

PELVIC BINDER GUIDELINE
SAN FRANCISCO GENERAL HOSPITAL

Indications for Placement:

The pelvic binder is placed in the ED by the trauma team on patients who have *suspected or documented* pelvic injuries potentially associated with major hemorrhage. The decision for the initial placement of the pelvic binder may be made by the Trauma Attending, EM Attending, or surgical Chief/Senior resident. Patients with mechanically unstable (disruption of pelvic ring continuity) fractures are the most likely to benefit from pelvic binding.

The orthopedic surgery service, after consultation with the orthopedic attending surgeon and review of pelvic radiographs and/or pelvic CT imaging, will decide if the pelvic fracture pattern is mechanically unstable and requires a binder. The decision regarding the ongoing need for pelvic binding will be made as soon by the orthopedic service as possible following the completion of pelvic imaging studies, ideally within the first few hours following the initial resuscitation.

The following fracture patterns are considered UNSTABLE and the Pelvic Binder should be kept on until the definitive fixation or orthopedic surgery consult is obtained:

MECHANICALLY UNSTABLE PELVIC FRACTURES – PELVIC BINDING INDICATED		
Mechanism and Type (Young-Burgess)	Characteristics	Stability
AP compression, type II	Pubic diastasis >2.5 cm, anterior SI joint disruption (OPEN BOOK)	Rotationally unstable, vertically stable
Lateral compression, type II	Type I plus ipsilateral iliac wing fracture or posterior SI joint disruption	Rotationally unstable, vertically stable
Lateral compression, type III	Type I or type II on ipsilateral pelvis and external rotation injury on contralateral pelvis with pubic rami fractures or disruption of the sacrotuberous and/or sacrospinous ligaments	Rotationally unstable, vertically stable
AP compression, type III	Type II plus posterior SI joint disruption, Pubic diastasis >4cm	Rotationally unstable, vertically unstable
Vertical shear	Vertical pubic rami fractures, SI joint disruption +/- adjacent fractures	Rotationally unstable, vertically unstable

The following fracture patterns are considered STABLE and the Pelvic Binder is not required in most cases. Questionable cases of the need for pelvic binding should be evaluated by the orthopedic service.

MECHANICALLY STABLE PELVIC FRACTURES – PELVIC BINDING <u>NOT</u> INDICATED		
Mechanism and Type (Young-Burgess)	Characteristics	Stability
AP compression, type I	Pubic diastasis <2.5 cm	Stable
Lateral compression, type I	Ipsilateral sacral buckle fractures, ipsilateral horizontal pubic rami fractures (or disruption of symphysis with overlapping pubic bones)	Stable

In patients who clearly do not have pelvic fractures amenable to pelvic binding or those patients who are deemed to not be at risk for significant pelvic fracture hemorrhage, the binder may be removed under the direction of the Trauma Attending.

The communication between Trauma and Orthopedic surgery teams at the attending level is essential in all decisions involving the care of this complex trauma patient population.

Relative Contraindications for Pelvic Binder Placement:

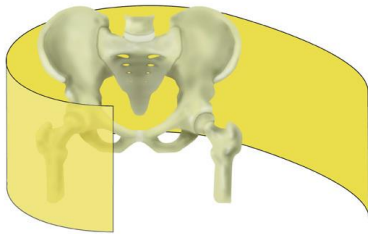
- Open pelvic fractures, perineal lacerations, intraabdominal injuries requiring surgery, morbid obesity, burns and severe associated pelvic soft tissue injuries may necessitate external fixation of the pelvis instead of pelvic binder. However, pelvic binder may still be placed until the definitive external fixator is applied.

Management:

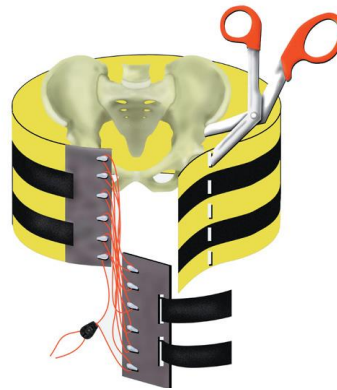
- The orthopedic surgery attending will ultimately decide if the pelvic fracture pattern is mechanically unstable and requires a binder following evaluation of pelvic x-rays and/or CT scans. This evaluation expedited following initial resuscitation. And placement of the pelvic binder.
- If the pelvic binder is kept in place for more than 24 hours, skin integrity should be checked every 12 hours until definitive fixation. This evaluation will be performed by both the trauma team and the orthopedic team at Fellow/Chief Resident level.

- If a patient had pelvic packing, ideally an external fixator should have been placed at the time of surgery which would eliminate the need for a binder.
- If a patient had embolization and an unstable injury has been diagnosed by the orthopedics team, then the binder should be left on until definitive fixation of the fracture.
- As a rule, all patients with pelvic binding should be hospitalized in the ICU. Patients not at risk for pelvic fracture hemorrhage should have their binder removed prior to transfer to the floor. Exceptions to this practice may be made only at the explicit order of the orthopedic attending surgeon, or the trauma attending surgeon.

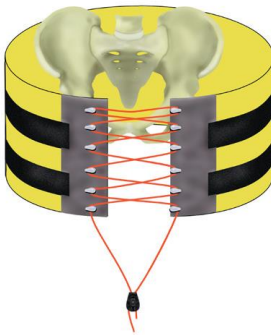
How to Place a Pelvic Binder



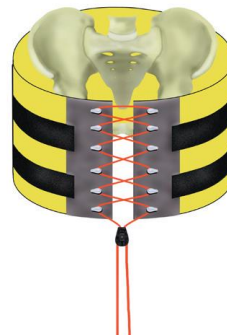
1. Slide binder under supine patient.
Center binder over greater trochanters.



2. Cut the free end of binder to leave
6" - 8" gap.



3. Attach Velcro straps and plate to free
end of binder.



4. Tighten shoelace mechanism,
close fastener.

Key Points:

- The pelvic binder should not be placed at the level of the trochanters in the following pathologies:
 - Associated acetabular fracture
 - Associated proximal femur fracture
- If an obese patient requires the pelvic binders, two belts may be affixed together using one power unit as an extender/linker and the other as the pulley.

* Children under 50 lbs (23 Kg) may be too small to obtain the 6 inch gap needed for closure.

- An alternative approach is to place two binders; one at the level of iliac crest and the second one at the level of trochanters and tighten them in an alternating pattern.