

**Table S1. Common skin disorders of human with their types and causes.**

DISORDER	TYPES	CAUSES
<b>Life-long Disorders: Childhood to Adulthood</b>		
<b>Seborrheic dermatitis</b>	Greasy, scaly patches on the scalp or skin in babies as “Cradle cap”. Flare up as swollen greasy white, reddish or yellow crust on skin surface in adults. May persist lifelong or disappear later.	Caused by a fungi <i>Malassezia</i> on skin due to excess oil or a problematic immune system. The exact cause is unclear.
<b>Eczema</b>	Thick bumpy itchy rashes on scalp, face, neck, elbows, wrists to legs in childhood or adults. Either atopic or contact dermatitis. More noticeable in lighter skin as it causes discoloration.	Causes unknown.
<b>Lupus</b>	Red circular patches or ring on skin, sunburn-type painful swollen rashes on cheeks to nose with fever, fatigue, headaches and stiff swollen joints. Mostly in women, and darker skin.	Complex autoimmune disorder with pain and inflammation. African American are more susceptible.
<b>Moles</b>	Common moles are harmless, maybe present throughout the body, on average, 40 in a person. Change in appearance, size, or color may lead to cancer.	Growth from bunch point on skin cells with nearby tissue.
<b>Psoriasis</b>	Itchy red to pink patches of variable size and severity, with white to violet scale. Colour grey to dark brown, have 5 types: <i>Plaque</i> : thick patches on skin; <i>Pustular</i> : red patch covered by skin; <i>Erythrodermic</i> : severely burned areas; <i>Inverse</i> : shiny rash in armpits around genitals; <i>Guttate</i> : tiny spots on scalp, limb and face.	Autoimmune disorder.
<b>Rosacea</b>	Red to dark face with warm skin, have 4 subtypes: <i>erythematotelangiectatic rosacea</i> : reddish, flushing with visible blood vessels; <i>Ocular rosacea</i> : red irritating eye with swollen eyelids; <i>Papulopustular rosacea</i> : Swelled irregular, breakout acne; <i>Phymatous rosacea</i> : thick skin with a bumpy texture.	Exact cause is unknown, but may be due to overactive immunity, heredity or environmental factors.
<b>Vitiligo</b>	Loss of pigmentation, appear as white patches in sunlight exposed areas. May discolour hair. No cure, but treatment by light, topical or alternative therapy.	Lack of sufficient melanocytes that produce the skin pigment melanin.
<b>Temporary disorders, resolved with Time or Treatment</b>		

<b>Acne</b>	Widespread conditions with pustules or pimples pus-filled at tips. Papules appear as raised bumps, painful nodules/lumps below the skin surface	Infection in hair follicles. Dark skin people develop inflamed hyperpigmented dark spots.
<b>Cold Sore</b>	Reddish fluid-filled blister on upper part of the body around face and mouth. Painful, delicate, itchiness or burning sensation. Lasts for 15 days or may return periodically. Treatment can reduce outbreaks.	Cold sores are caused by the Herpes Simplex virus, usually HSV-1.
<b>Candidiasis</b>	Overgrowth of a fungus on skin called cutaneous Candidiasis or Moniliasis. Irritated lesions or pustules on skin-folds, armpit, groin or face. Increased skin hygiene and avoid antibiotic overuse help to prevent candidiasis.	Caused by the yeast <i>Candida albicans</i> .
<b>Hives</b>	Itchy, raised welts in clusters or in one part, pinkish or reddish.	Allergic condition due to stress, illness, friction of tight clothes.
<b>Warts</b>	Contagious colour/darker bumps on the skin of hands, feet, and joints.	Human Papillomavirus or HPV. Subside or remove.
<b>Fungal Nail Infection</b>	Affects toenails, nails with crumbled edges and surfaces, have whitish-yellow scaling and flaking.	Fungus overgrowth around nails.
<b>Atopic dermatitis</b>	Thick bumpy itchy rashes, atopic more noticeable in lighter skin, similar to Eczema	Environmental and other factors including allergens, dry-cold weather, damp, house dust, mites, fur of pets, pollen, moulds, cow-milk, eggs, peanuts, soya, wheat, wool, synthetic fabrics.
<b>Athlete`s foot</b>	Itchy, dry, peeling skin, with blisters and bleeding, pale skin under the foot or between the toes, soggy, cracked, or scaly.	Fungal infection from warm, damp weather, including sneakers.
<b>Skin cancer</b>	Uncontrolled life-threatening growth of the darker skin cells having excess melanin triggered by harmful sun rays. Types includes: <i>Basal cell</i> : On the neck, arms or head. Round pink patch or bump in lighter skin; or black to brown mole in dark skin; <i>Squamous cell</i> : 2 <sup>nd</sup> common, scaly-dry patches or actinic keratoses. <i>Melanoma</i> : Most serious, spread easily to other parts, may develop from a mole or pigmented area, toenails, or fingernails.	May occur after prolonged repeated sun exposure.
<b>Disorders of the deeper layer of Skin</b>		
<b>Carbuncle</b>	Irritated swelled red lump with white or yellow center under the skin. Filled with pus, crust over lump or ooze-out, with fever, tiredness and itchiness.	<i>Staphylococcus aureus</i> infected hair follicles.

<b>Cellulitis</b>	Develops quickly, and spread rapidly all over the body. Painful swollen red, hot areas in legs, but occur in any part. Severe form may be life-threatening	Bacterial infection in the deeper layers of the skin
<b>Conditions develop during specific time of Life: Children/Adults</b>		
<b>Haemangiomas</b>	Bump or small scratches on head, neck, or face of infants; bulge out. May disappear with age.	Harmless tumors.
<b>Dermatomyositis</b>	Most common in children (5-15) and adults of 40-60 years. Red-to-purple colour rash on face, chest, elbows, muscle, nails; swelling and weakness.	Rare inflammatory disorder African Americans are three times more vulnerable than white.
<b>Impetigo</b>	Commonest contagious bacterial infection in young children with itchy sores and blisters around face and mouth. Burst sores may leave a crust, that dries into a red mark.	Caused by the <i>Staphylococcus aureus</i> and Group A <i>Streptococcus</i> Sp.
<b>Measles</b>	Young babies are vulnerable. Brown to red rash all over body, watery eyes, running nose, cough, fever, reddish spots in mouth. Preventable by vaccination to susceptible babies, and pregnant ladies via Measles, Mumps, Rubella (MMR) vaccine.	Highly infectious, airborne virus disease caused by a single-stranded, enveloped RNA virus: Measles or Morbilli virus of Paramyxoviridae. Humans are the only natural hosts.
<b>Shingles or Herpes zoster</b>	Infected in childhood, virus carried in nerves or muco-cutaneous body parts. Reactivate in older people to cause shingles. Initiate by pain and develop blister like reddish rash within 48h.	Caused by the Varicella-zoster virus, that causes chickenpox.
<b>Seborrheic keratosis</b>	Harmless bumps develop with age, black to dark brown or yellow bumpy patch on skin. Indistinguishable with skin cancer. Removable using cryotherapy or electrosurgery.	Benign proliferation of immature keratinocytes.
<b>Age Spot</b>	Flat over-pigmented spots develop from long sun exposure. Dark skin people develop age spots due to production of excess melanin triggered by environmental factors, pimple, wound, hormonal changes, or skin care product.	Caused by overactive pigment cells.
<b>Rare Disorders</b>		
<b>Ichthyosis</b>	A collection of 20 disorders: - <i>Ichthyosis vulgaris</i> (1 in 250): white grey, brown scales in children; X-linked recessive ichthyosis (1 in 1,000).	Hereditary disorder, develop due to moisture sealing or some proteins altered by genetic change, and acquired in adults
<b>Harlequin Ichthyosis</b>	Genetic mutation. Extremely thick, rigid deep cracked skin, restricted in arm and leg movements in new-born.	Inherited via autosomal recessive genes, with 25% probability of a

	Babies may suffer breathing problem or respiratory failure (1 in 5000000).	child to acquire if both parents are carriers.
<b>Scaled skin syndrome</b>	Staphylococcal scalded skin syndrome (SSSS), with blistered outer layers and peel, due to exfoliative toxin or Ritter's illness (56 per 100,000).	Caused by <i>S. aureus</i> . Asymptomatic in 40% adults (on skin or mucous membranes).