

Stanford Children's EB Guide

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updated 07/29/25

General Information

There are four different forms of EB, defined by the level within the skin where blisters form (see diagram below). They each have different modes of inheritance and unique gene mutations. Within these four major subtypes are a multitude of variants. Some are localized and some are generalized. Some are mild and some are severe and with a fair amount of phenotypic variance and penetrance. The latest reclassification took place in 2020 and can be found in the reference section¹ but be aware that patients may occasionally refer to their type by the older eponymous form.

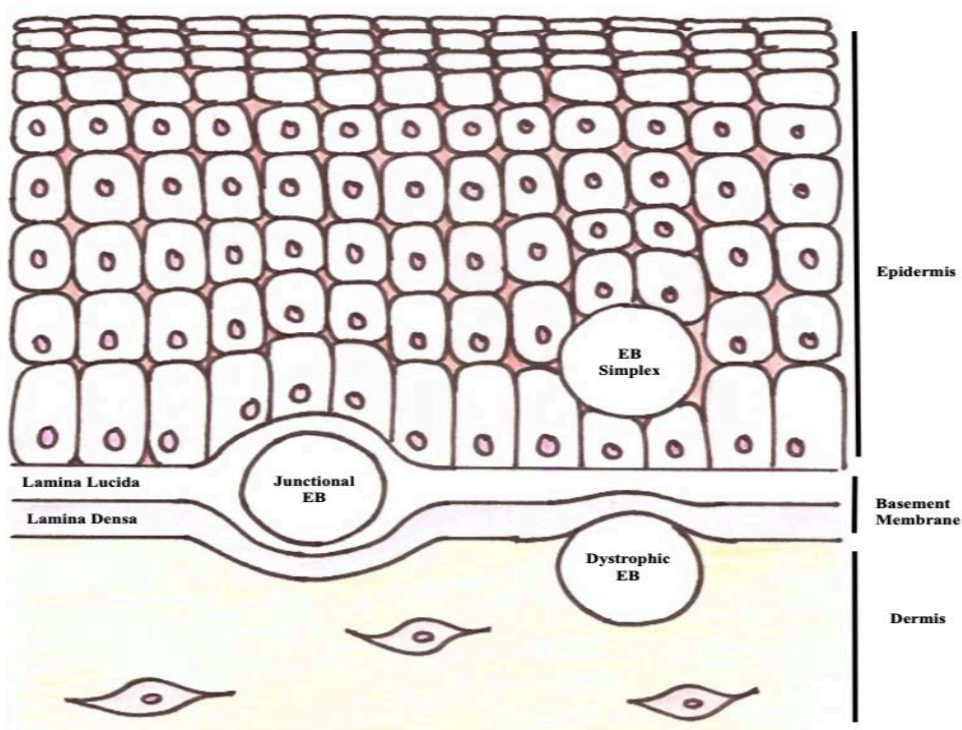


Figure 1. Layers of ultrastructural fragility in the skin of EB patients

Drawing courtesy of Noah A.Kim

Type	Most Severe Form(s)	Notable organ system associations with other forms
EB Simplex “EBS”	Severe EB Simplex Aka Dowling-Meara; autosomal dominant keratin mutation EBS with pyloric atresia; autosomal recessive plectin mutation	EBS (intermediate) with muscular dystrophy; autosomal recessive plectin mutation EBS (intermediate) with cardiomyopathy autosomal dominant Kelch-like protein mutation

Junctional EB “JEB”	Severe Junctional EB Aka JEB Herlitz (JEB-H); autosomal recessive laminin 232 mutation. Often fatal with first 2 years of life due to airway compromise or sepsis JEB with pyloric atresia; autosomal recessive integrin $\alpha6\beta4$ mutation	Laryngo-onycho-cutaneous “LOC”: severe laryngeal involvement; autosomal recessive Laminin $\alpha3A$ mutation Nephropathy and protein-losing enteropathy (PLE) may be present
Dystrophic EB “DEB”	Severe Dystrophic EB Aka Hallopeau-Siemens or RDEB; autosomal recessive Collagen VII mutation	

The fourth type, known as “**Kindler EB**” is a rare recessive mutation causing skin cleavage at multiple levels. The genetic basis is mutation in FERMT1 (aka KIND1), which encodes a protein known as kindlin-1, an intracellular protein important in focal adhesions.

Review of Systems/Medical History

(RDEB unless otherwise specified). Please cover each of these points with EB patients.

Growth and Development	HEENT	Respiratory
-Growth restriction/FTT common.	<ul style="list-style-type: none"> -Corneal abrasions and inability to close eyelids in sleep is common. Ask about eye care regimen and ocular lubricant preferences. -Poor dentition is common (multifactorial but due to enamel hypoplasia in JEB-H) -Ankyloglossia -H/o difficult airway -Restricted mouth opening nearly universal. Measure as inter-incisor distance. RDEB worse than JEB -Scarring occurs from lips to larynx. Muffled voice/stertor could indicate supraglottic scarring -JEB-H and JEB LOC have exuberant orofacial granulation -Laryngeal stenosis: Greatest risk: JEB-H(40% by age 6)>JEB-NH>RDEB (5% by mid 20’s)² 	-Snoring is rare, but some patients have enlarged tonsils. Looking at old records to see what devices or positioning worked is helpful (eg lubricated NPA)
Cardiovascular	GI/Hepatic	GU/Renal

<p>-Cardiomyopathy can occur in several types of EB^{3,4}. RDEB: high risk. Symptomatic DCM cumm risk 4.5% on or after age 20. Mean age at dx: 12. But rates may be higher on asymptomatic screening. JEB lower risk. EBS-KLH mutation known risk EBS-MD known risk <i>Consider echo screening for high risk procedures*</i></p>	<p>-Esophageal stricture extremely common in RDEB. Sometimes multiple but nearly always high, often behind nearly behind trachea. Is the patient able to swallow their saliva? -GERD -Malabsorption common -G-tube placement common to maximize nutrition. -Constipation common -Anal stenosis -rare cases of EB pyloric atresia. Can be Simplex or junctional</p>	<p>-Renal failure can occur with RDEB from non-unified causes (a variety of intrinsic renal etiologies as well as downstream obstruction) -Renal failure also occurs in JEB, more commonly obstructive etiology -one form of EBS has nephropathy -GU/renal involvement in EB-pyloric atresia</p>
<p>Heme/Onc</p>	<p>Neuro</p>	<p>Endo/Metabolic</p>
<p>-Chronic anemia (multifactorial; chronic inflammation and iron loss) nearly universal in RDEB and JEB-H. Many receive iron infusions, sometimes oral iron or blood transfusions</p>	<p>-Not typically affected</p>	<p>-Ask regarding any hormonal supplementation for growth -Delayed puberty</p>
<p>Musculoskeletal</p>	<p>Skin and Connective Tissue</p>	<p>Other</p>
<p>-Scoliosis common -Osteopenia common especially if non-weight bearing -Pseudosyndactyly common in RDEB. -Contractures common due to scarring. Note contractures and position of comfort for recovery room positioning</p>	<p>-Inquire which wound care products are used and which may be too damaging for skin -Impaired thermoregulation: Paradoxically, patients can overheat. Baseline hypermetabolism, dysfunctional innervation of sweat glands, potential loss of sweat glands through scarring, and wrapped extremities may contribute. Please ask about this. -Where have IVs usually been successful?</p>	<p>-Thorough pain med history. List all pain medications, anxiolytics and frequency. Are pain meds taken on a daily basis or only with dressing changes. Include cannabinoids. -What meds work best for itch? Can Benadryl be tolerated if Atarax isn't available easily?</p>

Please utilize the IMAGE FUNCTION IN EMR to photograph both the MOUTH OPENING on physical exam as well as the AIRWAY (if possible) and insert into the airway note.

Preoperative optimization

Screening for cardiomyopathy: The highest risk group (other than subtypes with known risk of cardiomyopathy) is RDEB. No specific guidelines have been published for frequency of screening, or the optimal age at which screening should be initiated. Clearly, echocardiogram should be performed on patients with symptoms of orthopnea or dyspnea on exertion and it would be prudent to obtain screening on patients without recent echocardiogram having major surgery with expected hemodynamic changes or anticipated significant blood loss.

Esophageal stricture: Most patients are aware of when they need to come in for dilation, and it would not be unreasonable to link a dilation procedure to other operative procedure. If a patient is planned for a different surgery, is having difficulty swallowing due to stricture but does NOT have a gastrostomy tube, it would be prudent to have the stricture addressed at the time of surgery to ensure adequate nutritional intake to support healing.

Correction of anemia. Consensus guidelines exist addressing diagnosis and management of anemia in patients with RDEB and are generally well managed by the patients' primary physicians or hematologist.⁸ In patients with severe and generalized forms of EB, the minimum desired Hb level is 10g/dL. In general, oral iron supplementation is often utilized for mild anemia (hemoglobin around 10 g/dL) if the patient is able to tolerate and absorb oral preparations. Iron infusion is utilized for moderate/severe anemia (Hb levels of 8-10 g/dL) and symptomatic. If patients fail iron infusion, transfusion may be indicated for adults with Hb <8g/dL and in children with Hb<6g/dL. Increases in hemoglobin can take weeks to respond to iron therapy, so this should be considered if optimizing prior to surgery with anticipated blood loss. Anesthesiologists are often asked to administer iron infusions during minor surgery or to keep the IV in postoperatively so that the patient can receive iron infusion, as many younger patients are traumatized from IV placement.

GERD: Patients with symptomatic GERD should continue taking their anti-reflux medications. Those with severe GERD will likely not be good candidates for anesthesia with the native airway.

Chronic Pain: for procedures with anticipated significant postoperative pain, consider preoperative pain consultation. THC and CBD cannabinoid preparations are gaining more popular use and should be considered in the postoperative pain plan as well as preoperative narcotic pain medication usage

Corneal Abrasions: Patients with a history of severe corneal abrasions, or corneal abrasions under anesthesia may benefit from ophthalmology consult prior to surgery for discussion of bandage contact lenses or optimization of eye regimen.



12 lead ECG is easily accomplished using stickers atop 3M® Defib-pad slices. The technician used a pillowcase-covered light weight to anchor the leads in the above photo. But some of the lighter-tack EB dressing can similarly adhere the leads. An echocardiogram can similarly safely be performed using a generous amount of gel on the patient chest once the bandages have been removed. The patient or caregiver should be the person removing the gel using a dabbing and not a rubbing motion.

Common Surgeries

Esophageal Dilation:

- Most common procedure performed for patients with RDEB. This may be endoscope guided or de novo IR guided placement of a small balloon dilating catheter with fluoroscopic imaging during the dilation.
- Most strictures are high (caused by trauma where the food bolus is largest) and often in close proximity to the trachea.
- Depending on the proceduralist, contrast may be used to delineate location of the stricture(s) and efficacy of dilation.
- Bullae may form, existing bullae may rupture, bleeding can occur, or mucosal casts may be liberated.
- Because of potential contrast aspiration, airway obstruction, bleeding or bulla formation, we typically intubate for this procedure.
- Occasionally if the esophagus is inaccessible from the mouth, dilation can be achieved using a retrograde approach from the gastrostomy tube. The same risks of contrast aspiration, bleeding, or bulla formation can still occur.
- Sore throat is very common from the procedure and occurs even if intubation is not performed.
- Some families have found that a swallowed slurry of budesonide is helpful for sore throat
- Frequency of dilation procedures varies with some patients requiring q6 months or more, others can go years between treatments.

Gastrostomy Tube placement:

- Common procedure for children with severe forms of EB
- PEG tube **NOT RECOMMENDED** due to oral trauma
- Can be placed via laparoscopic technique, open surgical technique, or IR guided percutaneous.
- Intubate as indicated by procedural needs.

Hand Surgery:

- The mitten deformity (pseudosyndactyly) can significantly reduce hand function and quality of life in patients with RDEB, and many will present for release of pseudosyndactyly and associated dressing changes.
- An upper extremity block and natural airway works well for this procedure if no contraindications exist for either.
- Dressing changes can be managed with intravenous sedation and a natural airway provided no contraindication exists.

Dental Restoration:

- Poor dentition is common among most severe forms due to pain and trauma with brushing as well as loss of normal intraoral architecture causing food particles to be retained in the mouth. Enamel hypoplasia is present only in JEB-H and the rare Kindler EB⁵

- Nasal intubation (typically fiberoptic) preferred for ease of dental exposure which will be difficult at baseline due to limited mouth opening.

Clinical practice guidelines exist for the management of RDEB patient for a variety of aspects surrounding their care and management^{6,8,9,10}

IN THE OR

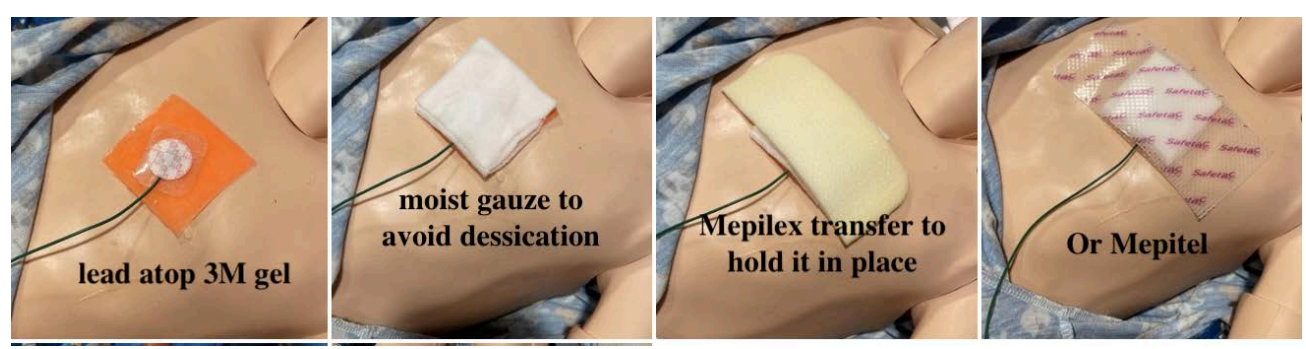
General setup for OR monitoring:

All standard ASA monitors can be accomplished (with modification) for patients with EB. Please do not compromise their safety with incomplete monitoring.

ECG:

Beautiful ECG tracings can be achieved by placing ECG stickers atop orange 3M[®] defibrillator gel pads (the nonadhesive ones). Since we know they transmit electricity, this works well. Because they don't stick to the skin, you will need to secure this complex to the skin by 1) wrapping limb leads around the limb gently with Coban[®] 2) tucking the torso lead under a torso dressing, or 3) "sticking" them on to the skin using EB dressing materials. 3M[®] gel pads dessicate over time and become rigid, so placing a moist piece of gauze on top can prevent dessication:

Sequence for chest lead application:

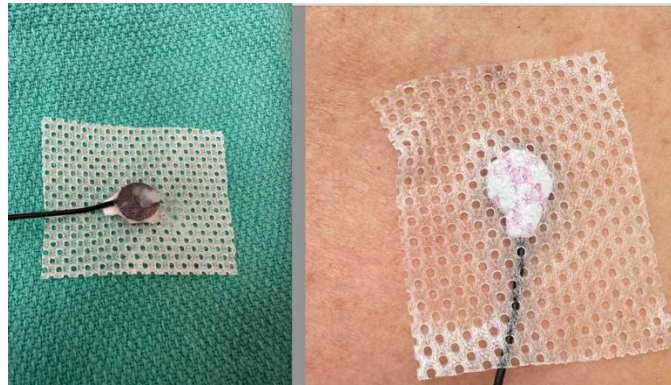


Sequence for limb lead application:





Another alternative if 3M® defib pads are not available is to remove the stickum and backing from pediatric ECG leads, leaving only the smooth metal disc. Apply a very small amount of lubricant and affix to skin with Mepitel® or other EB dressing and/or Coban® wrap



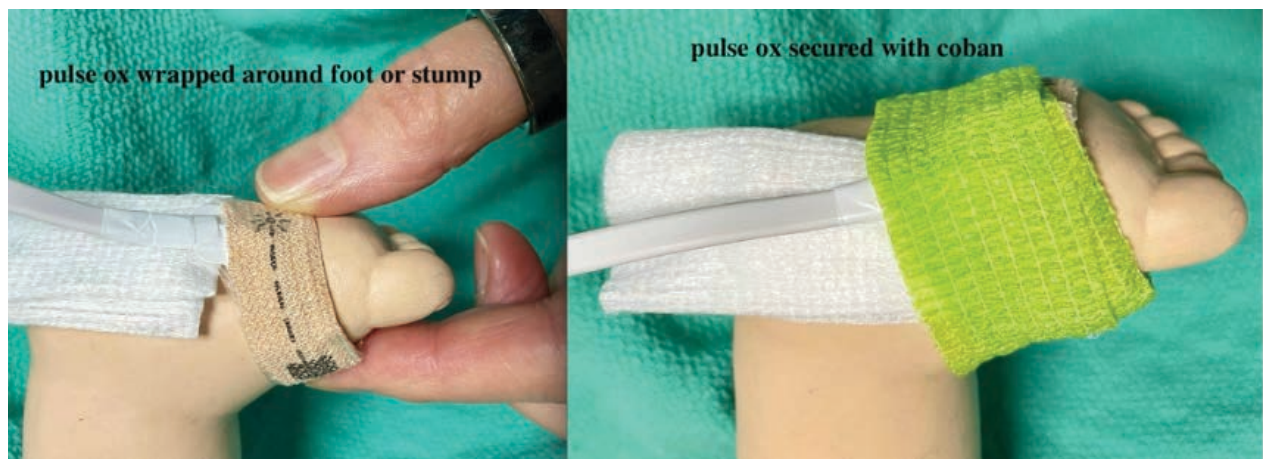
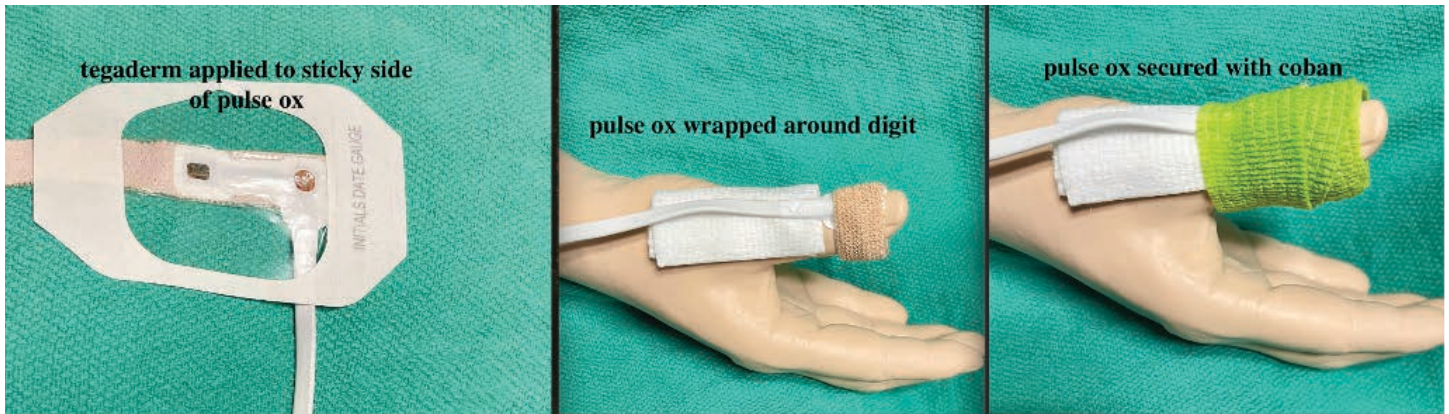
Blood Pressure:

Noninvasive: Noninvasive cuffs can either be placed directly over wound dressings, or cast cotton (Webril) may be gently wrapped around a non-dressed limb before placing the blood pressure cuff, taking care to pad around the tube stem of the blood pressure cord.



Invasive: arterial catheters are sometimes necessary depending on the surgery and they are secured with suture and a dressing similar to intravenous catheters.

Pulse Oximetry: This can be a difficult monitor when a patient doesn't have free digits. We tend to favor using wrap-around pediatric/neonatal pulse oximeters with the sticky side covered with clear Tegaderm® or IV3000 film (sticky side to sticky side), wrapped around a digit or stump and secured in place with Coban® taking care to pad the cord stem. Surprisingly, this monitor works conditionally even wrapped around a pseudosyndactyly stump or even placed directly on a forehead. Other institutions use clip-on style pulse oximeters though they could slip off and cause a shear injury.

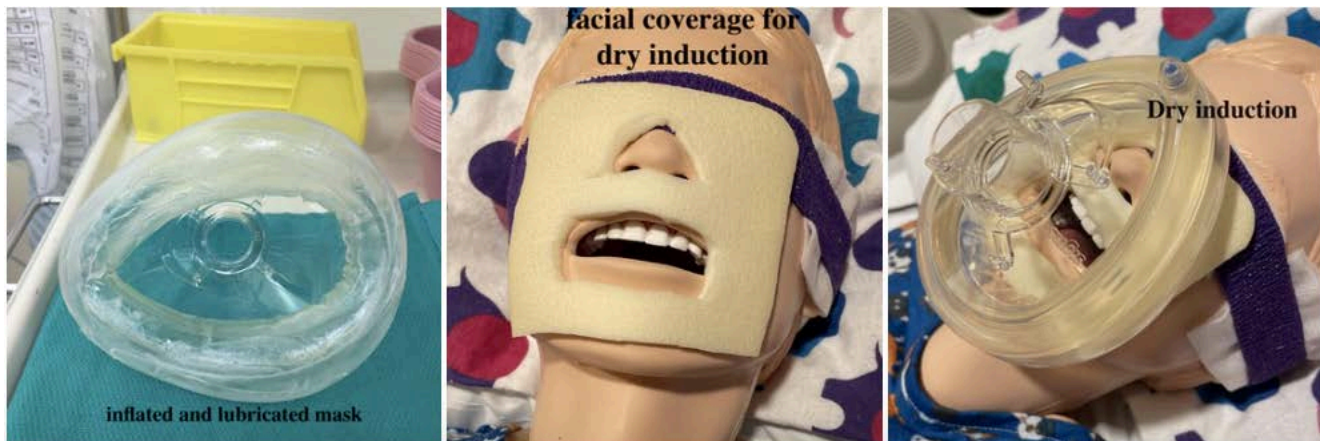


Temperature: A lubricated temperature probe can be placed in the axilla or groin crease and secured with EB dressings though these locations can be problematic owing to poor skin to skin contact from contractures or thin body habitus. Intermittent monitoring with forehead temperature stickers (with the sticky side covered by a Tegaderm® film is another alternative.



Induction: Patients can be induced via mask or IV.

Mask Induction: The mask should be inflated so that the hard parts don't poke the face. You can choose either a lubricated or a dry induction. A lubricated induction involves a well-lubricated mask with Albolene® or Aquaphor® applied directly to the face. The greatest danger to EB skin is SHEAR forces, not pressure, so the lubricant prevents shearing. In general, lubricant is good for the skin but makes it very difficult to stabilize oral tubes. A DRY MASK INDUCTION involves protecting the face with Mepilex Transfer® (see below) and placing the mask atop that. Not all patients will tolerate placement of Mepilex Transfer® although you can hover the mask over the face until they are asleep, then place the Mepilex Transfer®. The face then remains dry for tube securement.



IV: IVs are not always as difficult as one may think. Patients are typically thin and often veins can be visualized. Other times and ultrasound is necessary. DO NOT place a tourniquet directly on the skin. One may utilize a lubricated hand tourniquet or place a tourniquet over a piece of cast cotton. No wiping with an alcohol pad. Dabbing is permitted, or if the skin is too sensitive for alcohol, a small amount of baby shampoo dabbed on and dabbed off with water or saline. Mepilex Border Lite® or Allevyn Gentle Border Lite® makes a great base for the IV with a small self-contained bit of Tegaderm® only touching the Mepilex®. Really, any silicone-base under the IV is acceptable. Wrap gently with Coban®. Connect a clave tip anti-reflux valve to the T-piece and disconnect from the IV bag during transport to avoid any inadvertent pulling out of the IV. To remove the IV, a generous dab of Albolene® or Aquaphor® massaged gently to the Mepilex® or Allevyn® base will cause it to lift off the skin. IV Clear® (Covalon) is a new clear silicone adhesive ideal for IV securement which acts similarly to Tegaderm® but is safe for delicate skin.

TOPICALIZATION:

- o **ELA-MAX®:** is allowable
- o Injectable lidocaine as long as the wheal is subcutaneous and NOT intradermal which is where EB blisters occur. Generally speaking, this is probably not a great idea.
- o J-TIP: DO NOT USE THIS – I haven't tried it, but I expect it will cause tissue trauma
- o **Cold spray** works well



PICC line Securement Device: SecurAcath® (InterRad Medical, Plymouth MN, U.S.)



The SecurAcath® device works well to secure PICC lines in EB patients. Smooth metal prongs lodge into the subcutaneous tissue and the PICC line is secured into the orange hub. The orange hub needs padding, but the Allevyn Gentle Border Lite® works well for this purpose.

Airway: Many patients with RDEB will have a difficult airway, but all tissues from lips to cords are prone to blistering. Which is better, intubation via nose or mouth? This is an area of debate. Of note, hair bearing areas and columnar epithelium of the nasal passages is somewhat more stable, so one argument is that a FOI from the nose will avoid traumatizing the mouth. Any bleeding, however, could cause a dangerous situation, particularly in a patient with limited mouth opening. In our institution which has a history of oral intubation and oral fiberoptic intubation, we have not seen nor have we had patients report oral trauma from oral intubation. So until we have more definitive data, I'd advocate intubating using whichever technique you're most facile with. THRIVE or some type of high flow nasal oxygen can increase apneic time during fiberoptic intubation⁷. Additionally, some patients have narrowed nasal alae and may have difficulty fitting a rae tube of sufficient length. MLT tubes are great but lack the bend of a nasal rae.

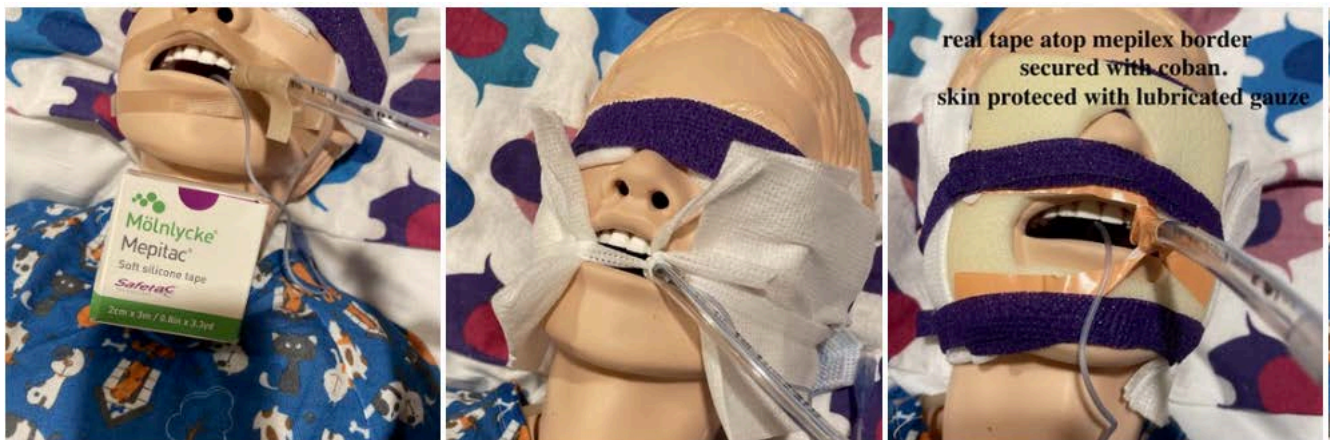
Securement of ETT:

- Nasal rae tubes are great because they can avoid tape and be secured to a head wrap though one must be cognizant of alar trauma.



Tube secured with foam tube taped to head wrap

- Oral tubes: If lubricated induction was performed, then the tube must be secured using a surgical mask or umbilical tape and tied. The face must be protected from the surgical mask with lubricated gauze. If a dry induction technique was used, then Mepitac[®] can be used to secure the tube. Alternatively, the tube can be taped to the Mepilex border[®].



To remove the Mepitac[®] tube “tape”, generously apply Albolene[®] cleanser and gently massage around the “tape” until it spontaneously lifts from the skin.

Native Airway: If you don’t have to intubate, try not to. All standard contraindications to natural airway apply. The anesthesiologist should have ready access to the head, the patient should not re-breathe CO₂ etc. A lubricated nasal cannula (with the ETCO₂ sampling port cut short so that it doesn’t suck the skin) or lubricated NRB is fine.



Non-rebreather mask. Protection: lubrication and Mepilex Transfer®

Nasal cannula: protection: lubrication and Mepilex Transfer®

Eye Protection: Protection against corneal abrasion is important. Many patients cannot close their eyelids in repose. Apply lubricant (we prefer a water-soluble Hypromellose-based lubricant gel), cover with Mepitel®, apply moist gauze and secure in place with a narrow wrap. If not, it will all protective coverings will fall off.



Mepitel® “eye tape”

Moist gauze on Mepitel®

Coban® or Mepilex® to hold it all in place

Regional Anesthesia: Regional anesthesia can be a valuable tool in treating intraoperative and postoperative pain. The contraindications are the same as for patients without EB. The only additional consideration is that the consequences of insensibility are greater for EB patients. The consequences of injury when one is insensate could be greater to a patient with more fragile tissues. Additionally, if an EB patient had blocks to bilateral arms and needed to be lifted out of a wheelchair during transfers, they may have a greater chance of sustaining tissue damage.

Suctioning: Suctioning of patients with normally epithelialized oropharyngeal tissues can be traumatic and cause bleeding, so extra care must be taken when suctioning patients with EB. Either use low suction power or a lubricated suction catheter with a vent hole cut out to limit the possibility of unopposed suction.

Emergence: Most EB anesthesiologists prefer to extubate patients awake after esophageal dilation because of the bleeding, secretions and contrast that are all present around the upper esophagus and trachea during the procedure. For other procedures requiring intubation, type of extubation is at the discretion of the anesthesiologist.

General protection and padding

Shared Mental Model: the huddle is important for all OR personnel to understand that EB care is MORE than “no adhesives”. It involves listening to the patient, treating their skin and tissues with extra care, and making sure to ask questions before proceeding. It can be very helpful to have a wound care nurse in the room or available for consultation if questions arise about wound dressings or how to secure surgical devices or surgical dressings

Use of Lubricants and EB wound dressings: The EB tackle box/kit (see inventory list at end of document) contains the most commonly used dressings. The “old school” dressings consisted of Vaseline gauze, iodoform gauze, and kerlix wrap. The modern era dressings consist mainly of different forms of silicone-based very light tack dressings with good drainage, low wound stickage and some have silver impregnation. They are, however, expensive. Most are made by the Molnlycke® company. Photos below.

Lubricants come from the pharmacy and need to be ordered. You can order them the day before as an intraoperative order. Please include them in your intraoperative medications so that the pharmacy can bill for them. They include

For Skin: either Albolene® or Aquaphor® (the petroleum/mineral oil-type lubricant to prevent anything from causing shear forces on the skin)



For Eyes:

- Water-soluble eye lubricant gel: The active ingredient is *Hypromellose*. It is best to get a gel formulation for longest duration. Some brands include Systane[®], Genteal[®], Gonak[®]. **Check the ingredient list** as some of these brands make both petroleum as well as Hypromellose-based products.
- Petroleum-based: Like the one in our carts. Many patients dislike this and will rub at their eyes postoperatively. Please ask.

Positioning: Having the patient participate in self-positioning if possible is the best option. Otherwise, note contractures and position of comfort. Have lots of pillows available

Padding: Using a sheepskin or synthetic version of a sheepskin with a draw sheet on top is helpful for moving the patient when they are unable to move themselves.

FAQs

WHAT SHOULD I DO IF I GENERATE A NEW BLISTER?

BEFORE we go to the OR, I typically ask the family what they would like done if this happens. In general, EB patients puncture the roof of the blister with a sterile needle to let the blister fluid escape, then dress the wound. This prevents the blister from continuing to expand. **DO NOT SQUEEZE THE BLISTER – IT WILL ONLY CAUSE FURTHER EXPANSION.**

IS IT SAFE TO GIVE SUCCINYLCHOLINE?

I understand the concerns about giving either IM or IV succinylcholine to 1) children and 2) patients in laryngospasm, particularly in the instance of a mask induction prior to establishment of IV access. One may wonder if a wheelchair-bound EB patient may have an exaggerated hyperkalemic response to succinylcholine due to similarities to immobilized burn patients. The answer is that we don't yet know. Anecdotally, we have given it IM in a couple of laryngospasm situations and have not experienced ECG evidence of hyperkalemia. Other institutions routinely utilize inhalational induction.

WHAT ABOUT THE BOVIE PAD?

The surgeon has three options for cautery **WITHOUT** the use of an adhesive grounding pad:

- 1) Battery operated electric eye cautery device. This is a fine wire thermal cautery pen for very minor pinpoint bleeding. Typically used by ophthalmology



- 2) Bipolar cautery: With bipolar cautery, current passes through the tissue only between the two electrodes of the forceps-like instrument



- 3) Use of a non-adhesive whole-body, or partial body grounding pad. Eg: Megadyne®: This is a great device not just for EB patients but for any patient who may have limited space for adhesive grounding pads. **Per the manufacturer, you cannot have more than an inch of material between the person and the Megadyne® pad.** We use Bair Huggers®, but not sheepskins atop the Megadyne®.
- I notice a recall (12/8/23) and subsequent revision by the FDA (3/1/24) to only use the Megadyne® pads on children over age 12 and adults.



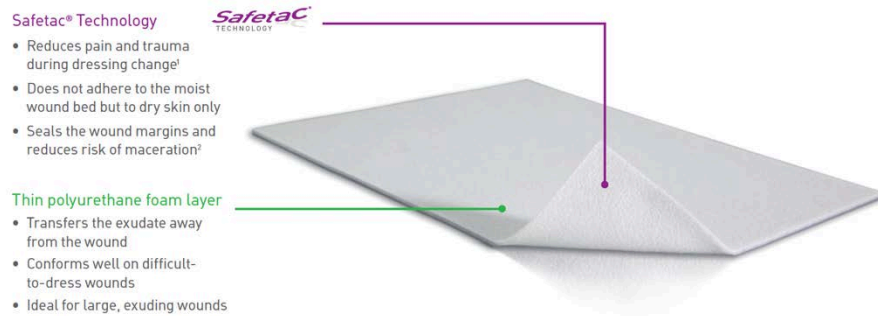
Molnycke® Silicone-based Dressings:

In order of LEAST sticky to MOST sticky

- MEPILEX TRANSFER®**: This is the mainstay of our patients' dressings. It's like a very thin, lightly adhesive foam. For the anesthesiologist
 - Great for protecting the face for a dry mask induction
 - You can use it to wrap around limbs to secure ECG leads
 - If the skin is really sensitive, it can be used as the base upon which an IV is secured

Mepilex® Transfer

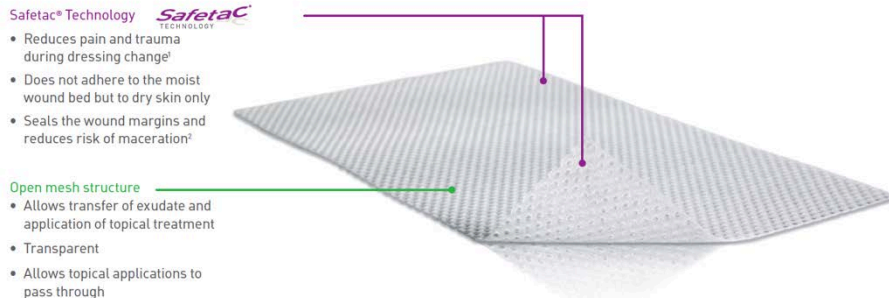
The thin and conformable exudate transfer foam dressing



- 2) **MEPITEL®**: This clear silicone sheet has small holes. I love to use it as “eye tape” because I can put very moist saline-soaked gauze on top and know that the moisture will penetrate to the eyes. It’s not sticky per se, but because it’s two-sided, it appears to stick to everything! It comes as a one-sided product as well known as Mepital One®.

Mepitel®

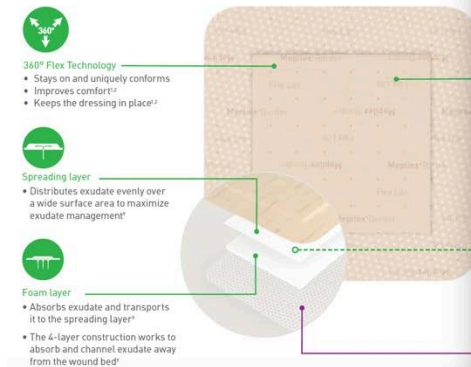
The transparent wound contact layer (double-sided)



- 3) **MEPILEX BORDER LITE® OR ALLEVYN GENTLE BORDER LITE®**: You’re familiar with these little padded bandaids. They’re great for:
- a. Padding the base of IV’s (see IV section). BUT IT’S FAIRLY STICKY, so the best way to remove it is to slather with lubricant and gently massage. With extreme patience, it will start to elevate. More lubricant on the leading edge will cause the entire bandage to lift.
 - b. Larger sized ones can be used to secure ECG leads, but take care because of the level of adhesive. Best if only used on the torso – if safe

Mepilex® Border Flex Lite

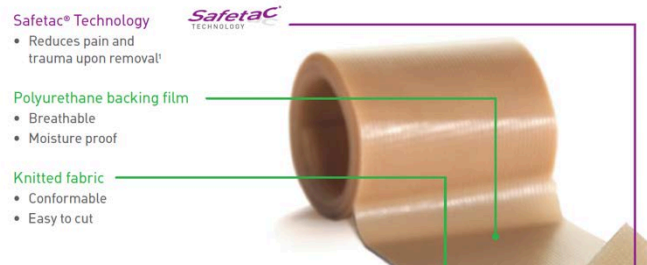
The self-adherent all-in-one thin bordered foam dressing



- 4) **MEPITAC®:** our beloved stuff for normal kid eyes, but DON'T use it on EB eyelids – it's too sticky. I will sometimes use this to secure an oral ETT if I used a dry induction technique. Cut it just like regular ETT tape and tab the ends. Remove **very slowly and patiently** with copious amounts of lubricant. Others have had success with adhesive remover spray.

Mepitac®

The self-adherent conformable fixation tape



5) IV Clear® by Covalon



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List of Supplies for EB toolkit

1) **Coban**[®] – 3 sizes

1” to secure the pulse-ox

2” for securing IVs

3” may be suitable for larger patients

2) **Webril** (the cotton roll used to pad casts): for protection under the BP cuff if no dressing is already on the extremity

3) **Kerlix Roll**: I don't know why some people use this but maybe they do.

3) **Vaseline gauze** – many people like this for mask lubrication. Make sure that the packs are small enough that they are single use. One may NOT save a partially-used package and use for another patient due to high MRSA rates

4) **3M orange defibrillator pads** – one pack is usually good enough for 1 patient: used to place between sticky ECG pads and patient. We use the little NICU 3 ECG leads as they are less weighty and less sticky. Coban may be used to hold the lead down

5) **Umbilical tape** and **tie-around surgical masks** (to secure ETT)

6) Molnlycke products

Mepitel[®]: Nearly transparent silicon sheet with pores. Can be used to protect eyes and many patients use this in their dressings which we tear apart to put on monitors.

Mepilex transfer[®]: Looks similar to Reston foam but has a mild silicone-adhesive on the backing. Most commonly used dressing by patients but also great for padding IV catheter so that it doesn't dig into skin. Can be cut and fashioned into a facemask protector so that lubricated facemask doesn't need to be used. Regular tape can then be used to tape the ETT to the Mepilex transfer.

Mepitac[®] **Silicon tape**: Found in every room for use on eyelids

ALLEVYN Gentle Border Lite[®] 5cm x 5cm or **Mepitac Border**[®] **3” X 3”**: Looks like a bandaid but provides a nice cushion to lay IV T-piece hubs on

7) Lubricants:

Albolene[®]: used to lubricate the fully inflated facemask in the event mask ventilation is required. We typically have to ask for this from pharmacy (likely for billing purposes) but I recommend the smaller single-use pots.

Lacrilube[®]: eye lubricant. Disliked by many patients because of prolonged blurry vision. We normally carry this in our anesthesia cart but it is handy to have it in the tackle box.

GenTeal Eye Gel[®]: (not eyedrops): a tube of methylcellulose-based eye lubricant which causes less blurriness but is thinner. I like to use with saline-moistened eye pads. I have to ask for this from pharmacy (again – likely a billing issue) but would love to have it normally placed in the tackle box.

11) Eye pads and **saline bullets**: see above

Yellow highlighted items are pharmacy items.