Comparison Chart of Systemic Autoinflammatory Diseases (SAID)

	Cryopyrin-Associated Periodic Syndromes (CAPS)				Pyrin	Protein Folding	Mevalonate Kinase Deficiencies		Inflammatory Bone Diseases			Pyogenic Diseases			Granulomatous	Monarch-1	Proteasome	Idiopathic		Macrophage Activation Diseases			*PLCG2*-associated		*SLC29A3* related	*ADA2 deficiency*
	Familial Cold Autoinflammatory Syndrome*	Muckle-Wells Syndrome*	Neonatal-Onset Multisystem Autoinflammatory Disease—aka Chronic Infantile Neurological Cutaneous Articular Syndrome (CINCA)*	Schnitzler Syndrome	Familial Mediterranean Fever*	Tumour Necrosis Factor (TNF)-Associated Periodic Sydrome—aka Familial Hibernian Fever*	Hyperimmuno-globulinemia D with Periodic Fever Syndrome (HIDS)*	Mevalonate Aciduria (MA) (Mevalonate Kinase Deficiencies, such as HIDS & MA are also referred to as MKD)	Deficiency of Interleukin-1ß (IL-1ß) Receptor Antagonist (DIRA)—aka Osteomyelitis, Sterile Multifocal w/Periostitis Pustulosis	Majeed Syndrome—aka Chronic Recurrent Multifocal Osteomyelitis-aka Synovitis, Acne, Pustulosis, Hyperostosis, Osteitis Syndrome	Chronic Recurrent Multifocal Osteomyelitis—aka Synovitis, Acne, Pustulosis, Hyperostosis, Osteitis Syndrome	Deficiency of Interleukin-36-Receptor Antagonist (DITRA)—aka Generalized Pustular Psoriasis (GPP)	Familial Psoriasis (PSORS2)—aka CARD14-Mediated Pustular Psoriasis	Pyogenic Sterile Arthritis, Pyoderma Gangrenosum, & Acne Syndrome	Juvenile Systemic Granulomatosis —aka Blau syndrome, Pediatric Granulomatous Arthritis (PGA), Early Onset Sarcoidosis, or Jabs Syndrome	NLRP12-Associated Periodic Fever Syndrome—aka Familial Cold Autoinflammatory Syndrome 2, or Guadaloupe Periodic Fever	Chronic Atypical Neutrophilic Dermatosis w/ Lipodystrophy & Elevated Temperature—aka Nakajo-Nishimura Syndrome	Behçets Disease	Periodic Fever, Aphthous Stomatitis, Pharyngitis, & Cervical Adenitis (PFAPA) —aka Marshall Syndrome	Systemic-Onset Juvenile Idiopathic Arthritis—aka Still's, Systemic Juvenile Idiopathic Arthritis	Adult-Onset Stills Disease—aka Adult Still's, Wissler-Fanconi Syndrome	(Primary) Familial Hemophagocytic Lymphohistiocytosis—aka Familial Erythrophagocytic Lymphohistiocytosis	PLCG2-associated Antibody Deficiency & Immune Dysregulation, (PLAID)—aka Familial Atypical Cold Urticaria (FACU) or FCAS3	Autoinflammation & PLCG2-associated Antibody Deficiency & Immune Dysregulation (APLAID)	SLC29A3 Spectrum Disorder—aka H. syndrome; Pigmented Hypertrichosis w/IDDM; Fasalabad Histiocytosis & Sinus Histiocytosis w/Massive Lymphadenopathy	Deficiency of Adenosine Deaminase 2 (DADA2) —aka Fever w/Early Onset Stroke (FEOS)
ACRONYM	FCAS	MWS	NOMID/CINCA	SCHNITZLER	FMF	TRAPS	HIDS	MA	DIRA/OMPP	MAJEED	CRMO/SAPHO	DITRA/PSORP	CAMPS/PSORS2	PAPA	BLAU/PGA/EOS	NLRP12/FCAS2	CANDLE/PRAAS	BEHÇETS/BD	PFAPA	soJIA/sJIA	AOSD	1° HLH/ FHL	PLAID/FCAS3	APLAID	SLC29A3	DADA2
GENE	*NLRP3*	*NLRP3*	*NLRP3*	Currently unknown. (Some pts. w/somatic *NLRP3* mutations.)[79]	*MEFV*	*TNFRSF1A*	*MVK*	*MVK*	*IL1RN*	*LPIN2*	Currently unknown.	*IL36RN*	*CARD14*	*PSTPIP1*	*NOD2*	*NLRP12*	*PSMB8; also PSMA4, PSMB8, PSMA3, POMP*[91]	*ERAP1 (with HLA-B51); also variants near: CCR1, KLRC4, STAT4*[92]	Currently unknown.	Currently unknown.	Currently unknown.	*PRF1, STX11, STXBP2, MUNC13-4 , RAB27A, X link: SH2D1A, BIRC4*	Heterozygous genomic deletions within the *PLCG2* gene[61]	*PLCG2* mutation	*SLC29A3*	*CECR1*
INHERITANCE	Autosomal Dominant. Large familial groups, some spontaneous mutations.[1]	Autosomal Dominant. Spontaneous mutations, some familial groups.[1]	Autosomal Dominant. Spontaneous mutations, few familial cases.[1]	Unknown.	Autosomal Recessive. Some cases are gene-dosage-dependent autosomal dominant.[10]	Autosomal Dominant. Spontaneous mutations, some familial groups.[1]	Autosomal recessive. Some cases w/only one mutation found.[32]	Autosomal recessive.	Autosomal recessive.	Autosomal recessive.	Currently unknown.	Autosomal recessive.	Autosomal Dominant. Spontaneous mutations, some familial groups.[23]	Autosomal Dominant. Spontaneous mutations, some familial groups.[29,30]	Autosomal Dominant.	Autosomal Dominant. Spontaneous mutations, some familial groups.[29,30]	Autosomal recessive.	Complex.	Currently unknown.	Complex.	Currently unknown.	Autosomal recessive, but if X-linked: inheritance is dominant.	Autosomal Dominant.	Autosomal Dominant.	Autosomal Recessive.	Autosomal recessive.
ETHNICITY	Affects all races, but many are of European descent.[1]	Affects all races, but many are of European descent.[1]	Any–present in all races.[1]	Affects all races, but most cases are in Europe.[13] More men than women are affected.	Turk, Armenian, Arab, Sephardic Jew, Italian.[1] Most common inherited periodic fever syndrome.	Affects all races. 2nd most common inherited SAID (after FMF.)[1]	Mostly of Dutch descent, or Northern European.[1]	Mostly of Dutch descent, or Northern European.[1]	Carriers in 0.2% population of Newfoundland & 1.3% in Puerto Rico. Also Dutch Brazilian & Lebanese pts.[14]	Currently, the only documented cases are of Middle Eastern ancestry.[15]	Affects all races, but the majority of patients have European ancestry; more female pts. than males.[21,22]	May affect all races. Pts. w/Caucasian, Spanish, Asian, African, Algerian & Tunisian ancestry.[24,25,71]	Most w/European or Asian ancestry. Pts. in US, EU, Canada (Newfound-land), Haiti, & Taiwan.[23]	Currently, the only documented cases are from Europe, New Zealand & the USA.[26]	Affects all races.	Unknown. Cases in Guadeloupe, US, Martinique, France, Italy, & Armenia.[28,29,71]	Unknown. Caucasian, Hispanic, Japanese pts. & one case in South African.[27,90]	Rare in the USA. More common in the Middle East, Asia & Japan. (Silk Road Route.)[31,42]	Affects all races.[42]	Affects all races. soJIA accounts for 10% of all JIA.[50]	Rare. Affects all races.[55]	Affects all races. 80% of African Americans, & 20% of pts. w/European decent have *PRF1* mutations.[47,68]	Unknown. Most reported cases w/European ancestry.	Unknown.	Unknown. Many pts. w/ Middle Eastern ancestry. Some from India, Pakistan, Spain, & Bulgaria.[79]	Unknown.
FREQUENCY IN THE WORLD	1:1 million, or more. In USA 300+ diagnosed–most cases are from large family groups.[23]	1:1 million, maybe more. Some large family groups.[1] Frequency of CAPS in France is 1:360,000.[35]	Estimated frequency 1:1 million, mostly due to spontaneous genetic mutations.[1]	Unknown. Over 150 known cases, mostly in Europe.[13]	In specific ethnic groups, the carrier frequency of *MEFV* variants is up to 1:5 people.[1]	Unknown. TRAPS affects 0.01:10,000 people in the European Union.[31] >1000 pts. worldwide.[32]	Unknown, but very rare. >200-300 known patients worldwide, (>300, when suspected cases are also included.)[31]	Unknown, but very rare. <100 known patients worldwide.[11]	Unknown, but very rare. In some regions of Aricibo, Puerto Rico w/more DIRA carriers, DIRA may occur 1:6300.[14]	Unknown, but very rare. Very few documented cases at this time.[18,53]	Unknown, but rare.	Unknown but rare. 1% of Sfax, Tunisians are carriers, w/ a 0.52% chance of having the disease in this population.[24,25]	Unknown, but rare.	Unknown, but rare.	Unknown, but rare.	Unknown, but rare.	Unknown, but rare.	Prevalence is 80-370:100,000 people in Turkey, 10:100,000 in Japan & 8.0:100,000 in Yorkshire, UK.[1]	Unknown. Most common non-infectious recurrent fever disorder.[42]	Uncommon. 0.4–0.9 cases per 100,000 people, per year.[46]	France: estimated that 0.16:100,000 people have AOSD. AOSD affects more women than men.[44]	1° HLH affects 1:50,000 people worldwide.[66]	Unknown but rare.	Unknown but rare.	Unknown but rare.
TIMING OF SYMPTOMS OR ATTACKS	12-24 hours, or longer. Onset of fever & flares is often 1-3 hours after exposure to cold or cooling temperatures.[1]	Often lasts 2-3 days. Random onset–flares of fever & symptoms are often triggered by cold or cooling temperature.[1]	Continuous w/increased symptoms & fever during flares.[1] Chronic inflammation noted between flares.	12-36 hours. Rash is present first. Intermittent fevers, that often occur separately from the rash.[13]	12-72 hours.[1,9] Recurrent fever & flares can occur weekly, or only a few times a year.	Days to weeks. Average flare is 3 weeks.[1,9]	3-7 days. Recurrent bouts of fever & flares every 2-12 weeks.[1,9] Some flares occur after vaccines.[1]	4-5 days. Recurrent flares & fever every 2-3 weeks. Patients have chronic inflammation noted between flares.[11]	Continuous inflammation from birth/fetal development. Untreated DIRA can lead to death in infancy–childhood.[16]	Flares last for a few days, w/1-4 exacerbations a month of high fevers, severe pain, & joint swelling.[18,53]	At least 6 months w/chronic or relapsing symptoms. Often 7-25 yrs. of symptoms. Many bone lesions heal completely.[19,22]	Flares last days–weeks. Some w/chronic symptoms. Most flare w/infections, stress, medication changes, during pregnancy or menstruation.[24,25]	Continuous chronic pustular or plaque psoriasis, triggered by inflammatory stimuli. Some cases w/psoriatic arthritis.[23,24]	Early-onset, destructive, recurrent inflamma-tion of the joints, skin & muscle. Flares often occur after mild injury, or injections.[26]	Intermittent-persistent daily fevers, rash & arthritis.	1-3, to up to 7-15 days of fevers 39–40°C, rash & pain. Onset after exposure to cold or cooling temperatures.[28,29]	Frequent fevers w/disease flares. Inflammatory flares & symptoms are often present before the age of 6 months.[26,27]	Mouth ulcers are present in almost all patients during flares, for around 10 days w/inflammation in the eye, & arthritis.[42,43]	Periodic fevers & symptoms lasting 3-6 days, recurring every 21-28 days. Pts. are symptom-free between flares.[42]	Fevers often > 39°C 1-2 times/day for >2 weeks, most often occurring in the evening w/arthralgia, rash & other symptoms.[45,46]	High fevers > 39°C that last for <4 hours, recurring more than once a week, w/ a maculopapular rash & arthralgia.[44]	Fevers often > 39°C 1-2 times/day for >2 weeks, most often occurring in the evening w/arthralgia, rash & other symptoms.[47,48]	Onset <5 minutes after exposure to cold air (evaporative cooling).[64] Frequent sinus/lung infections. Concurrent autoimmune diseases.[64,65]	Recurrent skin lesions, chronic inflammation, & progressive eye complications from this disease.[66,67,68]	Fever 39°C w/flares that last 7-10 days w/joint & abdominal pain; peri-cardities & sometimes diarrhea. Flares occur once every 2-3 months.[76]	Intermittent, recurrent fevers, livedo reticularis rash, vasculopathy, & high risk for early-onset lacunar stroke.[73,74]
AGE OF ONSET	Infancy, but a few present/w symptoms later in childhood or adolescence.[1]	Infancy, but a few present/w symptoms later in childhood or adolescence.[1]	Neonatal/early infancy. Rash, symptoms, & abnormal labs are often present at birth.[1,9]	Most cases start in middle age, over 35-50 yrs. Youngest pt. was 13 yrs old. Symptoms start w/the rash.[13]	Infancy, to under 20 years of age for the first symptoms.[9]	Most first attacks by 3 yrs, & almost all begin by 20 yrs. of age; a few start later in life.[9]	>90% present w/symp-toms in infancy.[1]	Most present w/symp-toms at birth, or in early infancy. Most have facial features noted at birth.[11]	Most have symptoms at birth, or as a neonate: pustular rash, bone pain, swollen joints, & oral ulcers.[16]	Most present w/symp-toms in infancy to early childhood, between 3 weeks to 2 years of age.[18]	Mostly affects children–some adult onset. Peak-incidence of flares is around 10 years of age.[22]	Variable age of onset. Many have symptoms starting in childhood. Some have symptoms beginning in adulthood.[24]	Variable age of onset from infancy–childhood to adulthood w/pustular psoriasis.[23,24]	First symptoms of arthritis develop by 1-10 yrs old, & skin lesions develop during adoles-cence.[26,32]	Neonatal/early infancy. Rash, fevers, symptoms, may be present at birth.[28,29]	Onset at birth or in infancy. Progressive damage from chronic inflammation noted as the child grows.[26,27]	Onset <1yr: often by 6 months–early childhood. Some in utero or late childhood. A few adult-onset cases.[42,43,69]	Periodic fevers & symptoms lasting 3-6 days, recurring every 21-28 days. Pts. are symptom-free between flares.[42]	Early childhood, usually between 2-5 years of age. A few adult-onset cases. Many teens outgrow it.[42]	Onset before the age of 16–most often by 2 years of age, or between 0-5 yrs. of age.[46]	First onset of symptoms occurs between 16-35 yrs. of age. Affects all ages.[44]	First onset of symptoms occurs between 16-35 yrs. of age. Affects all ages.[44]	Onset before the age of 1 year. Lifelong symptoms, but some find the symptoms less severe in adulthood.[48,65]	Onset in infancy-under 6 months of age. Lifelong symptoms, but some find the symptoms less severe in adulthood.[64,65]	Onset in infancy w/recurrent skin lesions, arthralgia, eye inflamma-tion, & infections. Some w/ intestinal symptoms.[68]	Onset in infancy-starts w/recurrent fevers & flares. Chronic & progressive systemic symptoms develop.[69,70,71]	Onset of symptoms in infancy–early childhood. w/recurrent fevers, livedo reticularis rash, & vasculopathy.[73,74]
SYSTEMIC FINDINGS:																										
SKIN/ CUTANEOUS	Cold induced urticaria-like rash w/increased neutrophils at the eccrine coils.[1] Almost daily rash that increases w/flares.[1]	Urticaria-like rash w/increased neutrophils at the eccrine coils.[1] Most w/daily rash that increases w/flares.[1]	Ever-present! Urticaria-like rash w/increased neutrophils at the eccrine coils. Rash increases w/flares.[4]	Maculopapular rash, & plaques (sometimes itchy) on the chest & limbs. Dermis has neutrophilic infiltrate. Dermopaphies.[13]	Erysipeloid erythema on the ankle–foot–below knee region–lasts 2-3 days during flares of symptoms.[1]	Migrating rash w/deep pain under rash areas. Severe pain follows the rash path from the trunk out to the limbs.[9]	Diffuse maculopapular rash. Some w/petechiae or purpura present. A few w/apthous ulcers.[1,9]	Diffuse maculopapular or morbilliform rash. Some w/petechiae or purpura present. A few w/apthous ulcers.[1,9,11]	Epidermal neutrophilic pustules at hair follicles. birth, ulcers, pathergy, hyperkeratosis, acanthosis; high neutrophil infiltrate of dermis.[16,69]	Most patients have inflammatory dermatosis, Sweet's syndrome, pustular skin lesions, psoriasis. Intra-epidermal neutrophils.[18,53]	Some patients have acne, &/or pustulosis on the palms &/or soles of their extremities (w/ SAPHO). 23% w/psoria-sis.[19,22,24]	Recurrent, generalized pustular psoriasis & high fevers after erythema-tous rash. Some w/acral pustules & nail damage, or chronic plaques.[24,25]	Generalized pustular psoriasis (can be severe). &/or plaque psoriasis. Sometimes nails are affected w/ psoriasis.[23,24]	Pathergy. Pyoderma gangrenosum ulcerative lesions, &/or severe cystic acne. Affected tissues w/high neutrophil infiltration.[26]	First symptom: scaly plaques. The rash often starts on the face, then on the torso. Biopsies w/ non-caseating granu-lomatous dermatitis.[28]	Present during flares: Cold-induced urticarial or malar rash[28] noted in some pts. Some with buccal aphthosis.[28,29]	Annular cutaneous plaques w/residual purpura. Lipodystrophy: first on face & around joints. Lips swell w/flares. Purple-red edema.[26,27]	Pathergy. Pseudofol-liculitis, erythema nodosum-like &/or acneiform nodules. 98% w/mouth ulcers, & 65% have genital ulcers.[42]	Some have a rash with flares. Aphthous stoma-titis, & pharygitis w/ exudate, (but no infection) is a classic finding.[42,43]	Rash: Fleeting, evanes-cent, migratory, bright salmon-pink, morbilli-form, macular rash often presents w/onset of fevers.[45,46]	Evanescent, salmon-pink, mildly pruritic maculopapular rash on the proximal limbs & trunk.[44]	40% w/transient maculopapular, nodular or purpuric skin rashes during bouts of high fever. Jaundice.[67,68]	Cold urticaria, erythema & itching post cold exposure fair, wet skin, cold food). Some w/angioedema; chronic granuloma. Ice cube test negative.[64]	Erythematous plaques & vesiculopustular blister-ing rash that intensifies w/heat & sun exposure. Cellulitis often develops w/rashes.[66,67]	Hyperpigmentation w/hypertrichosis.[69,70,71,72] Some w/notable varicose veins on the legs.[69]	Livedo reticularis rash, few w/polyarteritis nodosa. Diffuse vasculopathy, w/impaired endothelial integrity & endothelial cellular activation.[73,74]
NEUROLOGIC	Some have headaches, fatigue w/fever after cold exposure. Unknown if there are notable CNS affects at this time.[1]	Some have headaches, fatigue w/fever & flares. Uncommon to have many other CNS symptoms.[1] A few pts. have MWS/NOMID crossover of symptoms.	Headaches, fever, fatigue, chronic aseptic meningitis, & high CNS pressure (ICP). Many w/mental &/or cognitive impairments. Papille-dema is common.[1]	Intermittent fevers can rise > 40°C. Chills are uncommon. Fatigue & headaches are common w/fevers. Temperature changes, stress & exer-cise can trigger flares.[13]	Fevers. Acute aseptic meningitis is rare & can occur during flares, but is never chronic.[1] Other neurological involvement is very rarely seen in FMF.	Fevers lasting >3 days at over 38°C w/flares. Some have headaches w/flares of symptoms.[1,9]	Headaches & fevers w/flares of symptoms are common.[1,9] More severe neurological symptoms are rarely present in HIDS.[9]	Fevers w/flares. Micro-cephaly, dolichocephaly, mental retardation, developmental delays, cerebellar ataxia, cerebellar atrophy & epilepsy often develop over time.[11]	High fevers are not common, or noted in the neonatal period. Neurological complica-tions are not common. A few cases of cerebral vasculitis noted.[16,19]	High fevers last for a few days w/flares & severe pain. Other neurological symptoms are not noted. Growth delays in height, & chronic pain are com-mon.[18,53]	Fevers affect a number of patients during flares of CRMO. Other neuro-logical symptoms are not noted. Some w/impaired bone growth, or overall impaired growth.[19,22,24]	Sudden onset high fever >40°C w/chills. Some pts. have a headache w/the onset of the rash & fever, plus muscle weakness & elevated heart rate.[25,81]	Not seen.[23,24]	Fevers can accompany flares of joint inflam-mation and pain. Other neurological symptoms are not noted.[27]	Intermittent-persistent daily fevers. Some have-cranial neuropathies. 80% have vision damage & joint deformities if untreated. Some cases have peripheral nerves affected.[28]	Fevers 39–40°C myalgia, headaches w/flares. Other neurological symp-toms are not noted.[29]	Aseptic meningitis & systemic inflammation. Growth delays–low height & weight. Devel-opmental delays.[26,27]	20–40% have Neuro-Behçets w/headaches, aseptic meningitis or meningoencephalitis, seizures, hemiplegia, or cranial nerve palsies. Cerebral venous throm-bosis w/high ICP noted.[42]	High fevers for 3-6 days, w/chills & malaise. Some patients have headaches w/flares. Other neurological symptoms are not noted.[42]	High fevers >39°C 1-2 times/day for >2 weeks. Other neurological symptoms are rare. A few cases w/seizures, meningismus, irritabil-ity & decreased level of consciousness.[45]	Not noted to be from soJIA.[45,46]	Not noted.[44]	Not noted.[47,48,49]	Not noted.[64,65]	Not noted.[66]	Blindness due to CNS inflammation.[48]	Uncommon.[68]	Many develop corneal erosions, blisters, ulcerations, intraocular hypertension, &/or cataracts.[66,67,68]	Uveitis. Blindness can occur from anterior uveitis & glaucoma. Pto-sis, eyelid swelling from histiocytic deposits.[69,70,71] Strokes have the poten-tial to cause blindness.	Unknown.[73,74] Strokes have the potential to cause blindness.
AUDITORY	Some pts have mild hearing loss–not cur-rently known if it's from CAPS inflammation.[1,8]	Many have increased sensorineural hearing loss, starting in adoles-cence.[1]	Many have increased sensorineural hearing loss, from infancy/child-hood.[1,8]	Uncommon.[13]	Uncommon–not be-lieved to be caused by a FMF disorder.[1]	Uncommon–not believed to be caused by TRAPS.[1]	Uncommon–not be-lieved to be caused by HIDS.[1,9]	Uncommon–not believed to be caused by MA.[1,9,11]	Not noted.[15,16]	Not noted.[18,53]	Not noted.[19,21,22,24]	Not noted.[24,81,82]	Not seen.[23, 24]	Not noted.[29,30,31]	Not noted.[28]	Many have increased sensorineural hearing loss.[28,29]	Some have frequent otitis &/or recurrent sinusitis.[27]	Not noted.[42,43]	Not noted.[40,41]	Not noted to be from soJIA.[45,46]	Not noted.[44]	Not noted.[47,48,49]	Not noted.[64,65]	Not noted.[66]	Sensorineural hearing loss, from early infancy/ childhood.[68,70]	
OPHTHALMIC	Conjunctivitis (non-infectious) during flares.[1]	Conjunctivitis (non-infectious) during flares,[1] or corneal haze.[35] MWS/NOMID crossover pts. may have more eye involvement.	Papilledema, uveitis, iritis, conjunctivitis. Some w/retinal scarring, corneal haze or vision loss.[4,68]	Not noted.[13]	Very rare to uncommon.[1]	Conjunctivitis, & peri-orbital edema during flares.[1,9]	Very rare to uncommon.[9]	Uveitis, central cataracts, blue sclerae & tape-toretinal degeneration are often present, even in less severe cases.[11]	Eye issues are rare. Non-infectious conjunc-tivitis can be caused by DIRA.[15,16]	Not noted.[18,53]	Some cases of uveitis.[19]	Not noted.[24,81,82]	Not seen.[23, 24]	Not noted.[29,30,31]	Uveitis (some w/blind-ness) 50% w/cataracts, 1-3 pts. get 2° glaucoma, inflamed conjunctiva, lacrimal glands, retina & optic nerves.[28]	Not noted.[28,29]	Nodular episcleritis (in-flammation on the eye.) Conjunctivitis. Keratitis. Periorbital edema. Purple-red eyelids.[26,27]	Frequent anterior &/or posterior uveitis. Cata-ract, retinal vasculitis <30% risk for blindness. Papilledema w/CNS involvement.[42]	Uveitis can be a compli-cation from soJIA.[45]	Not noted.[44]	Blindness due to CNS inflammation.[48]	Uncommon.[68]	Uveitis. Blindness can occur from anterior uveitis & glaucoma. Pto-sis, eyelid swelling from histiocytic deposits.[69,70,71]	Uveitis. Blindness can occur from anterior uveitis & glaucoma. Ptosis, eyelid swelling from histiocytic deposits.[69,70,71]
CARDIO-PULMONARY	Not noted.[1]	Rare.[1]	Some have clubbing of fingers. Some cases of pericardial effusions, or pericarditis.[1]	Not noted.[13]	45% have pleuritis, pain-ful respiration, w/flares. Some w/pericarditis.[1]	Common, including pleurisy.[1]	Rare.[1] Some pts. have developed severe respi-ratory infections. Higher risk for issues w/*S. pneumoniae* infections.[78]	Rare.[1,11]	Some w/resp. distress. 1 case: Pulmonary hemo-siderosis & progressive interstitial fibrosis.[15,16,17]	Not noted.[18,53]	Not common–some pa-tients also have ANCA+ Vasculitis that can affect the lungs.[18,54]	Elevated heart rate. Elec-trolyte imbalances during fever & onset of pustular rash; Risk for cardiac ar-rest, & septicemia.[19,81]	Not noted.[23, 24]	Not noted.[29,30,31]	Some have atrial hyper-tension &/or pericarditis. Some cases with lung involvement.[24,25]	Not noted.[28,29]	Clubbing of the fingers &/or toes. At risk for cardiac arrythmias & dilated cardiomyopa-thy.[26,27]	Myocarditis, endocarditis w/aortic or mitral insuffi-ciency, arterial aneurysm, pulmonary embolism.[42]	Flares of fevers, stoma-titis & pharygitis are not associated w/respiratory illness.[42,43]	Serositis (especially pericarditis) is often seen. Pleuritis, pleural effusions can occur. Risk for MAS.[45]	<25% have pleuritis, pericarditis (a few w/tamponade.) Some myocarditis, pleural effusions, ARDS.[44,46]	High risk for respiratory infections triggering fevers, systemic inflam-mation & MAS. Edema.[48]	44% w/recurrent sinus & ear infections, >50% w/allergies, asthma &/or autoimmune diseases.[65]	Mild humoral immune deficiency w/increased frequency of sinus &/or respiratory infections or interstitial pneumonia.[68,70]	Pericarditis w/flares. Cardiac defects noted: ASD, VSD, PDA, mitral valve prolapse, cardio-megaly & others.[69,70]	Unknown.[73,74]
ABDOMINAL	Uncommon.[1]	Some have abdominal pain w/flares or other gastrointestinal issues.[1]	Nausea, vomiting & abdominal pain w/flares, or w/high CNS pressure.[4]	GI symptoms are uncom-mon. Enlarged liver &/or spleen is common.[13]	Peritonitis, diarrhea, pain, and/or constipation with flares.[1]	Peritonitis, diarrhea, & constipation w/flares.[1]	Extreme pain, vomiting & diarrhea w/flares.[1,9] Some w/enlarged liver/ spleen, other GI issues.[78]	Rarely have GI issues. Mouth ulcers, stomatitis, & failure to thrive are common.[10]	Enlarged liver &/or spleen. Cholestatic liver disease. Pain, vomiting & diarrhea w/flares.[1,9,11]	Rarely have GI issues. Mouth ulcers, stomatitis, & failure to thrive are common.[10]	Enlarged liver & cho-lestatic jaundice in the neonatal period, but it is transient.[16,53]	Nausea during flares. At risk for loss of appetite.[19,80] Infant case w/failure to thrive, diarrhea.[81]	Not noted.[23,24]	Some patients also have inflammatory bowel diseases.[78]	Abdominal pain, diarrhea & often present w/ flares.[40,41]	Enlarged liver &/or spleen. Some w/ GI pain, higher risk for kidney &/ or liver issues.[24,25,26]	Some patients have ab-dominal pain w/flares.[28]	Enlarged liver, with elevated liver enzymes; enlarged lymph nodes.[26,27]	Loose bowels w/flares. Enlarged liver & abdo-men. Delayed or slow growth.[26,27]	Ulcers from mouth to anus. Nausea, abdominal pain, anorexia, diarrhea, (may be bloody).[42]	Abdominal pain, diarrhea & often present w/ flares.[40,41]	Not noted. Some have concurrent autoim-mune diseases that may involve other organs.[65]	Not noted. Some w/bouts of abdominal pain, bloody diarrhea, enterocolitis, or ulcerative colitis.[67,68]	Diabetes Mellitus. En-larged liver/spleen. Abd. pain, diarrhea, failure to thrive. Hypogonadism.[69,70]	
LYMPHATIC	Not noted.[1]	Rarely noted.[1]	Some pts. with enlarged liver and/or spleen, many have enlarged lymph nodes.[1]	<20% w/lymphoma, IgM myeloma, or Walden-ströms. >45% w/enlarged lymph nodes.[13]	Enlarged spleen is common; some have enlarged lymph nodes.[1]	Enlarged spleen is common; some have enlarged lymph nodes.[1]	Enlarged cervical lymph nodes w/flares.[1] Few w/enlarged spleen.[78]	Enlarged spleen, &/or lymph nodes are common.[1,11]	Enlarged liver and/or spleen is common. Risk of organ failure if untreated.[16]	Joint swelling, severe bone pain. Bone biopsy shows no infection. Common: Balloon-like damage & destruction of the ante-rior rib ends, periosteal elevation along multiple long bones, multifocal osteolytic lesions. Other bones affected.[16]	Periarticular tender soft tissue swelling. Bone biopsy shows no infec-tion. Early-onset Chronic Recurrent Multifocal Osteomyelitis (CRMO), periarticular tender soft tissue swelling, short stature, delayed bone age, contractures.[18]	Some cases of ANCA+ Vasculitis that can affect the kidneys.[19]	Risk for renal and liver impairment & systemic infection w/severe flares.[78,81]	Not seen.[23, 24]	Not noted.[29,30,31]	Enlarged liver &/or spleen, enlarged lymph nodes.[25,26,36]	Some patients with adenopathy.[29]	Enlarged liver, with elevated liver enzymes; enlarged lymph nodes.[26,27]	Some w/enlarged liver &/or spleen, enlarged lymph nodes.[42]	Cervical adenopathy during flares.[40,41]	Many w/generalized lymphadenopathy. Some w/mesenteric adenitis.[45,46]	Lymphadenopathy is common. Many w/enlarged liver &/or spleen.[44]	Lymphoma-cytosis-spleen/lymph nodes. Enlarged liver &/ or spleen.[48]	Lymphoma. Hemophago-cytosis-spleen/lymph nodes. Enlarged liver &/ or spleen.[48]	Not noted. Some need IVIG for low immuno-globulins & frequent infections. Few w/CVID.[65]	Not noted.[67,68]	Lymphadenopathy. Rosai-Dorfman sinus histiocytosis w/massive lymphadenopathy.[68,70,71]	
JOINTS/BONES MUSCLES & CARTILAGE	Arthralgias, stiffness & swelling with flares.[1]	Arthralgias, recurrent arthritis, stiffness & swelling with flares.[1]	Joint pain, knee valgus or varus. Some w/frontal bossing, saddleback nose, contractures, clubbing. <50% of patients knees have bony overgrowth. Short stature, growth delays, failure to thrive, arthritis, & osteopenia noted.[1,39]	80% have muscle, bone &/or joint pain; arthri-tis. Bone pain is most common in the iliac and tibia. <40% have bone lesions. Some w/ osteoconden-sation & sclerotic bone lesions. Some w/ row involvement in the legs.[13]	Mono/Polyarthritis, oligoarthritis & clubbing are common. Ankle arthralgias are common. Knee arthralgias are rare.[1]	Intermittent or chronic arthritis in large joints w/muscle pain & swell-ing.[1]	Arthralgias common, symmetric polyarthritis frequently noted.[1]	Congenital defects are often noted: micro-cephaly, dolichocephaly, wide irregular fontanels, low set and posteriorly rotated ears, downslant-ed palpebral fissures. Hypotonia, seizures, & failure to thrive are common.[11]	Joint swelling, severe bone pain. Bone biopsy shows no infection. Common: Balloon-like damage & destruction of the ante-rior rib ends, periosteal elevation along multiple long bones, multifocal osteolytic lesions. Other bones affected.[16]	Periarticular tender soft tissue swelling. Bone biopsy shows no infec-tion. Early-onset Chronic Recurrent Multifocal Osteomyelitis (CRMO), periarticular tender soft tissue swelling, short stature, delayed bone age, contractures.[18]	Joint swelling, limp, severe bone pain over af-fected bones (mostly long bones). 2-18 bone lesions are commonly found. Earlier age of onset & many bone lesions–more severe disease. Bone biopsy/cultures show no infection.[19,22]	Muscle weakness during fevers & flares. Risk for inflammatory arthritis.[80,81]	Intermittent joint pain, psoriatic arthritis. 30% of affected patients in one European family w/ PSORS2 also had psoriatic arthritis.[24]	Episodic inflamma-tory arthritis, often to one joint at a time that doesn't resolve on it's own. Intermittent sterile pauciarticular, peripher-al erosive arthritis. Joint damage & destruction can often develop from the arthritis.[26,30,31,32,55]	Symmetrical chronic polyarthritis or oligoar-thritis of the wrists, knees, ankles w/ a boggy appearance is usually caused by an exuberant tenosynovitis.[24,25,26]	Myalgia, arthralgia, fa-tigue & malaise w/flares. Permanent bone or joint damage not noted.[28]	Joint Contractures, muscle atrophy, pan-niculitis induced lipodystrophy, myositis, fatigue and malaise. Inflammed nose & ear cartilage (chondritis). Growth delays–low height & weight.[26,27]	45% have arthralgias &/or arthritis–often the knees &/or ankles, but other joints can be affected. May be the first sign of Behçets. X ray is normal but synovium of-ten has high neutrophils or mononuclear cells & a vasculitis process.[42]	Arthralgias, fatigue and malaise. No permanent joint or bone issues noted, and patients are symptom-free between PFAPA flares.[40,41]	Arthralgias may come before the arthritis. 88% have polyarticular or oligoarticular arthritis, most often in the wrists, knees, &/or ankles. Some w/cervical spine, hip, temporomandibular joint arthritis or synovial cysts.[45,46]	Mylgias, arthralgias &/ or arthritis are common. Wrist changes after 6 months. 41% develop aftercarpal and carpo-metacarpal joint space narrowing a few yrs. Rare w/ subluxation–25% then develop pericapitate ankylosis.[44]	Hemophagocytosis in the bone marrow. Delayed closure of the bones of the skull in infants, bulg-ing fontanel often noted. Neck stiffness, abnormal muscle tone, impaired muscle coordination, paralysis.[48,49]	Not noted.[64,65] Some have concurrent autoimmune diseases that may involve the joints, such as inflamma-tory arthritis or undif-ferenciated connective tissue diseases.[65]	Not noted.[67,68]	Short stature. Arthralgias. Dysmorphic facial features: Triangular face, rotated ears, macrocrania, exophthalmia. Pectus exca-vatum, wide-set nipples, widened ribs, long bone cortical thickening, short, square hands, sacrococcygal dimple, contractures.[69,70]	Not noted.[72,74]
VASCULITIS	Not noted.[1]	Not noted.[1]	Vasculitis rarely develops.[1]	Vasculitis noted in 20% of patients.[13]	HSP, lymphocytic vasculitis.[1]	Common vasculitis common, HSP is rare.[1]	<5–10%–uncommon.[9]	Not noted–unknown.[9,11]	A few w/localized or cerebral vasculitis.[16]	Not noted.[18,53]	Not noted.[19,21,22,24]	Not noted.[24,81,82]	Not seen.[23, 24]	Not noted.[29]	Some w/vasculitis, leuko-cytoclastic vasculitis.[24]	Not noted.[28]	Not noted.[29]	Not noted.[26,27]	Extensive vasculitis. 30% w/venous thrombosis.[42]	Not noted.[42,43]	Not noted.[40,41]	Not noted.[45,46]	Not noted.[47,48,49]	Not noted.[64,65]	Not noted.[66,67,68]	Not noted.[67,68]	Not noted. Some w/vari-cose veins on legs.[66]	Diffuse vasculopathy in the skin, liver & brain.[72,74]
AMYLOIDOSIS	Elevated serum amy-loid (SAA). Secondary amyloidosis in some patients.[1,9]	Elevated SAA. >25 % w/secondary amyloidosis.[1,9]	Elevated SAA. Second-ary amyloidosis in <2% pts.[1,9]	A few patients have developed secondary amyloidosis.[13]	Common >50% in untreated patients, it depends on genotype.[9]	10-20% occurrence–higher risk w/cysteine mutation.[9]														Amyloidosis occurs in 7.4% of pts. in the USA, and 16% in Turkey.[46]						
ABNORMAL LABS	High: ESR, CRP, SAA. Leukocytosis with flares.[1]	High: ESR, CRP, SAA. Leukocytosis,with flares.[1]	Chronically high: ESR, CRP, SAA, anemia, granulocyte leukocytosis.[1,8]	Monoclonal IgM &/or IgG gammopathy. High: ESR, CRP. Leukocytosis. Complement normal to elevated. 50% w/inflam-matory anemia.[13]	High: ESR, CRP, SAA w/flares. Fibrinogen, Leukocyto-sis present with flares.[1]	High: ESR, CRP, SAA. Elevated PMNs, polyclonal gammopathy, leukocytosis.[1]	High: ESR, CRP, SAA w/flares. High IgD w/IgA in 80% pts. Mevalonate aciduria noted