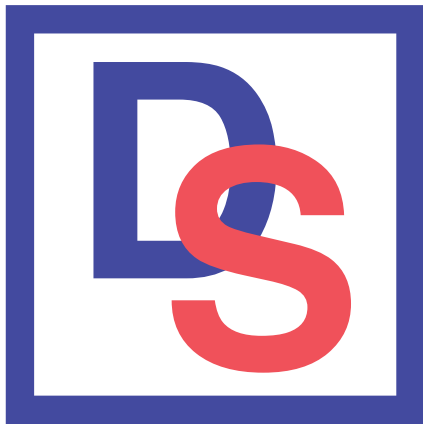


Health Issues and UV Exposure

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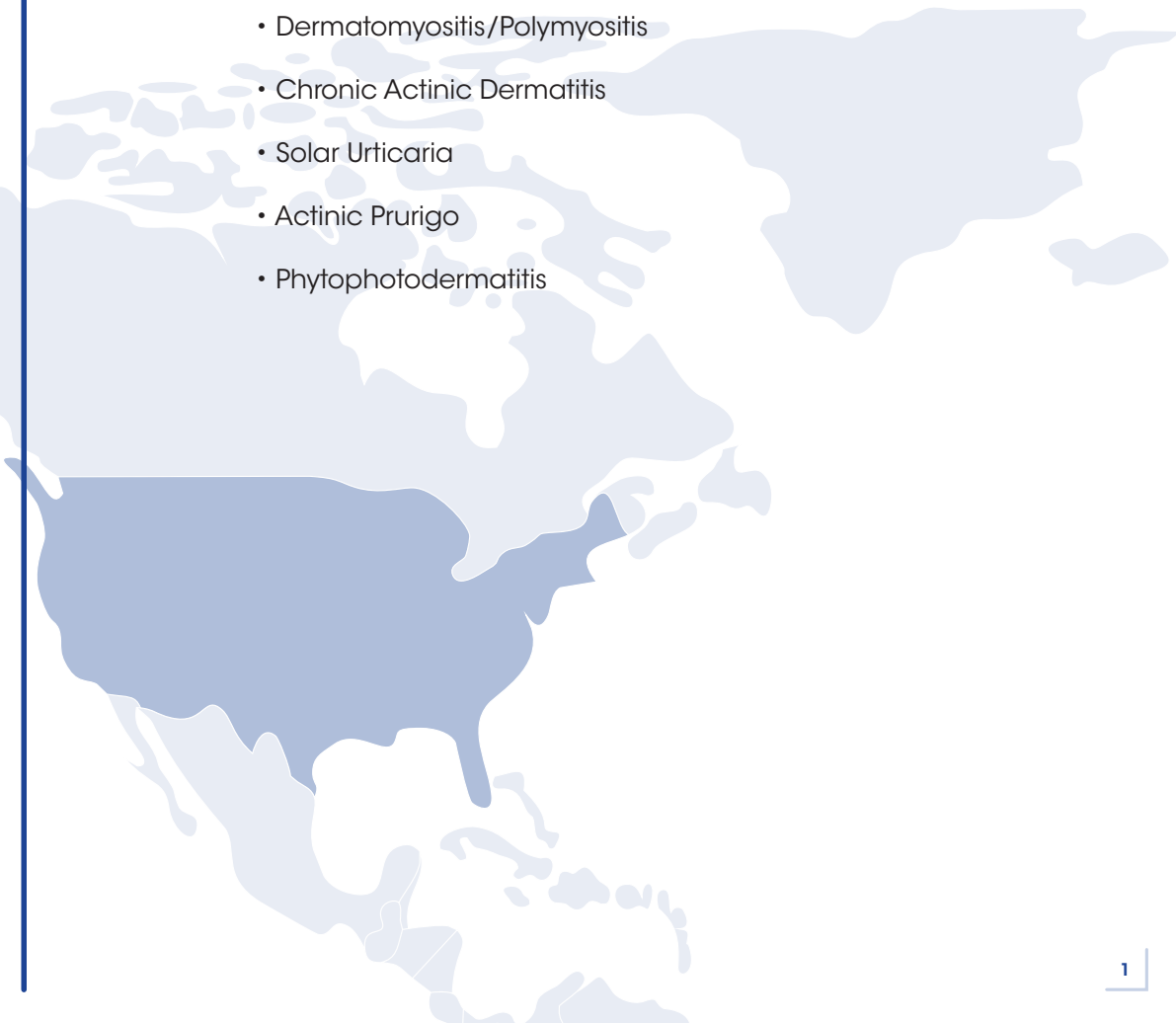




LIST OF AUTOIMMUNE DISEASES

- Currently, in 2013, the U.S. population stands at **313,914,040**.

- There are over 100 different autoimmune diseases, and autoimmunity is considered to be one of the top two reasons for illness in the United States. There are approximately 50 million people who suffer from an autoimmune disease in the United States. Below are the top-10 UV exacerbated medical conditions in the U.S.:
 - Migraine Headaches
 - Polymorphous Light Eruption
 - Rosacea
 - Sjögren syndrome
 - Lupus Erythematosus
 - Dermatomyositis/Polymyositis
 - Chronic Actinic Dermatitis
 - Solar Urticaria
 - Actinic Prurigo
 - Phytophotodermatitis





MIGRAINE HEADACHES

Sensory Stimuli:

- Intense, flashing, glaring lights, sunshine, ultraviolet light, TV or cinema movies.
- Loud sounds.
- Prominent smells, like perfumes or paint thinners, air pollutants, and second hand smoke may all trigger a migraine attack.

- Migraine is considered as an inherited sensitivity of the nervous system resulting in dilation (expanding) of the arteries on the brain surface when triggered by certain stimuli.
- Migraine is an extremely debilitating collection of neurological symptoms that usually includes a severe recurring intense throbbing pain on one side of the head (although in 1/3 of migraine attacks, both sides are affected).
- Attacks last between 4 and 72 hours and are often accompanied by one or more of the following: visual disturbances, nausea, vomiting, dizziness, extreme sensitivity to sound, light, touch and smell, and tingling or numbness in the extremities or face.
- Amazingly, over 10% of the population (31.4 million), including children, suffers from migraines. Nearly 1 in 4 U.S. households includes someone with migraines.
- Source: Migraine Research Foundation



Symptoms:

Characteristics of rash may include:

- Dense clusters of small bumps
- Raised rough patches
- Redness
- Itching or burning
- Blistering and swelling (less common)

POLYMORPHOUS LIGHT ERUPTION

- Polymorphous light eruption: Also known as PLE, PME or PMLE, Polymorphic Light Eruption is the most common skin disorder characterized by photosensitivity and, after sunburn, is the most common sun-related problem seen by doctors. Polymorphous light eruption (PMLE) affects about 10% (31.4 million) of the US population. (Source: WebMD)

- **Causes**

The exact cause of polymorphous light eruption isn't well understood. The rash appears in people who have developed a sensitivity to ultraviolet (UV) radiation from the sun or other sources, such as tanning beds, tanning lamps, and fluorescent lamps. This sensitivity results in sunlight-induced immune system activity that produces inflammation and a rash.

- **UV radiation**

UV radiation is a wavelength of sunlight in a range too short for the human eye to see. UV light that reaches the earth is divided into two wavelength bands — ultraviolet A (UVA) and ultraviolet B (UVB).

- A person with photosensitivity can react to both types of UV radiation. Although UVB doesn't penetrate glass, UVA does. Therefore, exposure to sunlight through windows may cause a reaction in some people with photosensitivity.



ROSACEA

Symptoms:

- Redness on the cheeks, nose, chin, or forehead.
- Small visible blood vessels on the face.
- Bumps or pimples on the face.
- Watery or irritated eyes.

- The prevalence of rosacea is an often reported fact. Most media releases will start with a statement of the number of rosacea sufferers in the US. The latest 2010 estimates from the NRS suggest that 16 million Americans suffer from rosacea, up from the last estimate of 14 million.

Causes

A rosacea-like syndrome (including perioral dermatitis) can result from the indiscriminate use of potent corticosteroids on the face. A number of aggravating factors may be recognized. Excess wind and UV light (weathering, fluorescent light) exposure may accelerate the disease process.

Signs and Symptoms

Facial burning, stinging and itching are commonly reported by many rosacea patients. Certain rosacea sufferers may also experience some swelling (edema) in the face that may become noticeable as early as the initial stage of the disease. The same flushing that brings on rosacea's redness can be associated with a build-up of fluid in the tissues of the face. It often occurs above the nasolabial folds – the creases from the nose to each side of the mouth – and can cause a "baggy cheek" appearance. It is also believed that in some patients this swelling process may contribute to the development of excess tissue on the nose (rhinophyma), causing it to become bulbous and bumpy.

- Source: National Rosacea Society



SJÖGREN SYNDROME

Symptoms:

- Dry, gritty, or burning sensation in the eyes.
 - Dry mouth and/or nose.
 - Difficulty talking, chewing or swallowing.
 - Dry or burning throat.
 - Dry or peeling lips.
- Sjögren syndrome is a systemic autoimmune disease in which immune cells attack and destroy the exocrine glands that produce tears and saliva.
 - Nine out of ten Sjögren's patients are women and the average age of onset is after menopause in women, although Sjögren's occurs in all age groups in both women and men. It is estimated to affect as many as 4 million people in the United States alone, making it the second most common rheumatic disease.
 - Sjögren's syndrome can exist as a disorder in its own right (primary Sjögren's syndrome) or may develop years after the onset of an associated rheumatic disorder, such as rheumatoid arthritis, systemic lupus erythematosus, scleroderma, or primary biliary cirrhosis etc.
 - Sjögren's Syndrome is characterized by periods of increased disease activity called a flare. Flares are triggered by many different things that injure or stress the body including UV light from the sun or fluorescent lighting; emotional stress such as the death of a family member, childbirth or relocation; or even physical injury such as that from a car accident or surgery.



LUPUS ERYTHEMATOSUS

Symptoms:

- Extreme fatigue.
 - Skin rashes.
 - Joint pain.
 - If the disease is more serious, you may have problems with your kidneys, heart, lungs, blood, or nervous system.
 - Lupus symptoms depend on what bodily organs are affected and how seriously they are affected.
- Lupus Erythematosus is not infectious, rare or cancerous. Current data shows that 1.5 million people in the U.S. have been diagnosed with this disease. Of those, 90% of them are women and over 100,000 are children. As a matter of fact, lupus is more prevalent than sickle cell anemia, cerebral palsy, multiple sclerosis and cystic fibrosis combined!
 - Abnormal light sensitivity, or “photosensitivity,” is a major feature of both systemic lupus erythematosus (SLE), which can affect any organ or system of the body, and cutaneous lupus, which is mainly limited to the skin.
 - Source: Lupus Foundation of America



DERMATOMYOSITIS/ POLYMYOSITIS

Symptoms:

The main symptoms include;

- Skin rash or skin changes.
- Muscle weakness.
- Systematic proximal weakness which may be accompanied by pain.

- Classical dermatomyositis consists of a characteristic skin rash and muscle weakness most often noticed initially in the shoulders and hips.
- In clinically-amyopathic dermatomyositis, the skin rash can be present for long periods of time (six months or longer) without the appearance of muscle weakness (some patients having dermatomyositis skin disease been observed to go 20 years or longer without developing muscle weakness). About 40,000 people in the United States may have this disease, with about 3,000 to 5,000 children affected.
- In most dermatomyositis patients, exposure to sunlight or artificial forms of ultraviolet light (UV) will make their skin problems worse. It is the UV rays in sunlight that present the greatest danger to dermatomyositis patients (UV rays are also present in certain types of artificial light sources such as tanning lamps, germicidal lamps and welding apparatus).
- Natural sunlight at the earth's surface contains two types of UV rays - ultraviolet-B (UVB) and ultraviolet-A (UVA). UVB rays, which are the sun-burning rays, are thought to present the greatest danger for aggravating dermatomyositis skin disease. However, the longer wavelength rays of ultraviolet light (UVA) can also cause problems. In addition, repeated mini exposures to UV radiation may account for 80% of total exposure over a lifetime.
- Source:<http://medical-dictionary.thefreedictionary.com/myositis>



Symptoms:

- Redness or inflammation of the face and hands.
- Itching, burning, swelling, small blisters, scaling or peelings of the skin.

Symptoms:

Following limited exposure to sunlight:

- Itchy burning redness on exposed skin.
- Swelling followed by localized or widespread development of wheals (an urticarial flare).

CHRONIC ACTINIC DERMATITIS

- Chronic actinic dermatitis (CAD) is one of the most frequently encountered photodermatoses in patients older than 50 years of age.
- It is characterized by persistent redness of the face and other exposed areas. Its prevalence in Scotland is 16.5 per 100,000 population.
- There is evidence that compact fluorescent lights worsen the condition.

SOLAR URTICARIA

- A skin disorder affected by ultraviolet light.
- Some patients are directly affected by compact fluorescent light. Although some state that 3:1 per 100,000 (101,263) of the population suffer from solar urticaria, according to M. Scott Linscott, M.D., Univ. of Utah School of Medicine, acute urticaria affects 15-20% of the general population (47-63 million people) at some time during their lifetime.
- Source: Medscape.com

- **Summary:**

Photosensitivity to white fluorescent lighting has been demonstrated in 5 patients, 3 with "actinic reticuloid", 2 with solar urticaria. All patients were particularly sensitive to longwave UVR and in some instances, by using filters, it has been possible to demonstrate one spectral region of the fluorescent emission that causes photosensitization, namely 365 nm. In the case of patients with "actinic reticuloid" it is possible that white fluorescent lighting, such as may be commonly used in hospitals, might cause the skin condition to be maintained in an active state.



Symptoms:

- Itchy, inflamed papules, nodules, and plaques on the skin.

Note:

- One cause of premature cataracts is exposure to ultraviolet light.

ACTINIC PRURIGO

Actinic Prurigo

There is evidence that actinic prurigo is worsened by compact fluorescent light. This disease affects 3.3% of the general population (10,359.)

- Source: http://en.wikipedia.org/wiki/Photosensitivity_in_humans

PHYTOPHOTODERMATITIS

Phytophotodermatitis

Phytophotodermatitis may be aggravated by the additional levels of ultraviolet light emitted by compact fluorescent light. The frequency of phytophotodermatitis in the general population has not been well established. The number of people affected by this condition in the U.S. is unknown.

LIST OF AUTOIMMUNE & AUTOIMMUNE RELATED DISEASES

- Acute Disseminated Encephalomyelitis (ADEM)
- Acute necrotizing hemorrhagic leukoencephalitis
- Addison's disease
- Agammaglobulinemia
- Allergic asthma
- Allergic rhinitis
- Alopecia areata
- Amyloidosis
- Ankylosing spondylitis
- Anti-GBM/Anti-TBM nephritis
- Antiphospholipid syndrome (APS)
- Autoimmune angioedema
- Autoimmune aplastic anemia
- Autoimmune dysautonomia
- Autoimmune hepatitis
- Autoimmune hyperlipidemia
- Autoimmune immunodeficiency
- Autoimmune inner ear disease (AIED)
- Autoimmune myocarditis
- Autoimmune pancreatitis
- Autoimmune retinopathy
- Autoimmune thrombocytopenic purpura (ATP)
- Autoimmune thyroid disease
- Autoimmune urticaria
- Axonal & neuronal neuropathies
- Balo disease
- Behcet's disease
- Bullous pemphigoid
- Cardiomyopathy
- Castleman disease
- Celiac disease
- Chagas disease
- Chronic fatigue syndrome**
- Chronic inflammatory demyelinating polyneuropathy (CIDP)
- Chronic recurrent multifocal osteomyelitis (CRMO)
- Churg-Strauss syndrome
- Cicatricial pemphigoid/benign mucosal pemphigoid
- Crohn's disease
- Cogan's syndrome
- Cold agglutinin disease
- Congenital heart block
- Coxsackie myocarditis
- CREST disease
- Essential mixed cryoglobulinemia
- Demyelinating neuropathies
- Dermatitis herpetiformis
- Dermatomyositis
- Devic's disease (neuromyelitis optica)
- Discoid lupus
- Dressler's syndrome
- Endometriosis
- Eosinophilic fasciitis
- Erythema nodosum
- Experimental allergic encephalomyelitis
- Evans syndrome
- Fibromyalgia**
- Fibrosing alveolitis
- Giant cell arteritis (temporal arteritis)
- Glomerulonephritis
- Goodpasture's syndrome
- Graves' disease
- Guillain-Barre syndrome
- Hashimoto's encephalitis
- Hashimoto's thyroiditis
- Hemolytic anemia
- Henoch-Schonlein purpura
- Herpes gestationis
- Hypogammaglobulinemia
- Idiopathic thrombocytopenic purpura (ITP)
- IgA nephropathy
- IgG4-related sclerosing disease
- Immunoregulatory lipoproteins
- Inclusion body myositis
- Insulin-dependent diabetes (type1)
- Interstitial cystitis
- Juvenile arthritis
- Juvenile diabetes
- Kawasaki syndrome

LIST OF AUTOIMMUNE & AUTOIMMUNE RELATED DISEASES

- Kawasaki syndrome
- Lambert-Eaton syndrome
- Leukocytoclastic vasculitis
- Lichen planus
- Lichen sclerosus
- Ligneous conjunctivitis
- Linear IgA disease (LAD)
- Lupus (SLE)
- Lyme disease, chronic
- Meniere's disease
- Microscopic polyangiitis
- Mixed connective tissue disease (MCTD)
- Mooren's ulcer
- Mucha-Habermann disease
- Multiple sclerosis
- Myasthenia gravis
- Myositis
- Narcolepsy
- Neuromyelitis optica (Devic's)
- Neutropenia
- Ocular cicatricial pemphigoid
- Optic neuritis
- Palindromic rheumatism
- PANDAS (Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcus)
- Paraneoplastic cerebellar degeneration
- Paroxysmal nocturnal hemoglobinuria (PNH)
- Parry Romberg syndrome
- Parsonnage-Turner syndrome
- Pars planitis (peripheral uveitis)
- Pemphigus
- Peripheral neuropathy
- Perivenous encephalomyelitis
- Pernicious anemia
- POEMS syndrome
- Polyarteritis nodosa
- Type I, II, & III autoimmune polyglandular syndromes
- Polymyalgia rheumatica
- Polymyositis
- Postmyocardial infarction syndrome
- Postpericardiotomy syndrome
- Progesterone dermatitis
- Primary biliary cirrhosis
- Primary sclerosing cholangitis
- Psoriasis
- Psoriatic arthritis
- Idiopathic pulmonary fibrosis
- Pyoderma gangrenosum
- Pure red cell aplasia
- Raynauds phenomenon
- Reflex sympathetic dystrophy
- Reiter's syndrome
- Relapsing polychondritis
- Restless legs syndrome
- Retroperitoneal fibrosis
- Rheumatic fever
- Rheumatoid arthritis
- Sarcoidosis
- Schmidt syndrome
- Scleritis
- Scleroderma
- Sjogren's syndrome
- Sperm & testicular autoimmunity
- Stiff person syndrome
- Subacute bacterial endocarditis (SBE)
- Susac's syndrome
- Sympathetic ophthalmia
- Takayasu's arteritis
- Temporal arteritis/Giant cell arteritis
- Thrombocytopenic purpura (TTP)
- Tolosa-Hunt syndrome
- Transverse myelitis
- Ulcerative colitis
- Undifferentiated connective tissue disease (UCTD)
- Uveitis
- Vasculitis
- Vesiculobullous dermatosis
- Vitiligo
- Wegener's granulomatosis