

Trauma-Related Physical Examination Findings

The content in this table is adapted from the revised *Istanbul Protocol* (2022)

Potential trauma-related physical exam findings by system and torture method	Notes
SKIN	
<ul style="list-style-type: none"> ● Abrasions- superficial lesions of the skin, such as scratches, brush burn, scrapes - may show pattern and contour of instrument or surface. Repeated or deep abrasions can change skin pigmentation. ● Bruising- areas of hemorrhage into soft tissue from blunt trauma causing rupture of blood vessels. Especially evident in thin skin over bone or in fatty areas. May be patterned (e.g. “tramline” characteristic of baton, stick, or cane). Bruise color varies by skin tone, cannot be accurately determined in images, and does not assist in assessing age of injury. ● Lacerations- tearing or crushing of skin and underlying soft tissue by pressure of blunt force. Usually on prominent bony landmarks of the body. ● Incision or sharp trauma wounds- includes stab wounds, cut or slash wounds, and puncture wounds with sharp objects such as knife, machete, and broken glass. Distinguish from pattern of small incisional scars which may be from traditional healers or rituals. ● Whipping scars- when full thickness wounds result, may be hypo- or hyperpigmented, hypertrophic, causing wheals and bruising. Varies by nature of implement, force, 	<ul style="list-style-type: none"> ● Clinicians may be asked to estimate the age of scars, which can be very difficult unless the scar is very recent. However, it may be possible to state appearance is in keeping generally with timeline stated by the client. ● Usual wound healing involves initial crusting, followed by scar tissue formation– usually red at first then paler and flatter. Variations occur based on skin tone, trauma to wound edges, depth of wound, contamination/infection, wound closure method, access to hygiene, acute and chronic conditions, nutritional status, wound tension, pressure and friction. ● Scars caused at the same time by the same mode of injury may heal at different rates. Some wounds are impacted by scratching

Jenny Wen, Anita Mathews, Coleen Kivlahan, Joseph Shin, and Eleanor Emery contributed to this document. Updated August 2022. Appears in Kivlahan C., Hexom B., Shin J., Wen J., Caruso J., Maju M., Mathews A., & Emery E. (2022). Module 4: Introduction to the Forensic Physical Evaluation. In Emery E., DeFries T. (2022). Asylum Medicine Training Initiative: Asylum Medicine Introductory Curriculum. Panopto. <https://pro.panopto.com/Panopto/Pages/Viewer.aspx?tid=87da5c8b-165c-4f20-8c91-aec50152d6b2>.

ASYLUM MEDICINE TRAINING INITIATIVE

number of lashes and protection by clothing. Should be distinguished from striae which can result from growth, pregnancy, or increase in weight.

- **Burns** - can become scars or pigmented lesions, which may last months or years. Varies by skin type, depth of burn (mainly determined by temperature of object and contact time).
 - **Hot liquid burns**— viscosity determines skin appearance (e.g., molten plastic would be relatively circumscribed, whereas hot water could show initial impact, spread by gravity, and sometimes satellite burns from splashes.)
 - **Cigarette burns**- 5 to 10 mm circular or ovoid macular scars with hypo- or hyperpigmented center and a hyperpigmented, relatively indistinct periphery.
 - **Burn by objects**- may reflect shape of instrument, and are initially sharply demarcated with narrow hypertrophic or hyperpigmented marginal zones corresponding to an initial zone of inflammation. Over time the sharp edges can become blurred from migration of melanocytes, particularly noted in those with more pigmented skin.
 - **Electrical burns**- may appear as reddish-brown circular lesions few millimeters in diameter usually without inflammation and can result in hyperpigmented scars or patterns. Lesions may be faint and not easily discernible.

Specific forms of trauma/torture

- **Ligatures**- Linear zone that may extend circularly around the arm or leg, usually at the wrist or ankle, containing few hairs or hair follicles, a form of “scarring” alopecia—especially in prolonged application. Specifically, handcuffs may result in symmetrical, linear or patterned scars over bony sides of wrists/ankles.

or rubbing which may alter appearance and timeline of healing.

- Nontraumatic inflammatory processes lack the characteristic marginal zone, and is not usually associated with significant loss of tissue.

ASYLUM MEDICINE TRAINING INITIATIVE

<ul style="list-style-type: none"> ● Electric shock torture- electrical current is applied through electrodes placed on any part of the body, most commonly hands, fingers, feet, toes, ears, mouth, lips, nipples, and genitals. The power sources are variable (e.g. generators, wall source, stun gun, cattle prod, or other devices). Electrical current symptoms often include pain, muscle contraction, and muscle cramps. Tetanic muscle contractions can cause dislocation of shoulders, fractures, and lumbar and cervical radiculopathies. Perpetrators often use water or other substances on the body to increase intensity of torture, expand area of current entry, and to avoid visible electric burns. By a physical exam alone, it is rare to determine the type, time, current, and voltage of electricity used. History may be limited from loss of consciousness. 	
<p>HEENT</p>	
<p>Head and face</p>	
<ul style="list-style-type: none"> ● Fracture— loss of bone integrity from effect of blunt mechanical force on various vector planes. Direct fractures occur at the site of impact or applied force. Nature and direction of force influences the location, contour, and other aspects of fracture. Displaced fractures or joint dislocations (e.g. temporomandibular joint) may lead to visible or palpable malformations. Severe fractures, even if healed fully, may still have associated facial trauma that can lead to chronic symptoms such as pain, congestion, recurrent sinus infections, impaired sensation (including smell, taste, vision, hearing), vestibular dysfunction, as well as other ocular, jaw, dental, oral and upper aerodigestive symptoms. ● Swelling, bruises, depressions, tenderness on palpation. Note that scalp bruises are frequently invisible due to hair or skin pigmentation. ● Cranial nerves II- XII neuropathies 	<ul style="list-style-type: none"> ● Seizures may occur as a result of head injury, and need to be distinguished from panic attacks and vasovagal episodes. ● Imaging can be helpful but is rarely available during forensic medical examinations. For details, see the Istanbul Protocol section V “Physical evidence of torture and ill-treatment”, paragraphs 406, 415, 436.

Jenny Wen, Anita Mathews, Coleen Kivlahan, Joseph Shin, and Eleanor Emery contributed to this document. Updated August 2022. Appears in Kivlahan C., Hexom B., Shin J., Wen J., Caruso J., Maju M., Mathews A., & Emery E. (2022). Module 4: Introduction to the Forensic Physical Evaluation. In Emery E., DeFries T. (2022). Asylum Medicine Training Initiative: Asylum Medicine Introductory Curriculum. Panopto. <https://pro.panopto.com/Panopto/Pages/Viewer.aspx?tid=87da5c8b-165c-4f20-8c91-aec50152d6b2>.

ASYLUM MEDICINE TRAINING INITIATIVE

Specific forms of trauma/torture

- **Head trauma** is a very common form of torture. In direct trauma, contusions of the brain may occur under the region where trauma was inflicted (compared with falls, where contrecoup or location opposite to trauma is more likely). This can include lesions, hematoma, bleeds and other organic brain damage. In moderate-to-severe as well as recurring head trauma, cortical atrophy and diffuse axonal damage can be seen. Importantly, head trauma can lead to neurologic, neurocognitive and psychiatric symptoms even in the absence of radiologic evidence of brain injury. Additionally, note that peri-traumatic amnesia can make estimates of periods of loss of consciousness after head trauma inaccurate.
 - Acute symptoms may include pain, dizziness, nausea, vomiting, disorientation, altered attention and memory, and visual disturbance
 - Chronic symptoms include persistent headache, neck pain, dizziness, seizures, attention/memory/executive function or other cognitive deficits
 - Minor traumatic brain injury even without loss of consciousness can affect memory and concentration acutely or chronically (though single, mild head injury-related cognitive symptoms typically abate within 3-12 months)
 - Facial trauma is often associated with intracranial and cervical spinal injuries
- **Violent shaking-** can produce cerebral injury without external marks. However, if the victim or clothing was grabbed, there may be bruises in the upper chest or shoulders. Shaking episodes are usually brief (minutes or less), but may be repeated over days or weeks, and choking may accompany this injury. Extreme shaking can produce injuries seen in Shaken Baby Syndrome: cerebral edema, subdural hematoma, and retinal hemorrhage. Radiological and retinal exams are recommended when possible, although rarely available. Long term sequelae may occur.

ASYLUM MEDICINE TRAINING INITIATIVE

<p>Eyes</p>	
<p><i>Generalist exam</i></p> <ul style="list-style-type: none"> ● Conjunctival hemorrhage ● Lens dislocation ● Ruptured globe ● Visual field loss, traumatic optic neuropathy ● Irregular pupil (e.g. from iris injury) <p><i>Specialized ophthalmologic exam may identify:</i></p> <ul style="list-style-type: none"> ● Subhyaloid, retrobulbar hemorrhage ● Choroidal hemorrhage, scars ● Retinal hemorrhage (e.g. from whiplash, impact head trauma) ● Retinal burns (e.g. from forced solar gazing) 	<ul style="list-style-type: none"> ● If possible, ophthalmologic consultation should be obtained for any suspicion of ocular trauma, particularly for evaluation of the retina.
<p>Ears</p>	
<ul style="list-style-type: none"> ● Tympanic membrane rupture (resulting from harsh beatings, <i>teléfono</i>) ● Fluid or blood in middle or external ear ● Hearing loss <p><u>Specific forms of trauma/torture</u></p> <ul style="list-style-type: none"> ● Hard slapping of ears (<i>teléfono</i>)- a form of torture in which hitting/slapping one or both ears which can rupture the tympanic membrane by rapidly increasing pressure in the ear canal. This may also cause ipsilateral subdural bleeding. 	<ul style="list-style-type: none"> ● Use an otoscope to inspect ear canals and tympanic membranes. ● Tympanic membrane ruptures may heal within 10 days.
<p>Nose</p>	

ASYLUM MEDICINE TRAINING INITIATIVE

<ul style="list-style-type: none"> • Misalignment, deviation, crepitation of the nasal septum 	<ul style="list-style-type: none"> • Soft tissue injury may be evident on exam and confirmed with imaging if available.
<p>Mouth</p>	
<p>Oral cavity</p> <ul style="list-style-type: none"> • Signs of biting of tongue, gums, or lips (e.g. during electric shock torture) • Lesions (e.g. from forcing objects or materials into the mouth or electric shock torture) • Patterned abrasions, bruises, injuries of the buccal surface of the cheek (e.g. from impact to the face) • Torn maxillary labial frenum <p>Dentition</p> <ul style="list-style-type: none"> • Dental trauma (e.g. from direct trauma, dental torture, or electric shock torture) may involve breaking or extracting teeth. This can result in tooth avulsion, fractured teeth, dislocated fillings, and broken prostheses. • Gingival swelling, bleeding, stomatitis <p>Jaw</p> <ul style="list-style-type: none"> • Fractures or dislocation of the mandible • Pain in temporomandibular joint, clicking, and limited jaw movement can suggest temporomandibular joint syndrome, a common consequence of beatings and forceful slaps of the lower face. Electrical shocks or blows to the face causing muscle spasm can also lead to subluxation of the TMJ. 	<ul style="list-style-type: none"> • Dental caries and gingivitis may be pre-existing or from conditions in detention. Caries are more likely to develop in broken teeth, which can lead to tooth loss– therefore, missing teeth may be due to direct or indirect trauma.

ASYLUM MEDICINE TRAINING INITIATIVE

<p>Neck</p>	
<ul style="list-style-type: none"> ● Patterned abrasions or contusions on the neck (e.g. from hanging or ligature asphyxiation) ● Hoarseness, neck swelling, fracture of hyoid bone and laryngeal cartilage (e.g. from partial strangulation or blows to the neck) <p><u>Specific forms of trauma/torture</u></p> <p>Asphyxiation, suffocation, <i>submarino</i></p> <ul style="list-style-type: none"> ● A common method of torture. It usually does not leave marks and victims physically recuperate rapidly. <ul style="list-style-type: none"> ○ Dry <i>submarino</i>: asphyxiation by covering head with plastic bag, closure of mouth and nose, pressure or ligature around neck, forced aspiration of dust, cement, petrol, hot peppers, etc. Complications include petechiae, bleeding from nose or ears, facial congestion, infections, difficulty swallowing, acute or chronic respiratory problems. Some substances in the plastic bag can cause burns to skin. ○ Wet <i>submarino</i>: forcible immersion of head in water, often contaminated with urine, feces, vomit, or other contaminants. Waterboarding is one form of asphyxia where water is poured onto a cloth held over the victim's nose and mouth to simulate or cause drowning. Victims may be supine lying horizontally or with feet higher than the head. Aspiration of the water into lungs can lead to pneumonia, near drowning, or drowning. ● Any form of asphyxia can cause loss of consciousness. The sequelae are severe. This form of intentional trauma is a near-death experience for many and may result in anxiety, depression, insomnia, impairments of memory, concentration, and cognition. 	<ul style="list-style-type: none"> ● At time of evaluation, some may have absent or no physical findings from asphyxiation, especially if the mechanism is applied only a short time. Findings may resolve after a few hours (erythema), within 24 hours (petechiae), or days (bruising, abrasion). In general, the longer and the more powerful the force applied, the more likely the injury leaves marks. ● Petechiae must be identified at an early stage as they fade and disappear within 24 hours or so. Examine eyes, skin and mucosa above the area of compression with a bright light. ● Additional non-specific features that may rarely be present: frank hemorrhage from nose and ear, and fecal or urinary incontinence.

ASYLUM MEDICINE TRAINING INITIATIVE

<p>Ligature</p> <ul style="list-style-type: none"> ● Tight binding ● May result acutely in skin erythema, bruising, abrasions or swelling at the point of compression – e.g. at sites where the finger/thumb/ligature applied force. ● Acute and subacute: <ul style="list-style-type: none"> ○ Pinpoint bruising (petechiae) above the site of compression which can also coalesce into bruises ○ Scratches to neck (from assailant or victim or both) ○ Damage to mucosa of the mouth and tongue (e.g. due to direct pressure on teeth internally and swelling of the tongue) ○ Bleeding from mucosa, nose and ears ○ Difficulty breathing, ptosis, or facial nerve palsy ● Chronic: <ul style="list-style-type: none"> ○ Hoarseness (e.g. from damage to thyroid cartilage, larynx, hyoid bone) ○ Swelling, pain or tenderness – at site of application of force, upon swallowing, or with neck movement 	
<p>CHEST & ABDOMEN</p>	
<ul style="list-style-type: none"> ● Regions of pain, tenderness, or discomfort (e.g. from underlying injuries of the thoracic muscles, skeleton, or abdominal organs) ● Rib fractures (e.g. from beatings). Displaced fractures can cause lung lacerations and pneumothorax. Direct blunt force can fracture vertebral peduncles. <p>Acute abdominal trauma</p> <ul style="list-style-type: none"> ● Kidney contusion may result in hematuria. Crush syndrome from severe beatings can cause renal failure. Complications of renal injury include renal hypertension. 	<ul style="list-style-type: none"> ● Routine examination of the cardiovascular system, lungs and abdomen should be performed. In detainment, pre-existing respiratory disorders are likely to be exacerbated, and new respiratory disorders can develop.

ASYLUM MEDICINE TRAINING INITIATIVE

<p>MUSCULOSKELETAL</p>	
<p>Fractures/dislocations:</p> <ul style="list-style-type: none"> • Bony or joint abnormalities - may suggest current or past fractures, malunion, chronic dislocation or misalignment, acute or chronic joint effusions, or large hematomas • Acute neurovascular compromise can result from severe mechanisms - bleeding, hematomas, ischemia, swelling leading to compartment syndrome, and localized permanent or temporary neuropathies • Chronic pain, tenderness on palpation <p>Muscular strain/rupture</p> <ul style="list-style-type: none"> • Evaluate abnormal or asymmetrical muscle contour and bulk, as well as for any functional impairment or weakness. • Functional impairments are common, including focal areas of weakness and decreased range of motion that may arise from pain, neuropathies, severe muscle, tendon, ligament, and connective tissue injuries. <ul style="list-style-type: none"> ○ Range of motion may be impaired in many chronic injuries due to pain or altered anatomy, including chronic muscle contractures. Some injuries may actually result in abnormal joint laxity, which may also be accompanied by decreased strength and recurrent dislocations or injuries. ○ Some injuries may also lead to altered biomechanics which can contribute to additional or secondary causes of chronic pain, functional deficits or increased risk of other injuries. ○ Gait abnormalities can result from compensatory changes in biomechanics. <p>(See additional notes on suspension)</p>	<ul style="list-style-type: none"> • Musculoskeletal complaints are commonly reported by survivors of torture. These symptoms can result from beatings, suspension, other positional torture, the general physical environment of detention, or be psychosomatic. Many musculoskeletal complaints may occur in conjunction with associated dermatologic or neurologic findings, but not always. • Evaluate positions/movements that exacerbate vs relieve pain. • Some patterns of pain may be nonspecific, while others may indicate specific types of tendon, ligament, muscle, or connective tissue injury. Focused maneuvers may yield findings diagnostic of specific injuries (rotator cuff, knee ligament, meniscal and other specific diagnoses). • In the case of severe beatings, muscle tissue breakdown may lead to rhabdomyolysis, and potentially acute kidney failure. • Deformities or dysfunction suggesting dislocation, fracture, or tendinous/ligamentous injuries are ideally evaluated radiologically, however imaging is rarely available during a forensic evaluation. For more information see

Jenny Wen, Anita Mathews, Coleen Kivlahan, Joseph Shin, and Eleanor Emery contributed to this document. Updated August 2022. Appears in Kivlahan C., Hexom B., Shin J., Wen J., Caruso J., Maju M., Mathews A., & Emery E. (2022). Module 4: Introduction to the Forensic Physical Evaluation. In Emery E., DeFries T. (2022). Asylum Medicine Training Initiative: Asylum Medicine Introductory Curriculum. Panopto. <https://pro.panopto.com/Panopto/Pages/Viewer.aspx?tid=87da5c8b-165c-4f20-8c91-aec50152d6b2>.

ASYLUM MEDICINE TRAINING INITIATIVE

	Section V4 paragraph 413 of the Istanbul Protocol.
NEUROLOGICAL	
<ul style="list-style-type: none"> ● Motor impairments (e.g. impaired gait, asymmetric weakness, wrist drop) ● Sensory impairments (change in position sense, temperature sensation; hyperalgesia, paresthesia, hyperesthesia; impaired gait, coordination) ● Reflex radiculopathies, especially asymmetric ● Cranial nerve deficits ● Vestibular signs (nystagmus, dizziness, vomiting) ● Impaired memory or cognition-can result from head trauma or asphyxia. Even minor traumatic brain injury without loss of consciousness can affect memory and concentration acutely and chronically. ● Brachial plexopathy– characteristic finding from suspension injury. Brachial plexus is the most sensitive to traction injury of shoulder structures, and presentation varies according to nerves affected, pre-existing musculature, duration, and frequency of torture. One strategy for categorization is by upper plexus, middle plexus, and lower plexus. Findings include asymmetrical hand strength, wrist drop, and arm weakness with variable sensory and tendon reflexes. Usually asymmetric but can be symmetric depending on the method of suspension or positioning. <ol style="list-style-type: none"> a. Upper plexus/trunk (C5-C6, gives rise to suprascapular, lateral pectoral, musculocutaneous nerves, among others). Particularly affects shoulder muscles. Can be a result of falling onto the shoulder. May have weakness in abduction and external rotation of shoulder, elbow flexion, and supination. Sensory deficits can be seen in the deltoid region (axillary nerve), and can include the upper arm and outer forearm. 	<ul style="list-style-type: none"> ● The neurological examination should evaluate the cranial nerves, sensory organs, and peripheral nervous system. Check for both motor and sensory neuropathies. ● Evaluate cognition and mental status. ● For additional information on neurologic assessment after head trauma, see AMTI module on Traumatic Brain Injury. ● Suspension-related trauma may last minutes to hours, or longer. Estimates of time are often inaccurate as victims may be disoriented or lose consciousness.

ASYLUM MEDICINE TRAINING INITIATIVE

- b. Middle plexus/trunk** (C7, gives rise to radial and median nerves, among others). Weakness may be seen in pronation and hand radial flexion (median nerve). Sensory deficits include dorsal forearm, and dorsal aspects of first, second, and third fingers (radial nerve distribution). May see loss of triceps reflex.
- c. Lower plexus/trunk** (C8-T1, gives rise to ulnar nerve, among others). Usually seen in positions of posterior hyperextension such as reverse suspension (see below). Particularly affects forearm and hand muscles. Can see weakness in wrist flexion, loss of hand intrinsic muscles resulting in weakness and resting flexion of interphalangeal joints. Sensory deficits can be seen in the fourth and fifth fingers in the ulnar nerve distribution.

Specific forms of trauma/torture

Suspension

- Common form of torture that produces extreme pain but leaves little to no visible evidence. Peripheral neurological deficits such as brachial plexopathy may be diagnostic of suspension torture/trauma. Various forms include:
 - **Cross** suspension- arms outstretched horizontally, tied to a bar. Causes hyperabduction likely to injure lower and middle plexus.
 - **Butchery** suspension- fixation of hands upward, together or separately
 - **Reverse butchery**- feet fixed upward, head downward
 - **Reverse suspension**- variations include a) forearms bound together behind back, elbows flexed at 90 degrees with forearms tied to a bar or other object, b) suspended from ligature around elbow or wrist with arms behind the back c) lying prone handcuffed behind their back then pulled upwards. Can cause brachial plexus injury within a short period by forcing posterior

ASYLUM MEDICINE TRAINING INITIATIVE

hyperextension. Typically lower plexus is damaged first, then middle, and upper plexus if severe enough.

- **Parrot perch**- victim suspended by a bar passed behind flexed knees, usually while wrists are tied to ankles. Can produce tears in knee cruciate ligaments.
- While suspended, victims are often beaten or otherwise tortured. Look for ligature marks (varies by type used).
- Acute complications include weakness of upper extremities, pain, numbness, paraesthesia, loss of reflexes.
- Chronic complications include persistent pain and tenderness of the shoulder joint especially in lifting weight and internal rotation, resulting from injuries to muscle, ligaments, nerves, and dislocation of shoulder joints. May have muscle wasting, numbness, paresthesias of the arms.

Other positional torture

- Many forms exist– all involve tying or restraining victims in contorted, hyperextended, or other unnatural positions which cause severe pain. Damages primarily ligaments, tendons, joints, and muscles, along with nerves and blood vessels.
- Frequently cause severe chronic disability while presenting few or no external marks or radiologic findings.
- Characteristic complaints include pain in certain regions of the body, limited joint movement, pain in back, hands, cervical parts of body, lower extremity swelling. Similar principles apply as to suspension.
- Other variations include:
 - Forced standing, can be on single foot
 - Prolonged standing with arms and hands stretched high on wall
 - Prolonged forced squatting

ASYLUM MEDICINE TRAINING INITIATIVE

<ul style="list-style-type: none"> ○ Forced immobilization in small cage ○ “Banana stand” or “banana tie” with back hyperextended over a chair on the ground with wrists bound to ankles 	
EXTREMITIES	
<p>Nails</p> <ul style="list-style-type: none"> ● Nail removal- after being pulled off, pterygium or overgrowth of tissue may form from proximal nail fold ● Nail matrix burn- subsequent growth may produce striped, thin, deformed nails <p><u>Specific forms of trauma/torture</u></p> <ul style="list-style-type: none"> ● Beating of the feet (<i>falanga</i> or <i>falaka</i>)- Blunt trauma to feet (or hands or hips more rarely), with a baton, pipe, or other similar weapon. Victims describe radiating pain. The most common findings on examination are none, which is why this form of torture is used, however complications and syndromes can occur: <ul style="list-style-type: none"> ● Painful walking or inability to walk ● Pain on palpation of plantar foot and great toe dorsiflexion ● Deformities such as fractures of tarsals, metatarsals, phalanges, impaired or increased range of motion ● Tendon rupture ● Plantar fasciitis- from chronic aponeurosis ● Crushed heel and anterior foot pads- elastic pads are crushed directly by trauma or indirectly from edema. Can see torn connective tissue and atrophy of adipose tissue from loss of blood supply. Feet cannot absorb the stress, causing painful walking. 	

Jenny Wen, Anita Mathews, Coleen Kivlahan, Joseph Shin, and Eleanor Emery contributed to this document. Updated August 2022. Appears in Kivlahan C., Hexom B., Shin J., Wen J., Caruso J., Maju M., Mathews A., & Emery E. (2022). Module 4: Introduction to the Forensic Physical Evaluation. In Emery E., DeFries T. (2022). Asylum Medicine Training Initiative: Asylum Medicine Introductory Curriculum. Panopto. <https://pro.panopto.com/Panopto/Pages/Viewer.aspx?tid=87da5c8b-165c-4f20-8c91-aec50152d6b2>.

ASYLUM MEDICINE TRAINING INITIATIVE

<ul style="list-style-type: none"> ● Rigid, irregular scars involving skin and subcutaneous tissues of the foot ● Fibrosis, contracture, or gangrene in distal foot or toes (e.g. from compartment syndrome, the most severe complication– edema in a closed compartment leading to vascular obstruction and muscle necrosis) ● Painful peripheral neuropathy 	
GENITOURINARY	
<p>Vaginovulval exam</p> <ul style="list-style-type: none"> ● Acutely may see lacerations, tears, and bruises ● After healing, rarely bruises or scars of vulva (e.g. from excessive stretching) ● Abrasions (e.g. from rough objects such as foreign objects, nails, rings, or in absence of lubrication) ● Laceration of vagina, or incision from inserted sharp objects ● Healed scarring (e.g. from cigarette burns, cutting wounds) ● Female genital mutilation/cutting if present (WHO categorization)-- complications include hemorrhage, acute or recurrent infections, cysts, abscesses, keloid scars, urethral damage and urinary incontinence, complications in childbirth, sexual dysfunction, and psychological trauma. <p>Penile and scrotal</p> <ul style="list-style-type: none"> ● Acutely: swelling, bruising of scrotum, hematoceles, hydroceles (e.g. from crushing, wringing, pulling scrotum, or direct trauma) ● After healing, sequelae include testicular torsion, infarction, atrophy, hydroceles, pain, scars and sequelae (e.g. atrophy) ● Peyronie’s disease (e.g. from direct trauma to penis) ● Scarring (rare) 	<ul style="list-style-type: none"> ● If genital examination is necessary, it must be performed only with the specific consent of the survivor. ● A chaperone must be offered if the examining physician’s gender is different from that of the patient. It is not appropriate for this person to be a relative of the patient or the interpreter. ● Note sexual assault may not leave genital lesions, and signs on other parts of the body may be most significant (e.g. those in forced contact with the ground, such as back, buttocks or knees). Even during examination of the female genitalia immediately after rape, injury is present in only a minority of cases, and similar in anal examinations. If present, most will be healed within a few days. ● If patient reports history of sexual assault or torture, whenever possible, the examination should be performed by an expert in documenting sexual assault (including gynecologist, nurses).

Jenny Wen, Anita Mathews, Coleen Kivlahan, Joseph Shin, and Eleanor Emery contributed to this document. Updated August 2022. Appears in Kivlahan C., Hexom B., Shin J., Wen J., Caruso J., Maju M., Mathews A., & Emery E. (2022). Module 4: Introduction to the Forensic Physical Evaluation. In Emery E., DeFries T. (2022). Asylum Medicine Training Initiative: Asylum Medicine Introductory Curriculum. Panopto. <https://pro.panopto.com/Panopto/Pages/Viewer.aspx?tid=87da5c8b-165c-4f20-8c91-aec50152d6b2>.

ASYLUM MEDICINE TRAINING INITIATIVE

Anal

- Acute: anal and rectal tears, bruises, bleeding, discharge
 - Chronic: anal fissures, fecal incontinence, flatus, hemorrhoids, skin tags, bleeding, discharge (e.g. from anal penetration with object, violent and repeated rape)
 - Disruption of rugal pattern smooth fan-shaped scarring, especially if not on midline—can be from penetrating trauma rather than from constipation and non-intentional trauma/torture causes.
- In most cases, an external genital exam is sufficient. Internal/speculum exams are rarely needed.
 - If not previously done, it is appropriate to refer survivors of sexual assault for a full sexual health assessment, including testing for sexually transmitted infections.
 - For additional information on genitourinary findings in trauma, see the AMTI Module on Sexual and Gender-Based Violence.

References

Chapter 5C Physical Exam. In: Istanbul Protocol Manual on the Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. Office of the High Commissioner for Human Rights, United Nations. New York & Geneva; 2004 [cited 2022 Jun 6].

Chapter 5D Examination and evaluation following specific forms of torture. In: Istanbul Protocol Manual on the Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. Office of the High Commissioner for Human Rights, United Nations. New York & Geneva; 2004 [cited 2022 Jun 6].

Jenny Wen, Anita Mathews, Coleen Kivlahan, Joseph Shin, and Eleanor Emery contributed to this document. Updated August 2022. Appears in Kivlahan C., Hexom B., Shin J., Wen J., Caruso J., Maju M., Mathews A., & Emery E. (2022). Module 4: Introduction to the Forensic Physical Evaluation. In Emery E., DeFries T. (2022). Asylum Medicine Training Initiative: Asylum Medicine Introductory Curriculum. Panopto. <https://pro.panopto.com/Panopto/Pages/Viewer.aspx?tid=87da5c8b-165c-4f20-8c91-aec50152d6b2>.