PROGRAM OVERVIEW

- Learn proper splinting techniques
- Increase knowledge, convenience, and expertise using the Soft Shell Splints (upper extremity) and lower extremity splinting appliances
- Learn basic terminology and anatomy
- Increase your level of comfort applying a Soft Shell Splint
- Have a little fun!
PROGRAM OBJECTIVES

PART 1 – UPPER EXTREMITY SPLINTING

• Understand extremity anatomy and related terminology
• Understand the value added benefits of the SAM Soft Shell Splint
• Demonstrate proper splinting techniques utilizing the SAM Soft Shell and Sugar Tong Splint
PROGRAM OBJECTIVES

PART 2 – LOWER EXTREMITY SPLINTING

• Understand lower extremity anatomy and related terminology
• Understand the value of lower extremity splinting
• Demonstrate proper lower extremity splinting techniques
WHY WE SPLINT

- Splints are used to relieve pain and anxiety
- Once a splint is in place, the patients start to relax as they know their treatment has begun . . . something is being done for them
- Splints prevent further movement of the injured bones and surrounding tissue that could cause additional damage, swelling and pain
- Immobilize, protect, and make comfortable.
WHAT IS SAM SOFT SHELL SPLINT?

Soft, malleable, radiolucent device most commonly used to immobilize an upper extremity injury.
WHY THE SAM SOFT SHELL?

- Rapid application
- Convenient
- Radiolucent
- Ease of adjustment - no time limits
- Less waste
- Patient comfort
WHY THE SAM SOFT SHELL?

The Soft Shell Splint may, as in the case of a minor injury such as a bruise, be all the care the patient requires.

BUT, if further treatment is needed the Soft Shell Splint protects the injured limb and facilitates transfer, allowing the patient to tolerate the discomfort until definitive care is completed at a care facility such as an Orthopedic Clinic.
Most commonly used for:

- Strains
- Sprains
- Suspected Fractures
- Soft tissue injuries including: Contusions, Hematomas, Overuse syndromes, Carpal Tunnel, Tendonitis
TERMINOLOGY & ANATOMY
**BONES**
Skeletal support which contains blood vessels and nerves. Therefore, fractures are very painful, bleed, and can cause significant swelling.

**NERVES**
Fiber(s) that transmit impulses to and from the brain and spinal cord.
**LIGAMENTS**

Tough bands of fibrous tissue connecting two bones together at a joint

**TENDONS**

Fibrous cords of tissue that connect muscles to bones allowing for movement
Toward the Head

SUPERIOR

Toward the Feet

INFERIOR
**POSTERIOR**
Toward the back of the body

**ANTERIOR**
Toward the front of the body
**Volar / Palmar**
The Palm or Flexor surface

**Dorsal / Extensor**
Toward the back of hand or foot

**Proximal**
Nearest the trunk or body

**Distal**
Toward finger tips or toes
**LATERAL**
Farther away from midline or median

**MEDIAL**
At or towards the midline
- Flexor – Causing flexion
- Extensor – Causing extension
DISTAL PALMAR CREASE
A crease extending across the distal palm lying about one inch from the base of the fingers

THENAR EMINENCE
Base or ball of the thumb
BONES OF HAND & WRIST
**RADIUS**
The bone on the thumb side of the wrist / lower arm

**RADIAL**
The thumb side of the wrist / lower arm

**ULNA**
The bone on the “little finger” side of the wrist / lower arm

**ULNAR**
The “little finger” side of the hand, wrist, and forearm
**FIBULA**
The bone on the “little toe” side of the ankle and leg

**FIBULAR**
The “little toe” side of the ankle and leg

**TIBIA**
The bone on the “big toe” side of the ankle and leg

**TIBAL**
The “big toe” side of the ankle and leg
**ANKLE JOINT**

Consists of 3 bones of the true ankle, the tibia, fibula, and talus

**FOOT**

An extremely complex structure made up of 26 bones, 33 joints, 19 muscles, and 107 ligaments
MOST COMMON INJURIES
Contusion (Bruise) – A region where small blood vessels (capillaries) have been damaged; causes discoloration and/ or swelling

Hematoma – Solid swelling of clotted or partially clotted blood in tissue

Tendonitis – Inflammation of the tendons resulting in pain, swelling, and increased warmth

Carpal Tunnel Syndrome – Compression of the tunnel in the center of the wrist which contains a large nerve providing motor and sensory function to the thumb side of the hand, resulting in pain and numbness
Sprain – Stretching or tearing of ligaments

Strain – Stretching or tearing of muscle or tendon

Fracture – A broken bone

Displaced Fracture – A fracture where the bone ends are no longer in place

Non-Displaced Fracture – A fracture where the bone remains in place

Open Fracture – When the broken bone is exposed to open air
MOST COMMON TYPES OF SPLINTS

using the SAM Soft Shell
**Volar Splint**
Palm side of hand, wrist and forearm

**Ulnar Gutter**
Ulnar side of hand, wrist, and the forearm

**Thumb Spica**
Thumb and thumb side of hand, wrist, and the forearm

**Sugar Tong**
Mid palm to tip of elbow
APPLICATION TECHNIQUES
APPLICATION TIPS

- Based on patient size, select appropriate length and width of splint (9”, 12”, 15”, in standard width or XL)

- For initial molding use your own extremity, right or left, as a template
CONT’D TIPS

• Always place firm end of splint towards fingertips and extra firm end toward elbow

• “C” Curve - molding into the shape of the letter “C”

• After applying splint to patient, make final adjustments as needed

• Secure with wrap of choice; avoid over tightening wrap
VOLAR SPLINT
STEP 1

Fold distal end of splint (firm end)

**TIP:** Splint should not extend beyond the Distal Palmar Crease to allow free finger movement
STEP 2

Create “C” Curve
STEP 3

Mold “nest” for the thenar eminence / ball of thumb

Use your own wrist as a template
STEP 4

Fold up the Ulnar Flange for increased strength
VOLAR SPLINT OVERVIEW
ULNAR GUTTER
STEP 1

Create “C” Curve
Create the proper contour by forming the splint to the ulnar side of your own hand. Be attentive to position of function.
STEP 3

Pad between the 4th and 5th fingers to prevent rubbing
THUMB SPICA
STEP 1
Create “C” Curve
STEP 2

Fold the distal 4” of the Soft Shell into a tight tube
STEP 3

Using your own thumb, wrist, and radial forearm as a template, form the splint to create a proper thumb spica shape. Assure the splint is snugly applied to the thumb but flared at the base to allow room for the thenar eminence.
THUMB SPICA OVERVIEW
STEP 1

Determine the correct splint length by placing the sugar tong around the patient’s uninjured limb with the tip of the elbow aligned with the X.
Fold back the excess splint on the dorsal side so it extends just distal to the knuckles and on the palmar side so it extends no farther than the distal palmar crease.
STEP 3

Using your own arm as a template, use the volar splint steps 1-4 to shape the volar limb of the sugar tong.
STEP 4

Place a “C” curve in the dorsal limb of the sugar tong
STEP 5

Fit molded sugar tong to patient with tip of elbow nested against the X and make fine adjustments as needed.
STEP 6

Secure splint with wrap of choice, being certain the soft elbow portion is snugly crimped and compressed around the elbow. This prevents unwanted pronation and supination.
SUGAR TONG OVERVIEW
HUMERAL SHAFT SPLINTING
To correctly measure the length of each limb of the Sugar Tong splint, place the patient’s uninjured elbow snugly in the soft pocket of the Sugar Tong splint.
Fold excess splint on the medial side of the limb so it does not rub or impinge on axilla. The lateral side of the splint can extend as far as desired.
STEP 3

Create gentle “C” curves in both limbs of the splint for added strength
STEP 4

Secure to injured limb with wrap of choice making fine adjustments as needed

Apply sling and swath or shoulder immobilizer
LOWER EXTREMITY
**STEP 1**
Securely wrap the ankle

**STEP 2**
Apply a “C” curve to both limbs of the splint

**STEP 3**
Place the foot in the soft pocket of the Sugat Tong splint

**STEP 4**
Secure with your wrap of choice
The splinting process is never complete until you have **ENSURED** the patient is more comfortable after the splinting process than before **AND** the patient has normal circulation, sensation, and motor function after the splinting process.
POST SPLINTING

The splinting process is never complete until the PROVIDER has:

• Assessed and approved the completed splint
• Assessed the patients comfort relative to the splint
• Verified satisfactory circulation, sensation, and motor function
• Provided instructions for follow-up care
THANK YOU

Questions or comments?