Great Plains Diagnostic Network
(GPDN) March 19, 2025

Introduction to Delusional Infestation (DI). It takes a village to care for DI sufferers. Definition, history, and understanding.

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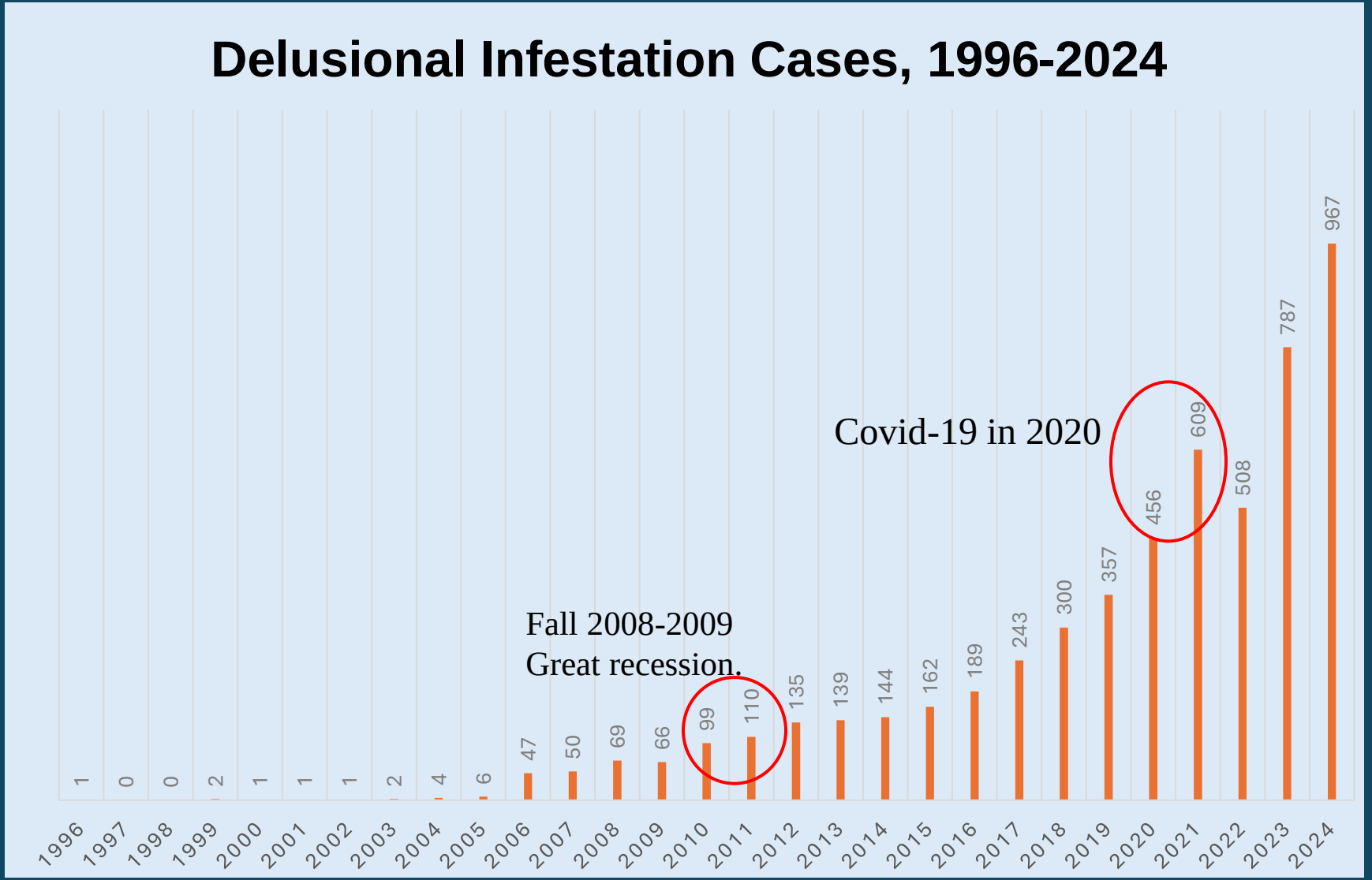
28 years of records.



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Gale E. Ridge *Editor*

The Physician's Guide to Delusional Infestation

This unique, ground-breaking book is a comprehensive clinical guide to the psychiatric disorder of Delusional Infestation (DI). DI is a psychiatric illness characterized by patients holding a monothematic fixed belief of infestations on their skin, body, or immediate environment - a belief that is not supported by objective medical evidence. Delusional beliefs may be shared among individuals, and perceived pathogens include living organisms such as parasitic worms, bacteria, fungi, and insects. Organic or non-organic infiltration by fibres, threads, or other inanimate particles or objects, known or unknown to medical science, are also described by patients. DI is severely underreported because of social stigma, limited physician awareness, and patient doctor-hopping.

Written for physicians, the book offers a multidisciplinary, compassionate care model for patients burdened by this pernicious disorder. Other health professionals and administrators will find the work highly valuable, as will professionals in fields such as veterinary medicine, pest management, entomology, parasitology, and information services supported by academia.

The Physician's Guide to Delusional Infestation assembles and organizes all current knowledge of DI and presents material in three parts. Part I introduces and reviews DI's historical background, showing how our understanding of the condition has developed. Its concise sections include useful tables, illustrations, algorithms, and reference lists for clinicians who work with DI patients.

Part II covers differential diagnosis, treatment, and ways to work effectively with DI patients. Since these patients are often high-functioning, particular techniques of interviewing, joining with patients, sampling, and laboratory testing are explained. International travel, physician fallibilities, possible alternative diagnoses, the Internet, and veterinary and public health concerns are all addressed.

Part III is a series of chapters written by experts in their fields. This section allows each author to present personal experiences from their respective professions—observations and opinions that show a variety of perspectives among the book's authors. Part III includes a chapter on common human parasites with their biology, behaviours, and distributions. The book will serve as a comprehensive, yet concise, reference for physicians whose patients have unusual, baffling, or implausible medical histories and physical examinations.

A soon to be gold standard resource, *The Physician's Guide to Delusional Infestation* equips and empowers all physicians—and many others interested in the topic—with an expert, comprehensive understanding of this complex disorder.

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▸ springer.com

Ridge *Ed.*

The Physician's Guide to Delusional Infestation

The Physician's Guide to Delusional Infestation

Gale E. Ridge
Editor

Springer

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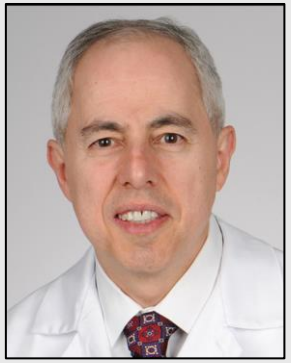

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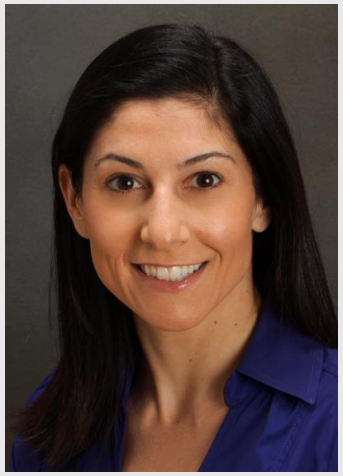

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The Physician's Guide to Delusional Infestation,
using multidisciplinary compassionate care.

Part I: Delusional Infestation; its definition, forms, psychiatric and somatic dynamics.

Part II Interviewing, differential diagnoses, treatment and resources.

Part III Individual author chapters.

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Definition

The identity crisis around Delusional Infestation
At least 40 iterations and euphemisms since 1890

Acrophobie	1894	Thibierge
Nevrodermie Parasitophobique	1896	Perrin
Entomophobia	1921	Pierce
Zirkumskritpe Hypochondrie	1929	Schwarz
Delire Cenesthesquie	1930	Mallet & Male
Prasenler Dermatozoenwahn	1938	Ekbom
Delusions of Parasitosis	1940	Wilson & Miller
Chronisch tactile Halluzinose	1953	Bers & Conrad
Deliroide dermatozoice	1960	Callieri & Vella
Ekbom Syndrome	1970	Petho & Szilagyi
Delusions of Infestations	1970	Hopkinson
Monosymtomatic hypochondriacal psychosis	1980	Munro
Morgellons	2002	Mary Leitao

Current definition.

Delusional Infestation.

(2010)

*Bewley, Lepping, Freudenmann, & Taylor

Alternate more patient friendly version coined by Scott Norton,

"Concern for Infestation (CI)."

*Bewley AP, Lepping P, Freudenmann RW, Taylor R. Delusional Parasitosis: time to call it Delusional Infestation [published correction appears in Br. J. Derm. 2010 Oct; 163 (4):898.

Delusional Infestation Definition.

Delusional Infestation (DI) can arise as a primary (de novo) or secondary delusion.

Primary (de novo) DI is a psychiatric illness characterized by patients holding a monothematic fixed belief of an infestation of their skin, body, or immediate environment, which is not supported by objective medical evidence.

Secondary DI for an ICD-11 diagnosis (International Classification of Disease, 2022. WHO); symptoms should be present for more than one month and without meeting criteria for schizophrenia or another major mental illness. The delusion may be additional to organic pathology, other medical, neurological or psychiatric disorders, environmental sensitivities, and/or substance abuse, or as side effects of various prescribed and un-prescribed medications. The psychopathology aspect “is limited to the delusion and abnormal tactile sensations related to the delusional theme”, while “patients are otherwise entirely mentally healthy and argue rationally if they discuss issues other than their infestation.”

Symptoms can impact all aspects of everyday life including work, relationships, and quality of life. It constitutes a high disease burden and is a debilitating disorder that causes significant suffering to the individual and those associated with them. Many people with DI lose insight and challenge the lack of objective findings of infestation, therefore treatment compliance is variable, and suffering can be significantly protracted. Longer duration of untreated illness is associated with poorer outcome. Antipsychotic medication is highly effective.

Different Forms of Delusional Infestation.

1. Double Delusion Infestation (DDI):

Someone who has been inferred by the “inducer” as being infested who can’t speak for themselves such as children and animals. They are infesting the inducer. A large study among primary U.S. and Canadian veterinarians found over 300 cases of people with the belief that their pets were infested when it was not the case.

2. Delusional Infestation by Proxy (DIP)

The inducer thinks that someone else (including animals, children, or objects) are infested and they are not. This could lead to serious child protection issues or pets leading to inappropriate demands to euthanize the animals. Additionally, the environment, house, car, particular rooms, wild or domesticated animals can also be included in the list.

3. Induced Delusional Infestation (IDI)

(Folie à deux, Folie à trios, Folie à famillar):

The inducer can induce a manifestation of the disorder in others who are associated with them.

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Medical conditions, allergies, traumas, etc. that can trigger DI.

- Agent Orange long term effects; peripheral neuropathy.
- Aging.
- AIDS/HIV.
- Alcohol withdrawal.
- Alcoholism.
- Algorithms (Lacks critical thinking with potent power of suggestion).
- Allergies: food, tree, grass, weed, dust mites, mold.
- Alzheimer's dementia.
- Anemia including pernicious anemia.
- Antibiotics.
- Antiepileptic.
- Anxiety.
- Atopic dermatitis.
- Autoimmune disease incl. Multiple sclerosis, Lupus erythematosus, Wegener's granulomatosis.
- Body dysmorphic disorder (BDD).
- Brachioradial pruritus.
- Brain cysticercosis.
- Brain grey matter deficiency.
- Cancer: including lung cancer, Lymphocytic leukemia, Hodgkin's lymphoma, polycythemia rubra vera, multiple myeloma or neoplasia.
- Cannabis use.
- Carbon monoxide poisoning.
- Carcinoid syndrome.
- Caterpillar dermatitis (brief exposure to toxic hairs).
- Cerebrovascular accident.
- Cerebrovascular disease.
- Chicken pox (history of infection).
- Cholestasis (reduced bile flow from liver).
- Chronic folliculitis.
- Chronic renal failure.
- Chronic urticaria.
- Cirrhosis (late-stage liver disease).
- Cocaine, esp. acute intoxication.
- Congestive heart failure.
- Darier's disease.
- Degenerated plastics.
- Dementia.
- Dementia due to Vitamin B12 deficiency.
- Dengue fever.
- Dental infections.
- Depression.
- Dermatitis artefacta.
- Dermatitis herpetiformis (autoimmune disease).
- Dermatophaga.
- Diabetes mellitus.
- Dopamine agonists.
- Eating disorders.
- Encephalitis (brain inflammation).
- Endocrine abnormalities (blood biochemical regulation).
- Endogenous eczema.
- Fiberglass dermatitis.
- Fibromyalgia.
- Filariasis (sources: food, insect, particular habitats).
- Fluoride poisoning.
- Folate deficiency.
- Folliculitis.
- Grover's disease.
- Hallucinations, especially visual.
- Heavy metal toxicity.
- Hemochromatosis (liver disease).
- Hepatic disease (alcoholic fatty liver disease).
- Hepatitis B and C.
- Herpes zoster infection (Shingles).
- Human immunodeficiency virus.
- Huntington's disease.
- Hyper-awareness of normal nerve end firing.
- Hypertension.
- Hyperthyroidism.
- Hypoglycemia (low blood sugar).
- Hyperperfusion in temporal & parietal lobes of the brain.
- Hypothyroidism.
- Hypovitaminosis, including B12 deficiency.
- Illegal drug use especially stimulants (Cocaine, Cannabis, amphetamines).
- Illegal drug use withdrawal.
- Insect phobia.
- Interferon therapy.
- Internet searches with confirmation bias.
- Intestinal flora and fauna imbalance.
- Iron deficiency.
- Irritable bowel syndrome linked to urticaria.
- Isolation.
- Itch (neurological abnormalities).
- Jaundice.
- Kidney damage.
- Lack of sleep and exercise as contributing factors.
- Lactogenic disease.
- Lichen simplex chronicus.
- Liver damage.
- Malaria.
- Mast-cell-activation syndrome.
- Meningitis (central nervous system membrane inflammation).
- Menopause (Perimenopausal pruritus).
- Mental retardation.
- Munchausen by proxy (mental disorder of faked illness to garner attention).
- Munchausen disease.
- Nasal MRSA carrier.
- Neoplasia (abnormal tissue growth).
- Neurocysticercosis.
- Neuropsychiatric delusion caused by some Tropical diseases (52).
- Neurotic excoriation disorder.
- Niacin overdose.
- Nocturnal pruritus.
- Notalgia paresthetica (intense burning/itching inner shoulder blade and spine).
- Obsessive compulsive disorders (OCD).
- Obesity, poor circulation, and other comorbidities as contributing factors.
- Onchocerciasis.
- Oncostatin M (OSM), high levels cause chronic itch.
- Onychophagia.
- Opioids.
- Paper sensitivities.
- Parasthesia (pins and needles).
- Parkinson's disease.
- Parkinsonian medication.
- Pathologic skin picking (PSP).
- Pemphigoid (dermal blistering and rashes).
- Pesticide exposure.
- Poison ivy exposure causing long term formication.
- Polycythemia Vera (elevate red blood cells).
- Reduced grey matter in the brain.
- Polypharmacy.
- Renal diseases.
- Rheumatoid arthritis.
- Schistosomiasis.
- Schizoaffective disorder.
- Schizophrenia.
- Scleroderma.
- Shock and/or trauma with possible PTSD.
- Sjögren's syndrome.
- Small fiber polyneuropathy (peripheral neuropathy through somatosensory pathways).
- Somatoform dissociation with pruritus (functional itch disorder).
- Spinal cord injury.
- Staphylococcal furunculosis infection.
- Statins.
- Steroids.
- Stinging nettles.
- Stress.
- Stroke.
- Structural lesions in the striatum (putamen) of the brain.
- Subdural hematoma.
- Syphilis.
- Thiamine deficiency.
- Trauma to the head.
- Traumatic brain injury.
- Travel to Tropics within a year of symptom onset.
- Trichotillomania disorder.
- Trigeminal trophic system.
- Tropical diseases.
- Tuberculosis.
- Trypanosomiasis.
- Uremia (kidney and/or bladder disease; hyperuricemia).
- Urticaria.
- Vitamin B12 deficiency (particularly in people with a Caribbean ancestry).
- Vitamin D deficiency.
- Wallenberg syndrome.
- White matter lesions in the brain.
- Zinc deficiency.

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Delusional Infestation History, Misinformation, and Insects and Mites.

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Morgellons Disease

In the early 2000 ‘s Ms. Leitao saw red, black, blue, and white manmade fibers, “bundles of fibers” on her young son’s skin which physicians failed to identify. Leitao believed these were caused by an unknown disease. After reading an obscure document “Letter to a friend upon occasion of the death of his intimate friend” written by Sir Thomas Brown published in 1690, who’d used the term “Morgellons,” she decided to name her son’s condition “Morgellons Disease.”

“Masquelons” anglicized to “Morgellons”
Made popular in the last 20 years.

England

Southern France

Sir Thomas Browne
17th century physician.

“Letter to a friend upon occasion of the death of his intimate friend” written by Sir Thomas Brown (published posthumously in 1690).

“Though the beard be only made a distinction of sex, and sign of masculine heat by Ulmus, yet the precocity and early growth thereof in him, was not to be liked in reference unto long life. Lewis, that virtuous but unfortunate king of Hungary, who lost his life at the battle of Mohacz, was said to be born without a skin, to have bearded at fifteen, and to have shown some grey hairs about twenty; from whence the diviners conjectured that he would be spoiled of his kingdom, and have but a short life; but hairs make fallible predictions, and many temples early grey have outlived the psalmist's period. **Hairs which have most amused me have not been in the face or head, but on the back, and not in men but children, as I long ago observed in that endemial distemper of children in Languedoc, called the Morgellons, wherein they critically break out with harsh hairs on their backs, which takes off the unquiet symptoms of the disease, and delivers them from coughs and convulsions.”**


Bed at Hjerl Hede Museum Village, Denmark.

Common use of straw for bedding at the time. Infants and young children were traditionally laid on their backs resulting in contact dermatitis.


Bed at Sturbridge Village, Massachusetts, USA.
Photo: Gale E. Ridge

Straw itch mites.

"Night, night sleep tight, do not let the bed bugs bite."

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Morgellons Disease Foundation Statement.

“The distinguishing characteristic of Morgellons Disease (MD) is the presence of microscopic subcutaneous fibers sometimes referred to as filaments within the skin. Lighted microscopy (60-x minimum) enables the visualization of these unusual fibers, often-colored red, blue, black, white or clear, embedded in open skin lesions as well as their presence beneath intact skin.”

Subsequently, Leitao founded the Morgellons Research Foundation which aggressively lobbied Congress to have the Centers for Disease Control and Prevention (CDC) study this “unknown” disease. US Senators **Dick Durban** and **Barbara Boxer** supported her. Following a letter writing campaigned and a period of reluctance, the CDC acquiesced.
A subsequent study published in 2012 refuted her assertions. The CDC found no causative agent.

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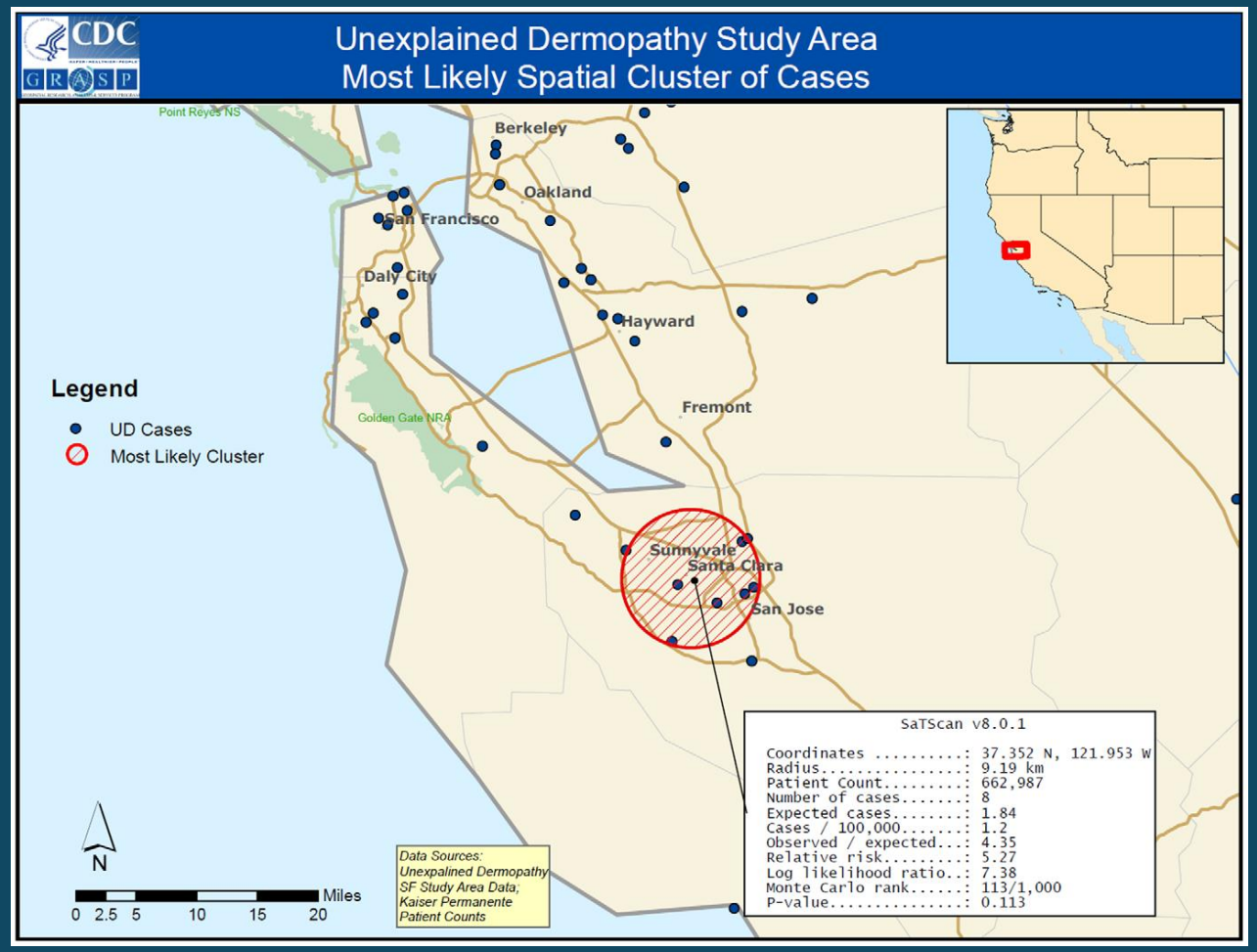
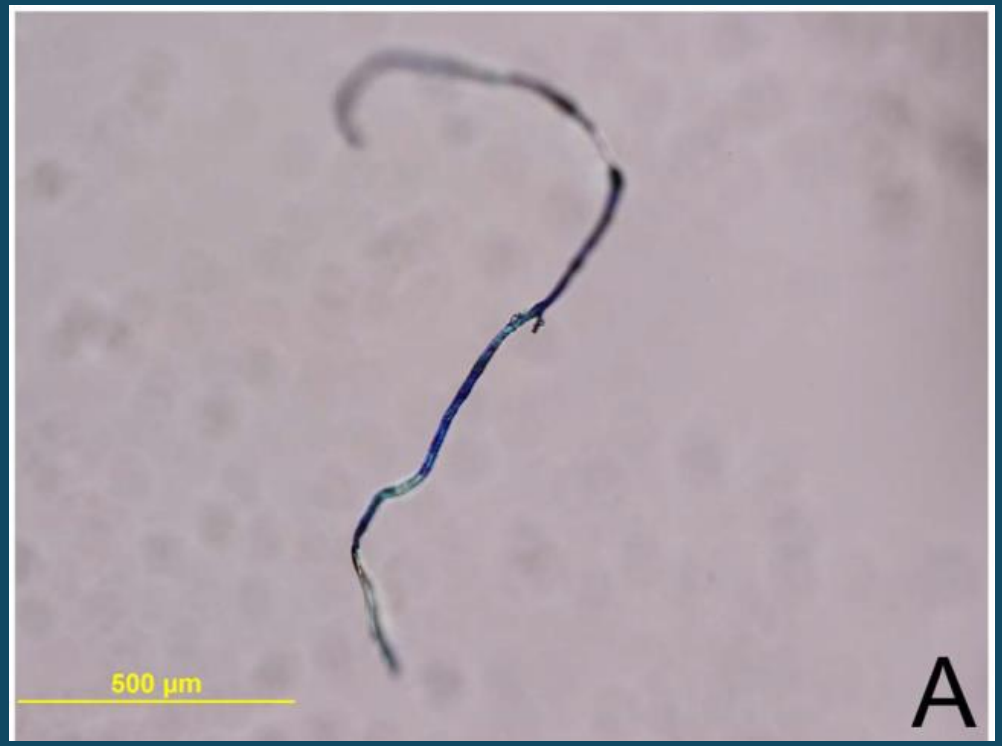
CDC Morgellons Study (2006 – 2012) (Pearson et al. 2012).



Manmade filament.



* Pearson ML, Selby JV, Katz KA et al. Clinical, epidemiologic, histopathologic, and molecular features of an unexplained dermopathy. Plos One. 2012; 7(1): e29908.

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Leitao and her foundation subsiquently switched to Lyme disease, *Borrelia burgdorferi*, as the causative agent.

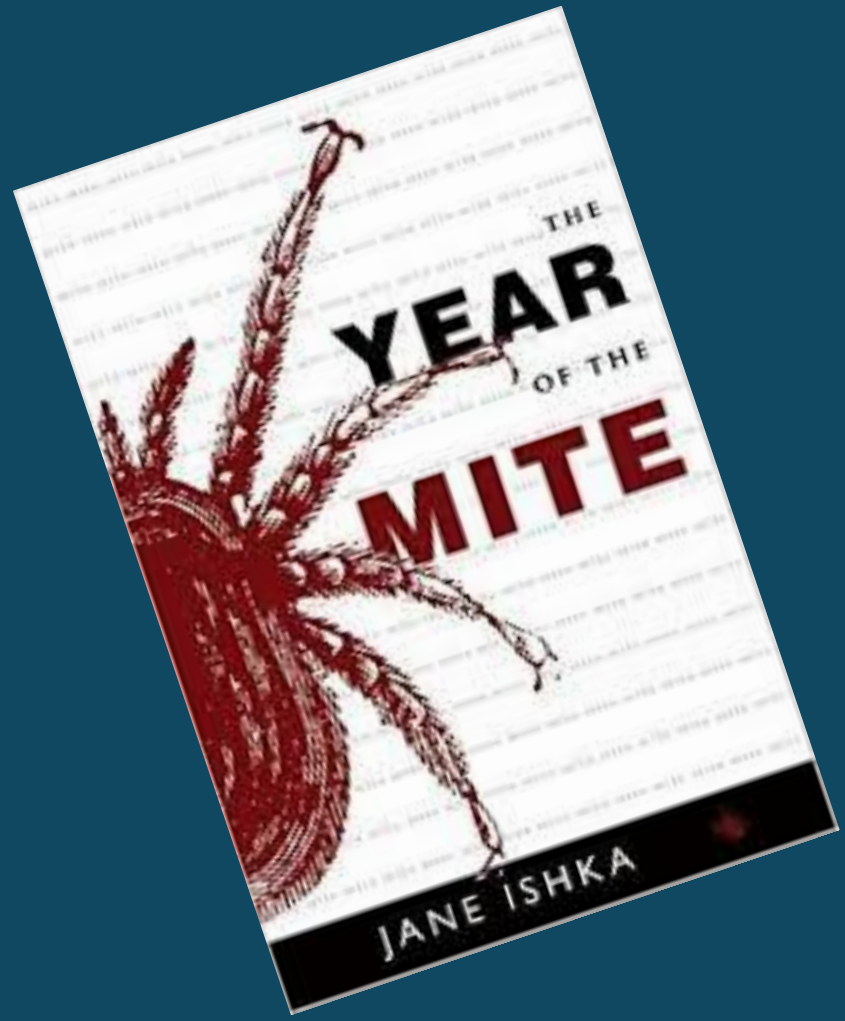
Middelveen (one of a very few who favorably publish on Morgellons) published in 2013, with a follow up paper in 2018 and wrote,

"Spirochetal infection provides evidence that this infection may be a significant factor in the illness and refutes claims that MD lesions are self-inflicted and that people suffering from the disorder are delusional."

Red Morgellons fiber.

Pedaling erroneous deceptive information leading to product sales.

Birdmites.org



Springtails.

J. New York Entomol. Soc. 112(1):87–95, 2004

COLLEMBOLA (SPRINGTAILS) (ARTHROPODA: HEXAPODA: ENTOGNATHA) FOUND IN SCRAPINGS FROM INDIVIDUALS DIAGNOSED WITH DELUSORY PARASITOSIS

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Abstract.—Twenty individuals diagnosed with delusory parasitosis participated in a single site clinical study under the auspices of the National Pediculosis Association (NPA) and the Oklahoma State Department of Health. The objective of this study was to determine if there were any common factors in skin scrapings collected from this population. These individuals, whose symptoms were originally attributed to lice or scabies, were part of a larger group reporting symptoms of stinging/biting and/or crawling to the NPA. Multiple skin scrapings from each person were microscopically examined. Any and all fields of view that appeared incongruous to normal human skin were digitally photographed. When the photographic images were initially evaluated, no common factor was identified. However, more extensive scrutiny using imaging software revealed evidence of Collembola in 18 of the 20 participants.

Key words: Collembola, springtail, stinging, biting, crawling, Arthropoda, Hexapoda, Entognatha, pediculosis, human skin, lice and scabies.

Delusory parasitosis, also known as Ekbom's Syndrome (Ekbom, 1938), is a presumed psychiatric condition ascribed to individuals who are convinced, in the absence of any empirical evidence, that they are infested with an insect or parasite (Novak, 1988; Poorbaugh, 1993; Webb, 1993a). These individuals experience itching, stinging/biting, and crawling sensations on or under their skin, which are often associated with excoriations, discoloration, scaling, tunneling or sores. Their conviction that they are infested is reinforced by their observation of particles described as sparkly, crusty, crystal-like, white or black specks and/or fibers. Typically, these individuals have consulted extensively with general physicians, dermatologists, and entomologists (Kushon et al., 1993) who could not find physical cause for their complaints. Despite findings ruling out lice, scabies or other medical causes, patients refuse to accept the diagnosis of delusory parasitosis (Koblenzer, 1993; Webb, 1993b), become extremely focused on eradicating the pests, and further compromise their skin by frequent scratching, excessive cleaning, and the application of various remedies such as prescription pesticides for lice or scabies, household cleaning products, and organic solvents or fuels. The symptoms are debilitating and the sufferer's distress is compounded by the lack of a concrete physical diagnosis.

SCIENTIFIC NOTE

CRITIQUE OF THE ARTICLE "COLLEMBOLA (SPRINGTAILS) (ARTHROPODA: HEXAPODA: ENTOGNATHA) FOUND IN SCRAPINGS FROM INDIVIDUALS DIAGNOSED WITH DELUSORY PARASITOSIS"[1]

Kenneth A. Christiansen[2] and Ernest C. Bernard[3]

In a recently published paper, Altschuler et al. (2004) argued that Collembola (springtails) can cause "stinging/biting and/or crawling" sensations. The collembological community has been highly critical of this report, but has discussed this issue primarily among the members of this community. However, allegations that springtails cause various dermatological problems, severe itching, and related symptoms have made it into the widely read on-line encyclopedia Wikipedia (http://en.wikipedia.org/wiki/Delusory_parasitosis, accessed August 8, 2008: "People with delusional parasitosis are likely to ask for help not from psychiatrists but from dermatologists, pest control specialists, or entomologists."). The medical community has firmly rejected the linkage of insects and widespread dermatitis (Berrios 1985, De Leon et al., 1982, Gupta & Voorhees 1990, Wykoff 1987). Janssens and Christiansen (2007) do acknowledge that an allergic reaction to Collembola tissue or integument on the part of some sensitive people is possible and might lead to the crawling-on-skin irritation symptoms. Various sources and publications, however, have gone much farther and have alleged that some springtails may parasitize humans. This allegation is entirely inconsistent with springtail biology, and no such phenomenon has ever been scientifically confirmed. (For a summary of the literature on this subject, see <www.collembola.org>.) Springtails sometimes can be abundant indoors in damp places such as bathrooms and basements, and under such circumstances may be found on one's person, but this is only accidental. Claims of persistent human skin infection by springtails may indicate a neurological problem, or else delusory parasitosis, a psychological not entomological problem. Berenbaum (2005) commented on the Altschuler et al. paper, suggesting that the report was based on pareidolia; that is, the researchers simply imagined that they saw springtail-like shapes in the images when there were no springtails actually present. In this paper, we more specifically and categorically refute the contention of Altschuler et al. (2004).

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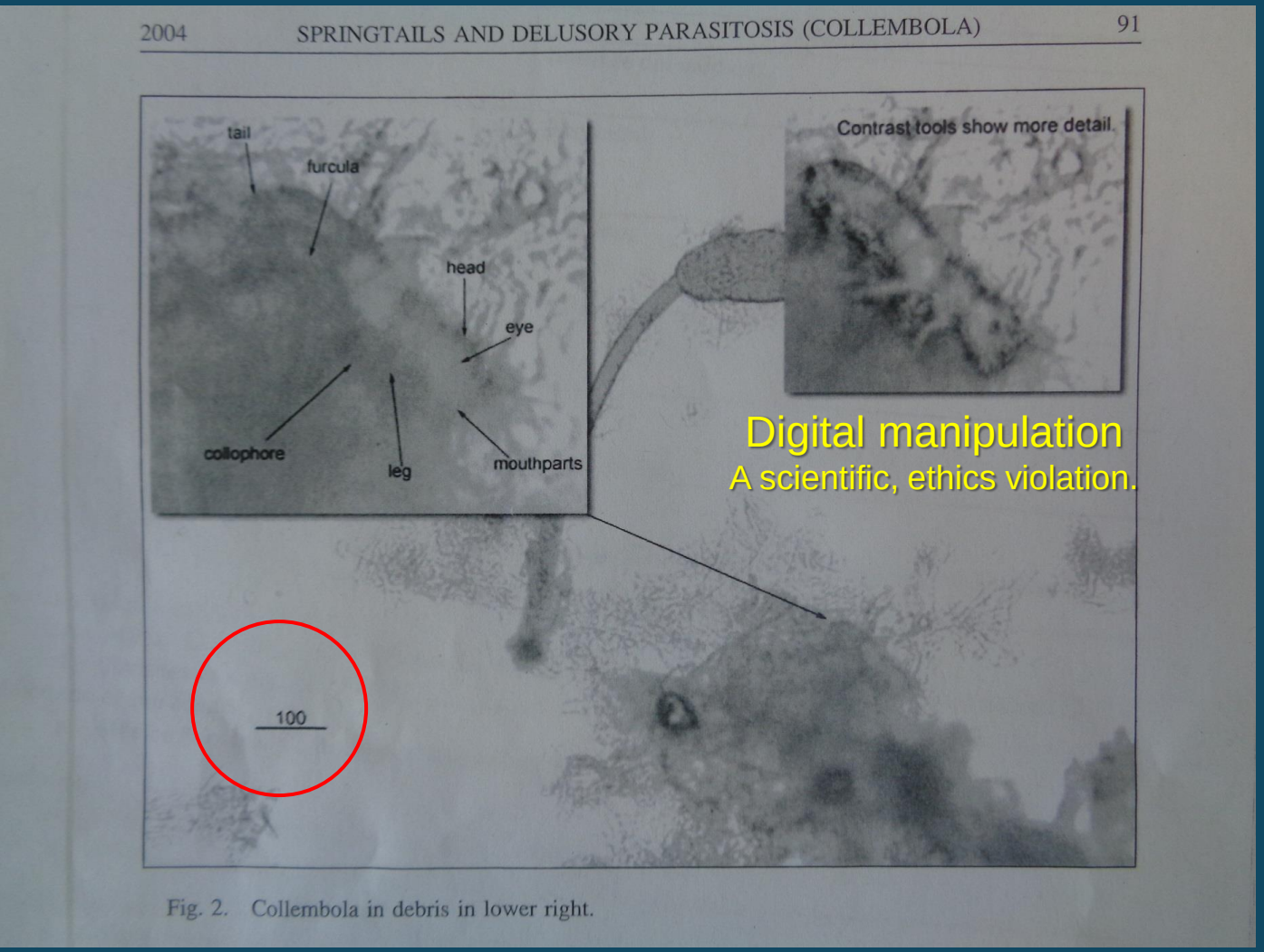
Mailed on February 19, 2009

Pareidolia.



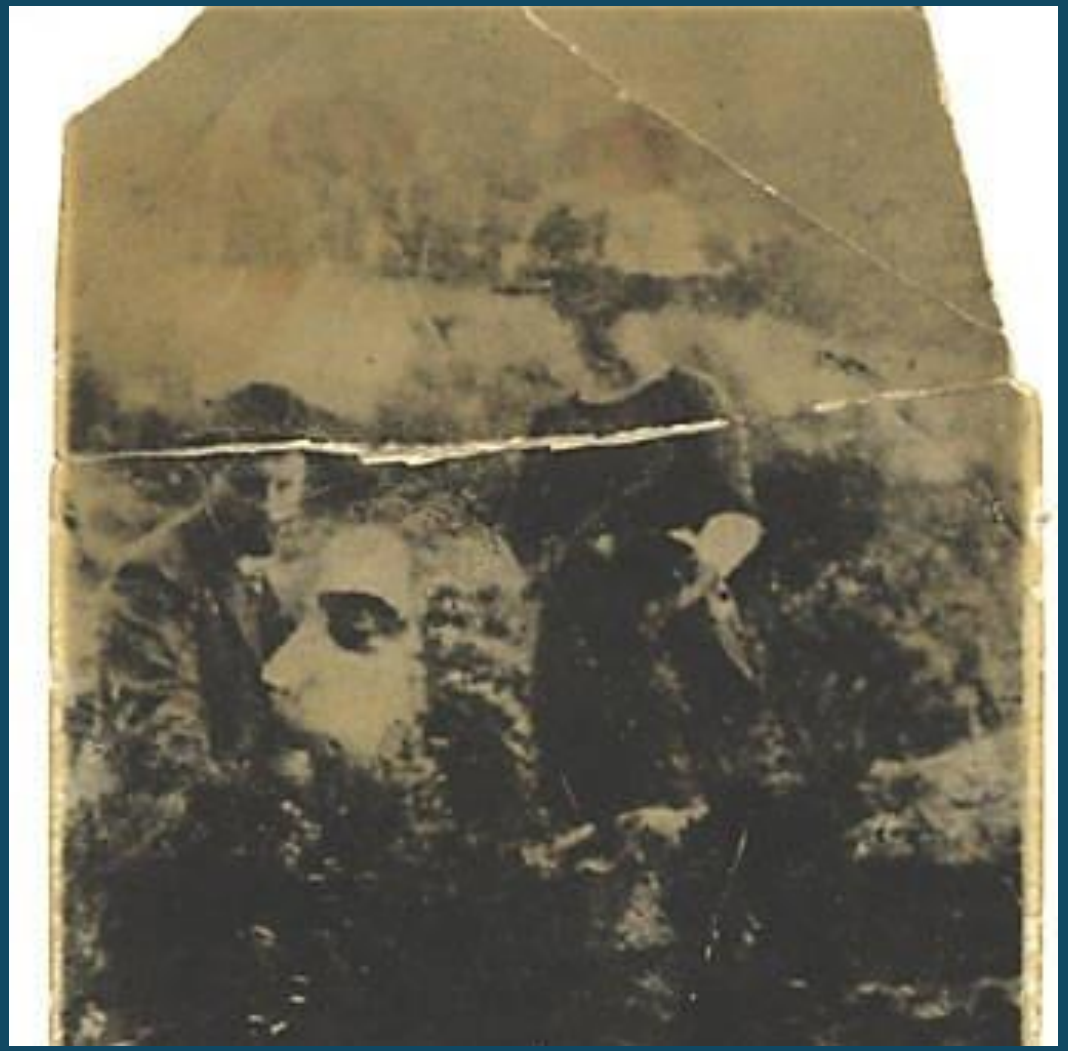
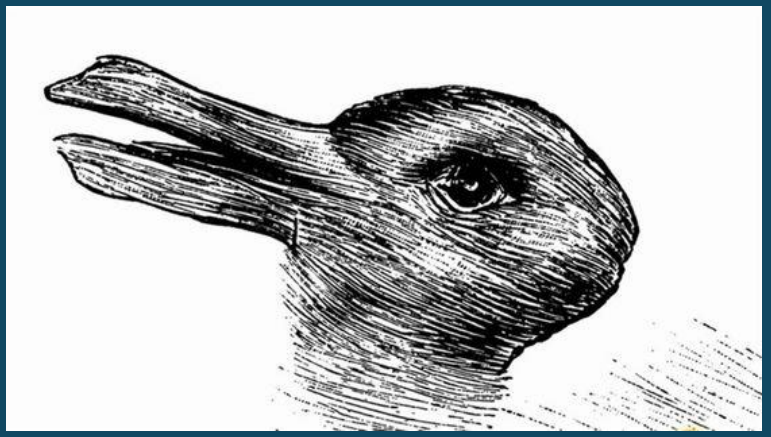


Photo from late 1890's as an example of Pareidolia.



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Medical Aspects and Delusional Infestation Sign.

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Never depend on skin lesions for evidence!

Amoxicillin reaction

Mosquito

Pimple

Mold

Self mutilation

Thyroid

Grass allergy

Self mutilation

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Sample sign.

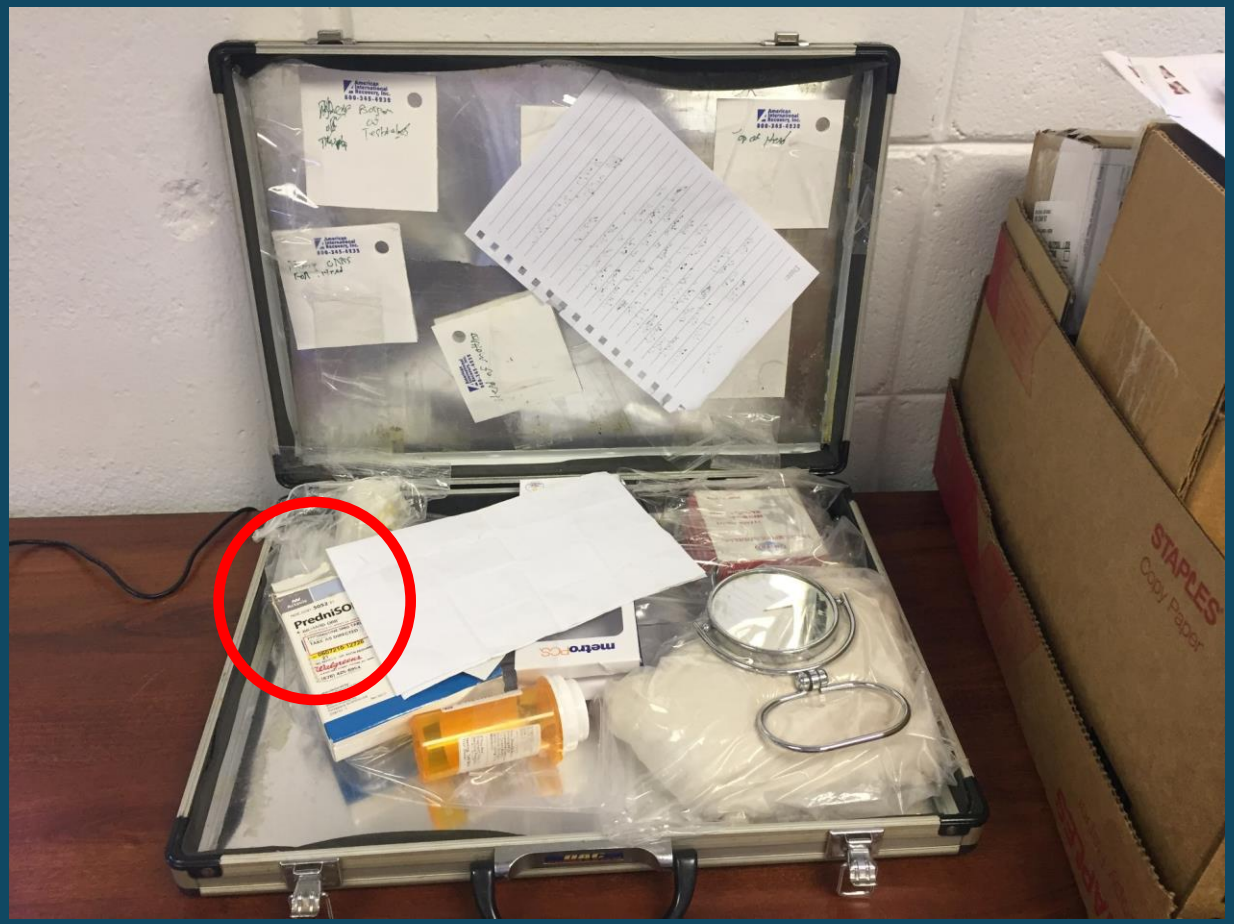

Photo by Nancy Hinkle, University of Georgia.

Erica Engelhaupt (journalist) and Nancy Hinkle.

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The Echo Chamber of Confirmation bias.

Self deception by
filtering out information
that does not support a belief.

The Sunk Cost Fallacy

Individuals commit the sunk cost fallacy when they continue a behavior or endeavor because of previously invested resources such as time, money, or effort.

Includes a form of **cognitive dissonance** where there is a need to feel in control and avoid “regret” to maintain a status quo.

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Differential diagnosis patient clues

Great attachment to a single thought!

Often late to appointments.

Right out of the starting gate
patients are quick to deny
madness from fear or gaslighting.
Early statements of desperation.
No entomological knowledge.

High functioning individuals.
Chattering mind.
Very vocal about their problems.

High sample volume – Sample sign.

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Confusion and often paranoia.
Improbable biology's of assumed parasites.
Normal conversation on other subjects.
Stories are felt over facts.
Using memory as indirect feeling.
Listening but not "hearing."

Overuse of the words "Bite" and "They."

Excessive ritualistic cleaning.
Picking and scratching.

Often with high pain tolerance.
Visual and tactile hallucination.
Self treating (alcohol, medicine, and chemicals).
Naïve trust of the internet and/or those offering poor advice.

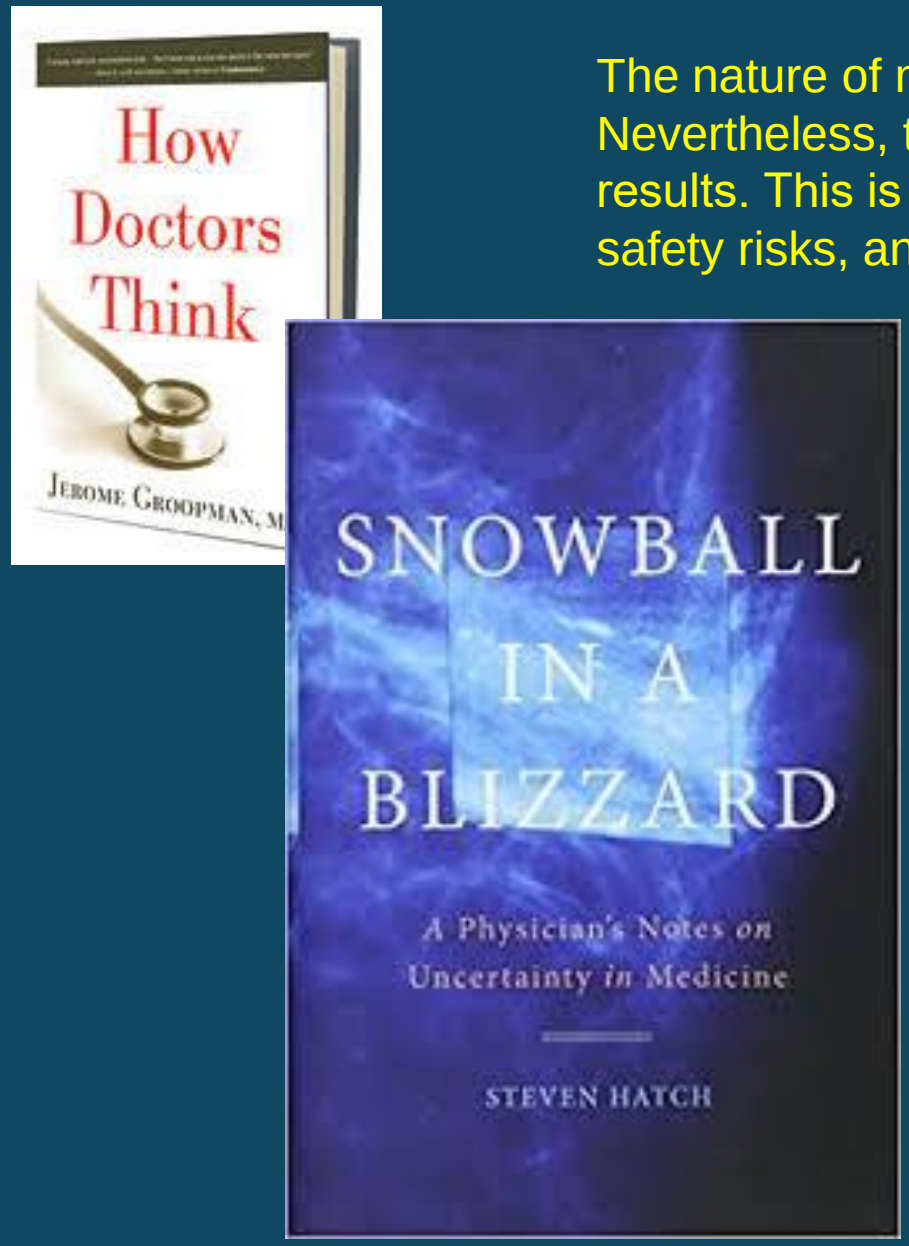

Infested gold ring.

Longtime use of the same medication(s) with developed allergies.
PTSD.
Patients can become aggressive.
Power of suggestion involving family, friends, workplace.
DI can be lethal.

Late-stage DI seeks help but pushes back or switches storylines to support beliefs when faced with contradiction and repels facts that don't fit while selecting "facts" that do.

Medicine lacking knowledge of DI.
DI lies outside physician training.
Common physician failures.
Patients use physician errors as support.

Physicians. “Cognitive Disposition to Respond” (CDR)



The nature of medicine leads many physicians to an aversion of risk and ambiguity. Nevertheless, they feel compelled to respond, despite incomplete or unreliable results. This is where CDR’s also known as cognitive biases, may lead to mistakes, safety risks, and inadequate utilization of medical resources.

Anchoring: Locking onto initial information and diagnosis and not altering initial impression when later contradictory information is given. It’s a coping mechanism developed by shortness of time governed by insurance industries.

Commission bias: Tendency towards action rather than inaction. This occurs when physicians are overconfident or feel pressured by patients or themselves to “do something!”

Zebra retreat: Retreating from making a rare diagnosis despite supporting evidence.

Latrogenic Disorders.

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Post herpetic itch following Shingles.

Itch and pain are synonymous.

*Anne Louise Oaklander, Steven P. Cohen, Steven P Cohen, Shubha V Y Raju. **Intractable postherpetic itch and cutaneous deafferentation after facial shingles.** 2002. PAIN. Mar;96 (1-2):9-12. doi: 10.1016/s0304-3959(01)00400-6.

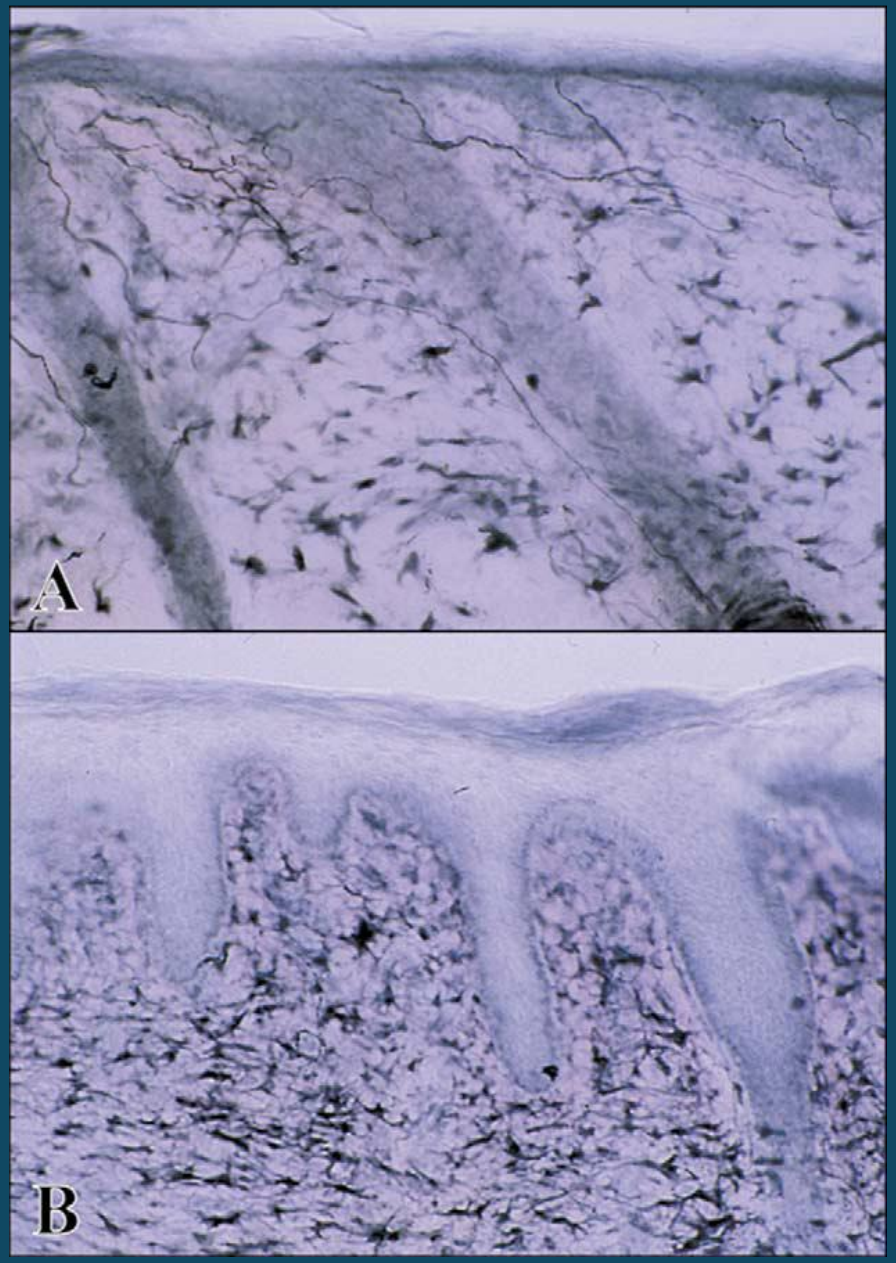
Neurological abnormalities

Representative vertical sections from:

(A) a normal area of the patient's scalp showing axons extending up into the epidermis, and

(B) previously shingles-affected, itchy skin in which no epidermal or dermal neurites are visible.

This can cause a "phantom limb" effect, with painful nerve end firing.



A

B

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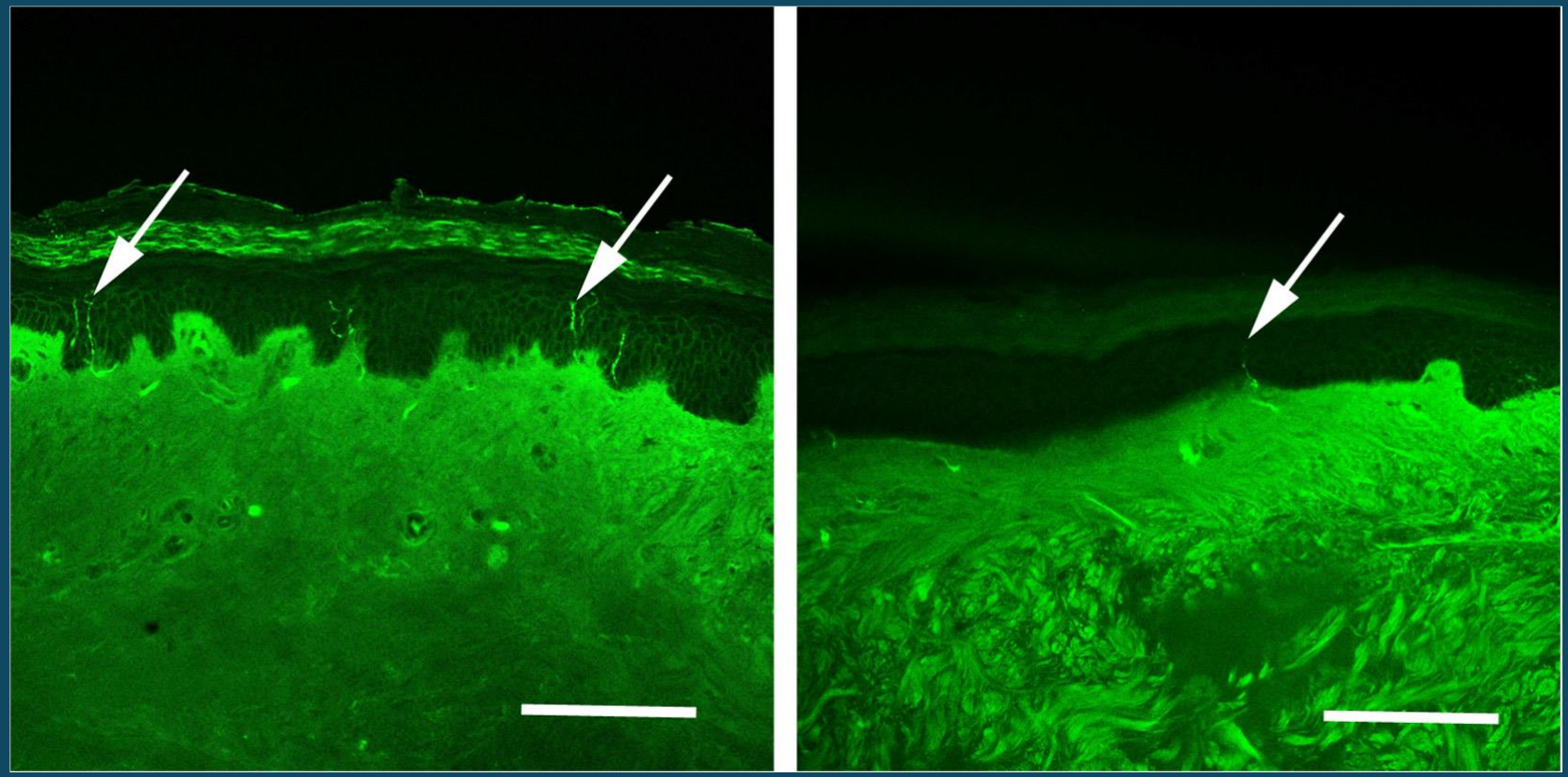
Anne Louise Oaklander
Mass. General Hospital
and Harvard medical
School.

Small Fiber Polyneuropathy. (peripheral-nerve disease)

Normal

Fibromyalgia patient with small-fiber polyneuropathy



Images: Anne Louise Oaklander, Massachusetts General Hospital, Harvard Medical School, Boston, MASS., USA.

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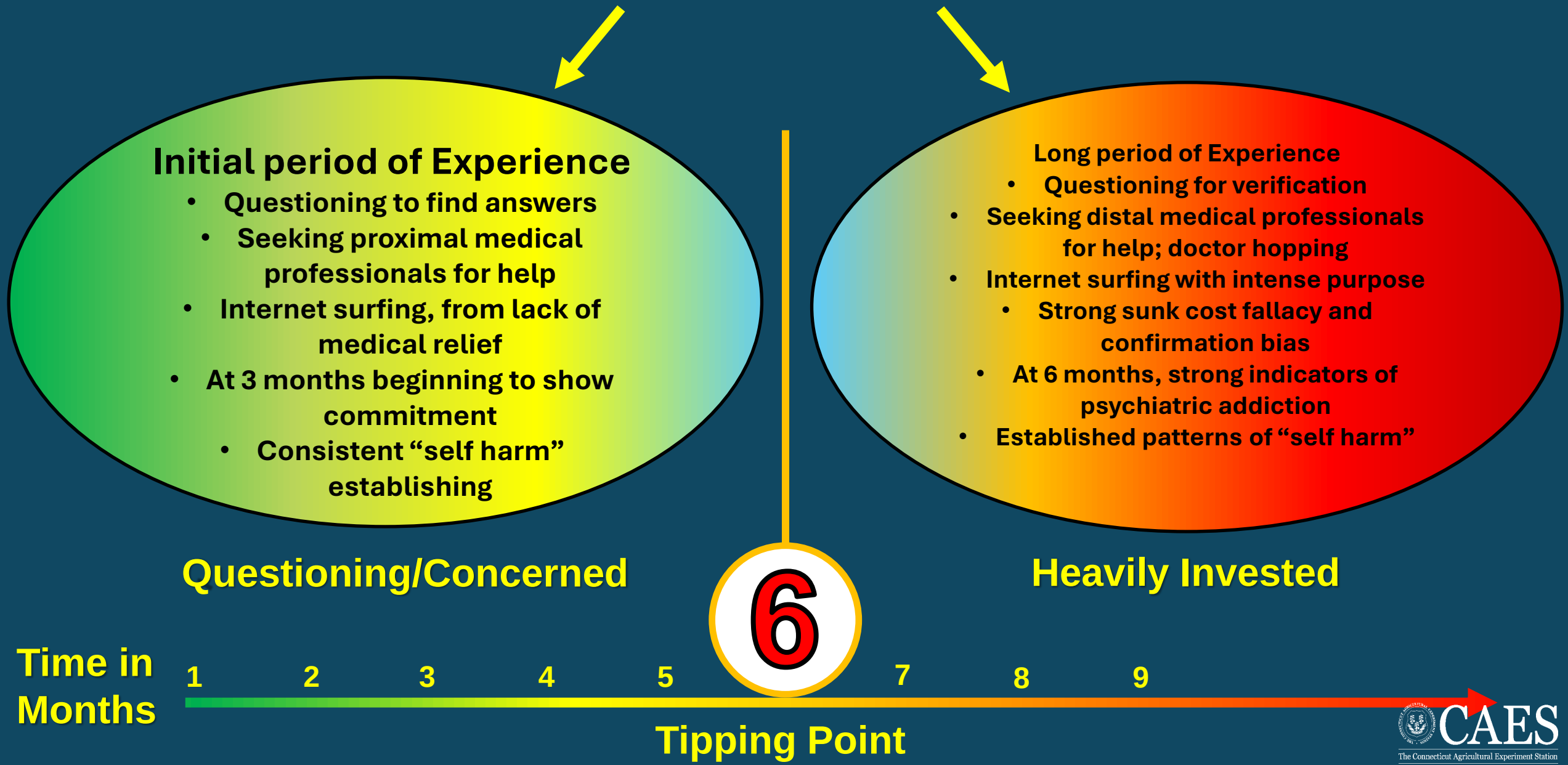
Time Dependent Behavior of Secondary DI (General observations).



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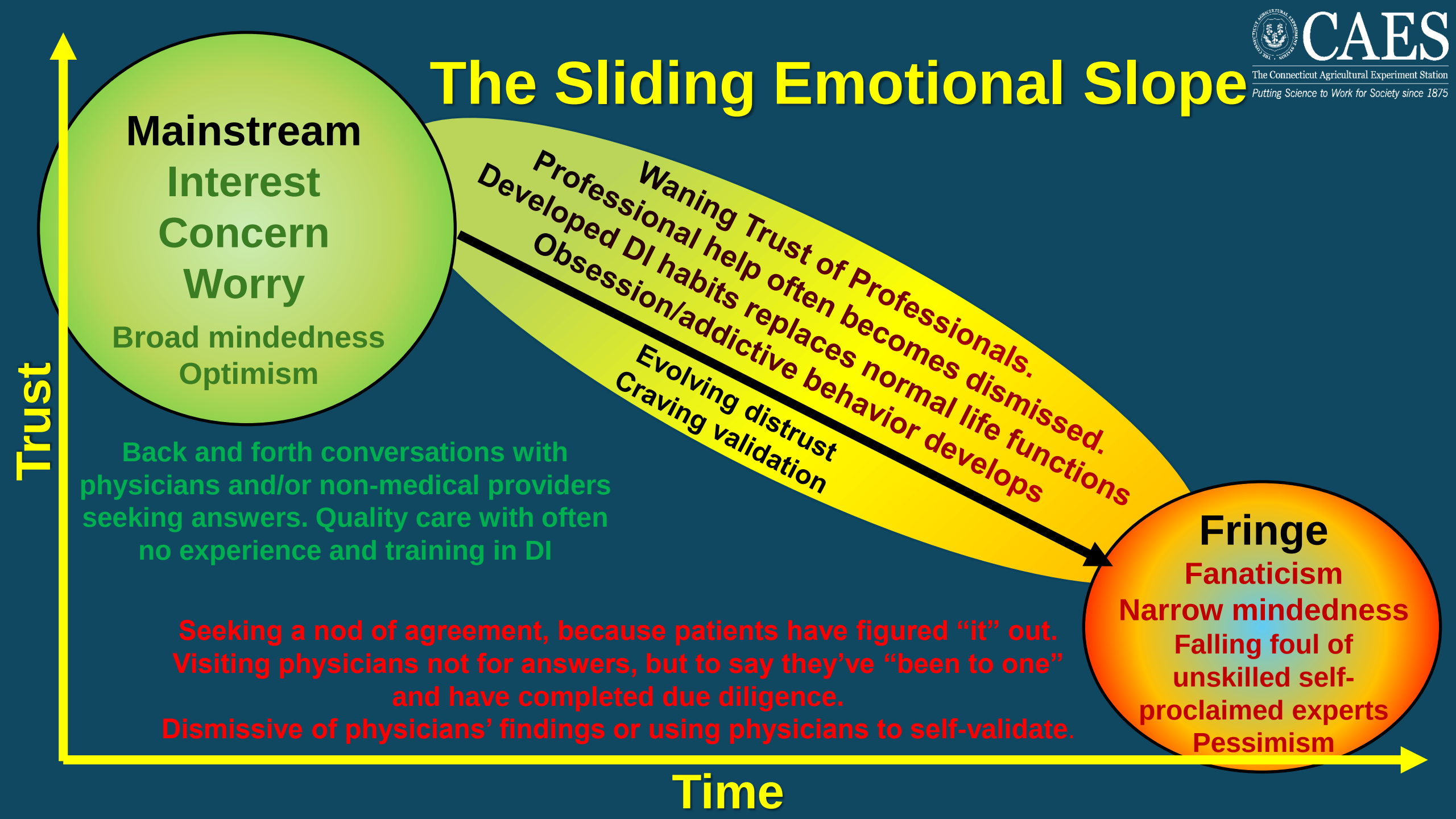
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The Sliding Emotional Slope
Mainstream
Interest
Concern
Worry
Broad mindedness
Optimism
Trust
Waning Trust of Professionals.
Professional help often becomes dismissed.
Developed DI habits replaces normal life functions
Obsession/addictive behavior develops
Evolving distrust
Craving validation
Back and forth conversations with physicians and/or non-medical providers seeking answers. Quality care with often no experience and training in DI
Seeking a nod of agreement, because patients have figured "it" out.
Visiting physicians not for answers, but to say they've "been to one" and have completed due diligence.
Dismissive of physicians' findings or using physicians to self-validate.
Fringe
Fanaticism
Narrow mindedness
Falling foul of unskilled self-proclaimed experts
Pessimism
Time

Delusional Infestation patients and their care.

Very Important: Gather information appropriately.

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Empathy & Patience! These are time consuming cases**!**

Garner trust. Validate patient's beliefs that what they are feeling is "real to them."
Join with patients. Do not talk at them but with them. It's all about building trust.
Directly debunking a belief can backfire. It can reinforce patients' belief system.

Verify length of time a person has had a problem to gauge level of emotional investment; > 6 months, cases will be more difficult regarding persuasion.

Never work alone. Have another staff member present.
Use the threshold effect to take a break.

In interviews have supportive family members or friends visit with patients. They can assist in managing behavior at home and act as the patient's memory.

Actively listen and do not allow yourself to be led. Don't buy into the negative "chatter"
Avoid literal listening, look below the surface.
Ask yourself; what is the patient saying? They are describing and interpreting something they do not fully understand. **Listen for tell tale language.**

Insist on using the words “pinching sensation” not “bite.” The jury is out until the discovery of an arthropod or other parasite.

Be aware of lying, manipulation, and gaslighting. A series of interviews can reveal this behavior.

Manage sample sign. Control sampling to 10 specimens per visit. This focuses the patient’s mind.

Look for marks of excoriation and signs of self treatment.

Physicians and PMP’s should never treat to placate the patient.
PMP’s should only treat if actual arthropods are found.
Physicians should only treat if arthropods or other parasites are found.
Do not rely on laboratory results regarding arthropod feeding. They are often wrong.

Get patient’s to become active participants in your research. Involve them in a partnership.

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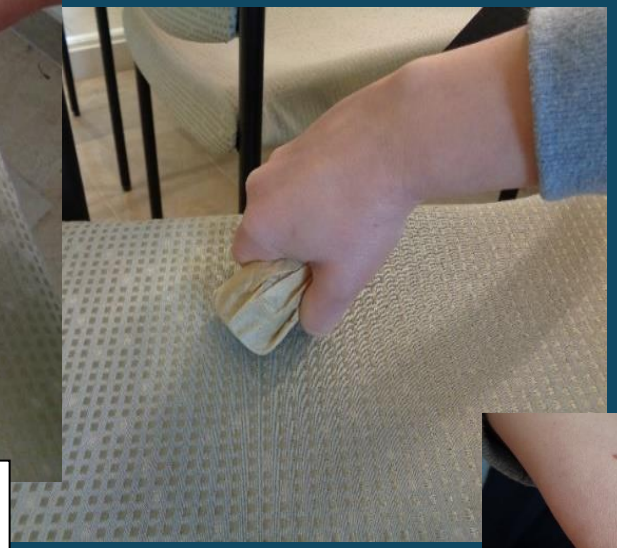
Get patients to participate in sampling. They are co-detectives in their own mystery.



Wrap coffee filter over end of vacuum cleaner hose, hold firmly, and vacuum location for specimens. Turn off vacuum cleaner, put coffee filter into ziplock bag, seal, and label with time, date, and location.

Place scotch/sello tape onto pricking/biting sensation, gently lift off, place onto glass, and label location, time, and date.

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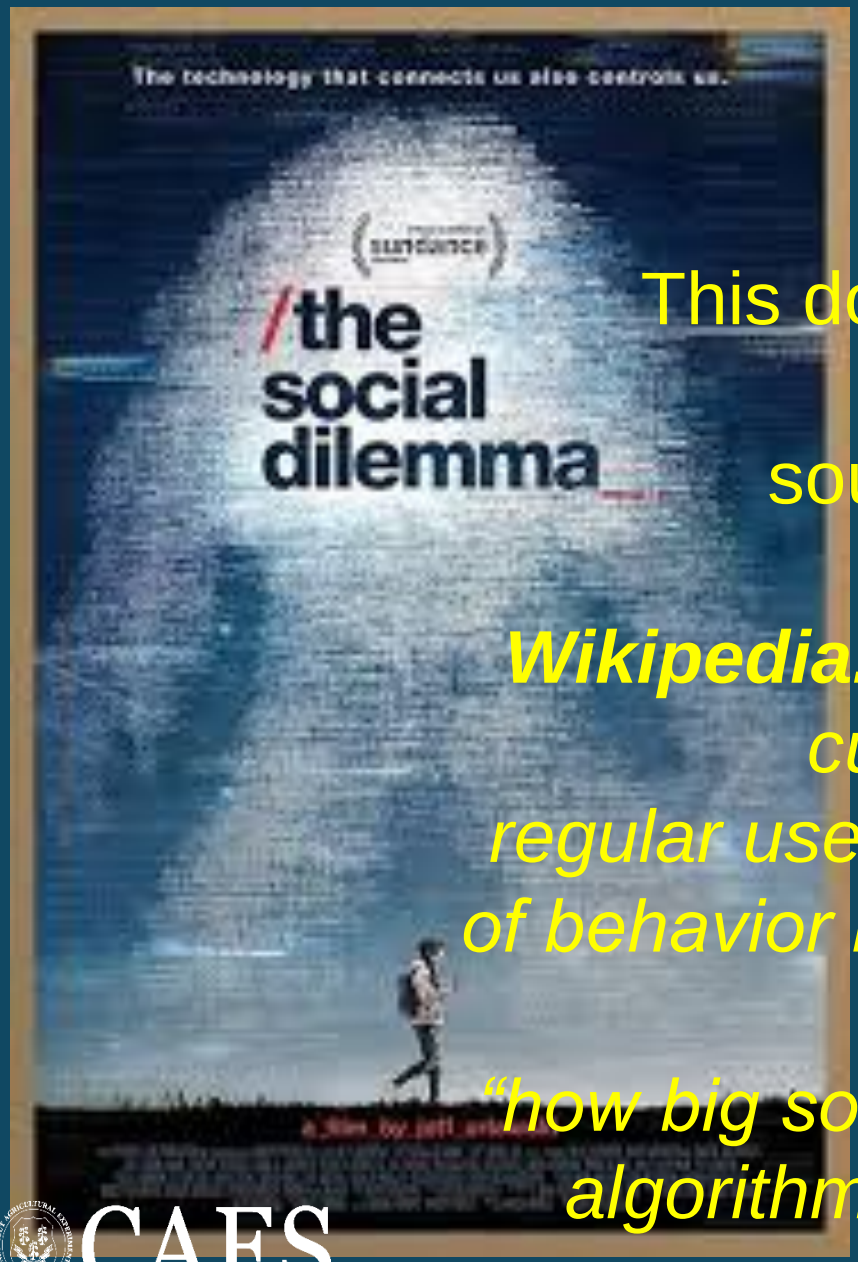
Discourage patient searches for information on the internet.

Sophisticated algorithms developed by Google, Facebook, YouTube etc. known as “Maximize Audience Engagement Algorithms,” are designed to identify people's interests, keep them “hooked” by feeding material that is psychologically rewarding. DI cases are extremely vulnerable to this practice.



Internet algorithms

This docudrama explores the dangerous impact of social networking, with tech experts sounding the alarm on their own creations.

Wikipedia. *"The Social Dilemma centers on the social and cultural impact of social media usage on regular users, with a focus on algorithmically enabled forms of behavior modification and psychological manipulation"……*

"how big social media companies manipulate users by using algorithms that encourage addiction to their platforms."

Treatment.

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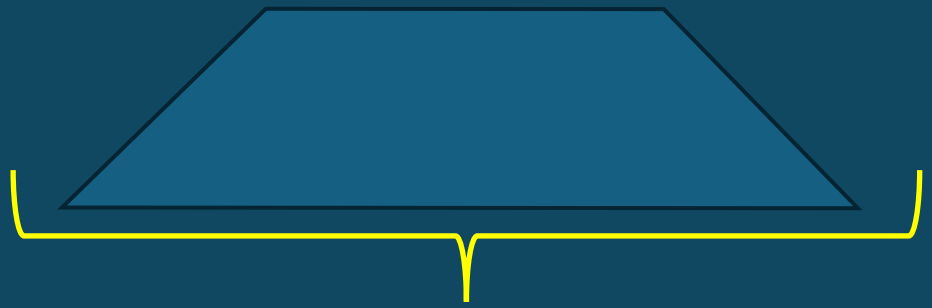
Treatment of Secondary DI is on two concurrent levels. It's a bifurcated condition!

Emotional/psychiatric (protective over layer) concealing an undiagnosed underlying somatic condition-disorder.

Bridge-trapezoid treatment using extremely low doses of anti-anxiety medications to relax patients and abate irritation.



Over a several month period.

Somatic (symptomatic)

Full battery of medical tests and treatment.

Dig deep!

DI Clinic

Wolfson Building

Well travel clinic of the Liverpool School of Tropical Medicine

Liverpool, England.

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European Model.

Patient remains with a single physician and the physician calls in specialists and experts, eliminating patient migration e.g., “doctor hopping.”

Scott Norton with patient.

Multi-disciplinary care.

Full medical work up
Needs plenty of time!
Non-virtual personal relationships
Dermatology
Entomology
Parasitology
Pathology
Psychiatry and social counseling
Emergency Departments
Pest Management Professionals
Health Departments
Epidemiology
Tropical Medicine
Social Services
etc.

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72-year-old high school teacher, "who has been digging at her skin for decades."
Note the landscape of old scars.
Patient of Scott Norton.

The Future

Recognizing this is not an uncommon disorder.

Recognizing high public anxiety toward arthropods or other pathogens which focuses during illness, economic, and social distress.

Develop multi-disciplinary team care (the village) which may include medical professionals, epidemiologists, entomologists, families, social services, and pest management professionals etc.

DI clinic in North America.

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Accidental therapists: For insect detectives, the trickiest cases involve the bugs that aren't really there.
Written by Eric Boodman STAT News (affiliated with the Boston Globe).
March 22, 2017

Thank you

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Alice in Wonderland. Rabbit about to go down his hole.
Lewis Carroll.

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