drug, is the first good alternative to hydrocortisone. Perhaps its biggest drawback is that one should apply it four times daily. It also causes drowsiness in some patients.

Dermatologists are still looking for an "aspirin" or a "magic bullet" for itching — a single drug that can uproot the problem. Probably the next breakthrough will come from research on itch receptors and the neurotransmitters involved in inflammation.

Meanwhile, experimental treatments for itching include capsaicin, the chemical responsible for the hotness of cayenne pepper and chili peppers. As an ingredient in some topical medications for arthritis and pain, capsaicin depletes the neurotransmitter "substance P" from itch receptors, thus blocking the transmission of itch signals. Capsaicin has limited utility as an antipruritic, however. Also of questionable utility is EMLA cream, a topical (skin surface) anesthetic whose active ingredients are lidocaine and prilocaine.

In addition, researchers are experimenting with naloxone, which blocks opiate receptors (cellular sites at which opiumlike chemicals bind) in, and possibly outside, the brain and spinal cord. Naloxone has been shown to relieve itching caused by liver disease, by lymphomas of the skin, and by the use of morphine.

In theory, TENS (transcutaneous electrical nerve stimulation), mechanical vibration, and acupuncture have the potential to lessen itching, either by counterstimulating itch pathways or by stimulating itch inhibition pathways. Information on whether these methods can relieve itching is scarce, however.

Itching for a Telethon?

Itching seems easy for physicians and scientists to ignore — unless they themselves are itchy. Perhaps the lack of interest in itching — and the resultant lack of research — calls for a prominent symbol of the problem: a very itchy movie star or athlete. On the other hand, I wouldn't wish a bad itch on anybody (except a few politicians).

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The terms "eczema" and "dermatitis" encompass all conditions characterized by itchiness and localized browning, reddening, thickening, scaling, blistering, or oozing of the skin. The cause of atopic (allergic) dermatitis, the most severe and persistent form of eczema, is unknown, but the condition tends to run in families with allergies. Allergens, stress, and chemical or toxic irritants aggravate atopic dermatitis, which chiefly affects children and young adults. Direct exposure to allergens or irritants causes contact dermatitis. Neurodermatitis (lichen simplex chronicus) results from excessive scratching.

Itching and Aging

Itching seems a natural consequence of aging: The gradual atrophy of oil glands leaves the skin dry. Residents of nursing homes are especially at risk, since these facilities often are overheated. Many elderly persons mistakenly regard their itches as infections and treat them with irritants such as alcohol, bleach, or ammonia. Dr. Patrick Kerrington of the V.A. Medical Center in Little Rock advises seniors to apply emollients — petroleum jelly or vegetable shortening, for example — to the skin immediately after bathing.

"If you're 85, and not as mentally stimulated, then the itch becomes a loud noise all day long," says the University of Pennsylvania's Dr. James Leyden. For this sort of itch, the best cure is keeping busy. Dr. Jeffrey Bernhard of the University of Massachusetts theorizes that "senile pruritus" is partly due to aging of the nervous system: As itch receptors age, they send less information to the brain; understimulated, the brain becomes abnormally active and creates pseudo-itches — "itches" that are not due to the stimulation of a sense organ. This would explain why some elderly persons itch over their entire body without an evident cause, and why topical antipruritics often are ineffective.

Seniors should be aware that some drugs can cause itching — for example, metoclopramide (Reglan), which increases appetite. Some of the dyes and preservatives in pharmaceuticals can cause itching as well. Examples are tartrazine (FD&C Yellow No. 5) and the germicide methylparaben.

Ways to Lower Your Risk of Itching

* When bathing, add bath oil, hydrolyzed cornstarch, or instant or colloidal oatmeal to the water. But be careful: Oils can make the tub slippery!

- * Pat, don't rub, yourself dry.
- * Apply fragrance- and preservative-free moisturizers to your skin immediately after bathing, showering, or swimming to keep moisture in the skin.
- * In winter, use a humidifier. Outdoors, cover your hands and face to protect them from drying, chafing wind.
- * In summer, stay inside as much as possible on hot days.
- * Wear loose clothing, preferably cotton. Avoid wearing synthetics and scratchy fabrics. Permanent-press and wrinkle-resistant clothes may contain formaldehyde and other irritating chemicals.
- * Wash new clothing and towels before use.
- * Wash all clothing with mild, unscented detergents, such as those recommended for infant clothing. Avoid using bleaches, fabric softeners, and other laundry additives. Run clothes through an extra rinse cycle.
- * Avoid consuming spicy foods, which can exacerbate anal itches.
- * Avoid intake of alcohol and hot food and drink, which dilate blood vessels and thus aggravate itching.
- * Keep pets free of fleas and other parasites.
- * Limit your exposure to especially stressful situations, and take time to relax.
- * Limit your use of cosmetics to hypoallergenic products.
- * Trim your nails to lower the risk of injury from scratching. If you scratch in your sleep, wear cotton gloves to bed.

Home Remedies

- * Apply a cold compress, a cool washcloth, or pressure with the palm of the hand to the itchy area.
- * "Colloid" baths are an easy way to apply antipruritics to the entire body. Baths with oatmeal (Aveeno), hydrolyzed starch (Linit), or bran are highly advisable.
- * Baths with mineral or vegetable oils can also soothe itching, but they make the tub very slippery.
- * Depending on the skin condition, dermatologists sometimes advise patients to take baths with baking soda, potassium permanganate, or tar.
- * Sitz baths can relieve both anal and vulvar (female genital) itching.
- * To reduce inflammation and to dry oozing eruptions, apply soaks and wet dressings to the affected area. Common ingredients for such dressings include Burrow's solution (aluminum acetate), milk of magnesia (not mint flavored), potassium permanganate, and whole milk.
- * "Shake" lotions — suspensions such as calamine lotion — can cool the skin and soothe an itch.
- * A number of nonprescription substances can help break the itch-scratch cycle. These include camphor, menthol, phenol, tars, and salicylic acid (of which aspirin is a derivative).
- * Avoid applying alcohol solutions to the skin. Although they soothe itching initially, they dry the skin and ultimately aggravate the problem.

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