

# How to Splint and Sling a Broken Forearm

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7/30/18

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## Introduction

This set of instructions will explain how to make a splint and sling for a suspected broken arm. These instructions will only be applicable for the lower part of the arm below the elbow. It is important that you follow the instructions accurately. With any first-aid situation, the person providing aid can cause more injury to the patient. We will attempt to avoid that.

**Warning! A splint and sling are temporary and should only be used if the patient needs to be moved because medical care is not immediately accessible. If a broken arm is suspected, the patient needs to get to professional medical care.**

In general, putting an arm in a splint and sling is simple. We will reinforce the arm with a solid object then wrap it to keep it in place. Then we will place it in a sling to allow the patient to rest their arm and prevent them from moving it too much.

### ***List of terms Used***

The following is a list of terms you will need to know.

- Forearm — Part of the arm below the elbow but above the wrist.
- Straight Arm Position — The arm is straight with no bend in the elbow or with only a slight bend in the elbow.



*Figure 1: Photo showing arm in straight position. Note the straight elbow. The bend at the wrist is irrelevant. Source: Physical Sports First Aid*

- Bent Arm Position — The arm is very clearly bent at the elbow.



*Figure 2: Picture of a bent arm. Source: Shutterstock*

## Symptoms of a Broken Bone

There are symptoms that will indicate a broken bone:

- Violent impact followed by sharp pain in arm
- Unusual bend in arm
- Pain on specific part of arm
- Swelling
- Sound or sensation of bone snapping

If the bone is suspected of being broken, it is best to immobilize it and get to a medical professional.

## List of Materials Needed

Not everyone has a full assortment of first-aid supplies. However, for creating a splint and a sling many different items can be used. The following materials are not a definitive list. The list provided describes the traits each item should have. Possible options are given below each item.

### Materials

- Two straight rigid objects that are longer than the patient's forearm
  - Board
  - Rolled newspapers
  - Cardboard
- Wide strips of cloth that can wrap around the arm and attach the rigid objects
  - Medical tape
  - Bandage
  - Duct tape
  - Cloth
  - Belt
  - Rope
- Something to suspend the arm in and can be tied off around the shoulders
  - Triangle shaped bandage
  - Long sleeve shirt
  - Belt

## Before Beginning Treatment

**Warning! Avoid moving the patient as much as possible. If the patient must be moved remind them to not move their broken arm as much as possible.**

- Making a splint and sling should only take a few minutes. It should also be done wherever the injury occurred. We want to reduce movement as much as possible to prevent further damage.

**Warning! Do not put yourself, the first-aid provider, at risk. If a situation is too dangerous to enter, do not enter. Remember to contact emergency services if necessary.**

- Remember to take appropriate precautions for your own safety as well. Depending on the situation it may be dangerous for you to administer first-aid.

## Steps for a Splint

**Warning!** Before beginning treatment make sure you and the patient are safe from further danger. Also, make sure you have a plan developed on how to get the patient to professional medical treatment.

The following is how to place a suspected broken arm in a splint. There are two positions to splint it in, either with the arm extended or with it bent at the elbow.

**Important Note:** All breaks require a splint, but not all breaks require a sling. Depending on the orientation of the break a different type of sling may be necessary.

### Steps to Create a Bent Arm Splint

**Important Note:** For this splint use one rigid object.

1. Using the rigid object place it under the arm. Ensure it extends to the wrist and above the elbow.



Figure 3: Picture of rigid object placed on forearm. Note it extends to at least the wrist and above the elbow. Disregard the blood. Source: YouTube "How to Splint a Broken Arm"

**Important Note:** When splinting the goal is to immobilize the joints above and below the point of break.

**Warning!** Do not wrap so tight that circulation is restricted. This can injure the patient more. Keep the tips of the fingers exposed and monitor them. Also, ask the patient if the splint is too tight or if they feel any discomfort.



*Figure 4: Picture of how to squeeze the nail. Note the white discoloration. When the pressure is released the pink color should return. Source: YouTube “Fingernail Test for Diabetes”*

2. Attach the rigid objects to the patient with the wrapping material. Wrap it around the arm and the splint and tie it off. If you have a long piece of material you can wrap it multiple times while slowly moving down the length of the splint. Test if it is too tight by gently squeezing the fingernail. The pink color should return in 1 to 2 seconds. Alternatively, ask the patient if their fingers are becoming numb.



Figure 5: Picture of wrappings attaching the splint to the arm. They are tied off to prevent coming undone. Source: YouTube "How to Splint a Broken Arm"

3. Monitor the patient for signs of pain or discomfort. Get them as quickly as possible to professional medical care.

For a video demonstration of this see the link below.

<https://www.youtube.com/watch?v=Ot7c3syPtr4>

### Steps to Create a Straight Arm Splint

**Important Note:** Use two rigid objects for this splint.

1. Using the rigid objects place them on either side of the arm. Ensure they extend to the wrist and above the elbow.

**Important Note:** When splinting the goal is to immobilize the joints above and below the point of break.

**Warning!** Do not wrap so tight that circulation is restricted. This can injure the patient more. Keep the tips of the fingers exposed and monitor them. Also, ask the patient if the splint is too tight or if they feel any discomfort.

2. Attach the rigid objects to the patient with the wrapping material. Wrap it around the arm and the splint and tie it off. If you have a long piece of material you can wrap it multiple times while slowly moving down the length of the splint. Test if it is too tight by gently squeezing the fingernail. The pink color should return in 1 to 2 seconds. Alternatively, ask the patient if their fingers are becoming numb (see figure 4 above).

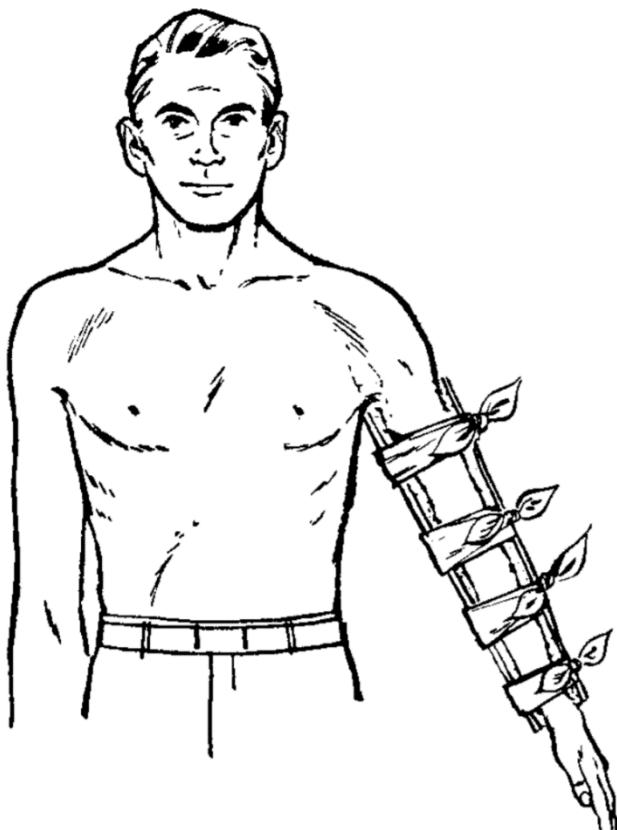


Figure 6: Illustration of a straight arm splint. Note boards have been placed on either side extending to the wrist and above the elbow. They are then attached with wrapping material. The material can be attached in the same manner as in the bent arm position. Source: U.S. Army

3. Monitor the patient for signs of pain or discomfort. Get them as quickly as possible to professional medical care.

## Step for a Sling

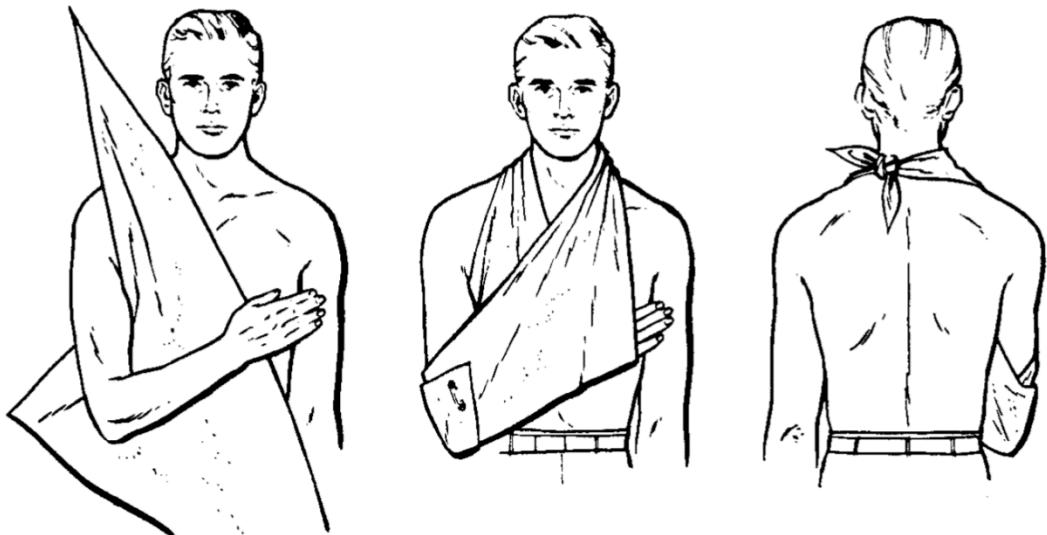
A sling is not always necessary but it will help reduce arm movement further.

**Important Note:** To create a sling only a triangular bandage or some other large piece of cloth is needed.

### Steps to Create a Bent Arm Sling

1. Fold the cloth into a triangular shape.
2. Slide the cloth under the arm so it rests between the chest and the arm.
3. Place one corner of the triangle at the elbow. Another on the opposite shoulder of the broken arm. Let the last corner hang down.
4. Bring the hanging corner up to the shoulder of the broken arm.
5. Pull the two shoulder ends behind the neck and tie together. The arm should now hang from the neck in the sling.
6. Tie the last corner on the elbow into an overhand knot to prevent the elbow from sliding out of the sling.

7. Using extra wrapping material, wrap around the entire sling and body to hold the sling close to the body (see figure 9).



*Figure 7: Pictures of how to create a bent arm sling. Note the picture uses a safety pin to hold the elbow in. An overhand knot can be used instead. Source: U.S. Army*



*Figure 8: Picture of overhand knot. Note it is a basic knot.  
Source: Free-Macrame-Patterns.com*



*Figure 7: Illustration of extra wrappings around the sling and body.  
Source: U.S. Army*

## Steps to Create a Straight Arm Sling

1. Take the cloth and fold it into a thick strip about 2 inches wide.

**Important Note:** Wrapping material can also be used when creating a straight arm sling.

2. Wrap the cloth around the upper body of the patient and the upper part of the arm. Wrap it snuggly. The goal is to prevent the whole arm from moving too much. Keep it fixed to the body.
3. Tie the two cloth ends together to keep it in place.
4. Use one more cloth, if available, and wrap it in the same manner. It should look similar to the extra wrappings added in figure 9. The only difference is the arm position, but the technique is the same.

**Important Note:** Ensure the patient is comfortable. The weight of their arm will be resting on their neck.  
Adjust the sling if necessary.

This video shows how to create a sling.

<https://www.youtube.com/watch?v=XsYNTNF1TTU>

## Solutions to Possible Problems

- **Arm Not in Either Bent or Straight Position**
  - Do your best to splint the arm in the position it is in. Splint it in the form of whatever position it is closer too. Sling it in the same way.
- **Arm Swelling**
  - If the arm is swelling loosen the splint wrappings.
- **Un-Splint-able or Un-Sling-able Arm**
  - If you deem the arm cannot be placed in a splint or a sling — reasons may be because of bone protruding through the skin, bleeding, forearm bent at an angle that it cannot be splinted, etc — then do your best to immobilize it. You can tell the patient to not move their arm or have them hold it gently. If necessary treat other wounds on arm (treatment of other wounds is outside the scope of these instructions however resources are provided at the end of the document).

**Important Note:** The goal is to not have them move their arm as much as possible.

## Post Treatment

- **Monitor for Shock**

**Warning!** Shock is a medical emergency. You must call for emergency services if shock is suspected.

- The patient may enter shock
- Shock symptoms vary but may include:
  - Cool, clammy or pale skin
  - Rapid pulse

- Rapid breathing
  - Dizziness or fainting
  - Weakness or fatigue
  - Nausea or vomiting
- If you see signs of shock then:
  - Lay the person down and elevate the legs and feet slightly.
  - Keep the person still and don't move them.
  - Loosen tight clothing
  - Cover the person with a blanket to keep them warm.
- **Swelling of the Arm**
  - Monitor for swelling of the arm

***Important Note:*** Do not let the arm swelling restrict blood circulation.
- **Check for Other Injuries**
  - The patient may have been injured in other ways depending on the incident. Treat other injuries accordingly (more resources provided at the end of the document).
- **Make Sure Patient is Comfortable**
  - Make sure the sling and splint are comfortable on the patient. Make any adjustments that may be necessary.
- **Get the Patient to Professional Medical Help**
  - The bone needs to be x-rayed and checked by a medical professional. If it is broken then steps need to be taken to ensure it heals properly (putting the arm in a cast). Only a medical professional can do this.

**Warning! Do not attempt to cast or otherwise manipulate the bone yourself. You will hurt the patient more. Take them to a medical professional.**

## Extra Resources

Below is a list of extra resources for more help with splints, slings, and other first-aid topics.

Mayo Clinic — Trusted healthcare provider. This article talks about arm fractures.

<https://www.mayoclinic.org/diseases-conditions/broken-arm/diagnosis-treatment/drc-20353266>

U.S. Army Field Manual — Shows many other types of splints and slings. Also includes other bandaging techniques.

<https://fas.org/irp/doddir/milmed/bandage.pdf>

Boy Scouts of America Wilderness First Aid Curriculum — BSA is a major youth development organization. It has many emergency preparedness and first-aid courses. This document discusses first-aid techniques for many different types of emergencies.

<https://filestore.scouting.org/filestore/pdf/680-008.pdf>

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