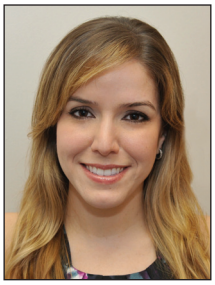
EPIDERMOLYSIS BULLOSA

Rachelle E. Seijo-Montes, MD, and Elena M. Montalván-Miró, MD

Type & Level of Cleavage	Major Subtype	Subtype	Inheritance	Defective Protein	Clinical Manifestations	Key Findings
EPIDERMOLYSIS BULLOSA SIMPLEX (EBS) *Intraepidermal*	Suprabasal	Lethal acantholytic EBS	AR	Desmoplakin	Generalized erosions at birth; GI, GU, RT involvement; lethal in neonatal period	Neonatal teeth Complete nail shedding Universal alopecia
		Plakophilin deficiency (ectodermal dysplasia-skin fragility syndrome)	AR	Plakophilin-1	Generalized erosions at birth; focal PPK; blepharitis; astigmatism	Hypotrichosis Anhidrosis Perioral & tongue fissures
		EBS superficialis	Unknown	Unknown	Superficial erosions as early as birth; milia; scarring; dystrophic or absent nails	Sparing of palms & soles
	Basal	EBS, localized (Weber-Cockayne)*	AD	K5 & 14	Palmoplantar bullae, erosions &/or painful calluses as early as infancy (may present during early adulthood)	Mildest & most common form of EB Worse with warm temperatures Hyperhidrosis
		EBS, other generalized (Koebner)*	AD	K5 & 14	Widespread bullae since birth; PPK; +/- mucosal erosions; spares nails & teeth	Worse with warm temperatures
		EB, Dowling-Meara	AD	K5 & 14	Herpetiform blisters since birth; extensive mucosal erosions; hoarseness; nail shedding/dystrophy; milia; no scarring; diffuse, painful PPK	Most severe form of EBS EM: clumping of keratin filaments +/- Natal teeth
		EBS with muscular dystrophy	AR	Plectin	Widespread blisters as early as birth; muscular dystrophy;+/- focal PPK; +/-milia; +/-scaring alopecia; nail shedding/dystrophy; high mortality	+/- Myasthenia gravis +/- Cardiac involvement Rarely presents as floppy baby
		EBS with pyloric atresia	AR	Plectin, α6β4 integrin	Widespread blisters at birth; scarring; pyloric atresia	Malformed pinnae Joint contractures Cryptorchidism
		EBS, Ogna	AD	Plectin	Acral blisters at birth	Onychogryphosis Tendency to bruise Worse with warm temperatures
		EBS with mottled pigmentation	AD	K5	Widespread blisters at birth; mottled dyspigmentation of trunk & proximal extremities	Acral verrucous papules
		EBS, migratory circinate	AD	K5	Widespread blisters since birth	Migratory circinate erythema with PIH
		EBS, autosomal recessive	AR	K14, BPAG1e	Widespread or anogenital blisters since birth; scarring; absent or dystrophic nails; focal PPK	Ichthyosis
JUNCTIONAL EPIDERMOLYSIS BULLOSA (JEB) *Intralamina Lucida*	Herlitz		AR	Laminin 332	Generalized blisters at birth; milia; scarring; absent or dystrophic nails; anemia; growth retardation; severe extracutaneous involvement (GI, GU, RT & ocular)	Perioral granulation tissue Dental pitting/caries Delayed puberty
	Other	JEB, non-Herlitz generalized	AR>>AD	Laminin 332, Type XVII collagen	Generalized blisters at birth that improve with age; milia; scarring; absent or dystrophic nails; focal PPK; mild SI	Large melanocytic nevi Dental pitting/caries Cigarette paper-like atrophy
		JEB, non-Herlitz localized	AR	Type XVII collagen	Localized blisters at birth; milia; absent or dystrophic nails; no SI	Dental pitting/caries
		JEB with pyloric atresia	AR	α6β4 integrin	Generalized blisters at birth; absent or dystrophic nails; pyloric atresia	Aplasia cutis Rudimentary ears Dental pitting GU malformations
		JEB, inversa	AR	Laminin 332	Intertriginous blisters; milia; scarring; dystrophic or absent nails; +/- GI involvement	Dental pitting/caries
		JEB, late onset	AR	Laminin 332	Blisters since young adulthood; absent or dystrophic nails	Absent dermatoglyphs Hyperhidrosis Dental pitting
		Laryngo-onycho-cutaneous syndrome (Shabbir syndrome)*	AR	Laminin 332 (α3 subunit)	Blisters & erosions since birth on face & neck; scarring; absent or dystrophic nails; granulation tissue	Prominent laryngeal & conjunctival involvement



Rachelle E. Seijo-Montes, MD, is a second-year resident in the department of dermatology at the University of Puerto Rico School of Medicine.

Elena M. Montalván-Miró, MD, is a second year resident in the department of dermatology at the University of Puerto Rico School of Medicine.

EPIDERMOLYSIS BULLOSA (continued)

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Type & Level of Cleavage	Major Subtype	Subtype	Inheritance	Defective Protein	Clinical Manifestations	Key Findings
Dystrophic Epidermolysis Bullosa (DEB) *Sublamina densa*	Dominant	DDEB, Generalized (Cockayne-Touraine)*	AD	Type VII collagen	Generalized blisters at birth; milia; scarring; absent or dystrophic nails	+/- albopapuloid lesions
		DDEB, acral			Acral blisters & erosions since birth; milia; scarring; nail dystrophy	Symptoms may cease in childhood
		DDEB, pretibial			Pruritic lichenoid papules; +/-milia; scarring; nail dystrophy; may involve dorsum of hands & feet	Pretibial involvement Later onset Lichen planus-like scarring
		DDEB, prurigi-nosa			Pruritic lichenoid papules; +/-milia; scarring; nail dystrophy; albopapuloid lesions	Severe pruritus Later onset Pretibial or widespread involvement
		DDEB, bullous dermolysis of the newborn			Generalized blisters at birth; +/- milia; scarring; dystrophic nails	Resolves after infancy Excessive caries
	Recessive	RDEB, severe generalized (Hallopeau-Siemens)*	AR		Generalized blisters at birth; milia; scarring; absent or dystrophic nails; anemia; growth retardation; excessive caries; GI, renal & cardiac involvement; osteoporosis	Pseudosyndactyly SCC +/- Melanoma Delayed puberty
		RDEB, general-ized other			Generalized blisters at birth; milia; scarring; absent or dystrophic nails	+/- pseudosyndactyly
		RDEB, inversa			Intertriginous & lumbosacral blisters at birth; milia; scarring; absent or dystrophic nails; GU involvement	External auditory canal stenosis
		RDEB, centrip-etalis			Widespread blisters at birth; acral involvement in adulthood; milia; scarring; absent or dystrophic nails	Centripetal spread
Kindler Syndrome *Mixed (intraepi-dermal, junctional or sublamina densa)*			AR	Kindlin-1	Generalized blistering at birth; scarring; PPK; +/- MR & bone abnormalities	Poikiloderma Photosensitivity SCC Bladder CA

+/- may have; * formerly called; GI= gastrointestinal; GU= genitourinary; RT= respiratory tract; PIH= post inflammatory hyperpigmentation; PPK=palmoplantar keratoderma; EM= electron microscopy; MR = mental retardation; SI=systemic involvement

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