

Dear Aesculapians and Orthopedic Interest Group,

Thank you so much for volunteering at Future Docs. The impact on children from our community is immeasurable and fun will be had by all!

Future Docs stations usually entail 3 parts; 1) Introduction and explanation, 2) Hand's on, and 3) Chatting with Parents

### 1) Introduction and Explanation

First, explain who you are and what the role of a doctor is. Ask if anyone has ever broken a bone. Show radiographs of breaks and ask if kids know what to do if you have a broken bone. A break is also called a fracture. Explain how they should keep the injury still (especially if neck or back injury), remain calm, tell an adult, who may splint the affected area, and go to the doctor. Then explain how the doctor may cast the break so that the bone can heal or "knit" back together. Explain that casting is really just a big hard bandage, much like a bandaid. Plaster is the same material you use in art class to make masks. Another material, fiberglass is a kind of plastic that gets real hard like plaster. Feel free to joke about daredevils in the group who are prone to more breaks. Or how someone must be Superman if they don't break any bones! Some of the older kids may be interested in more technical aspects of casting. Parents may as well. Ask kids what they want to do when they grow up. Some will say Doctor and it's fun to ask what kind, etc. Discuss how to keep bones healthy through exercise and good nutrition. Explain how to care for the cast and to keep it from getting wet in the shower by bathing or wrapping it in a plastic bag.

### 2) Hand's On

Items Needed:      Plaster Casting Material  
                         Buckets of Warm Water  
                         Scissors  
                         Blue Pads or Newspapers to catch water under buckets  
                         Stockinette (preferred but not required)  
                         Casting Padding (preferred but not required)  
                         Markers to sign the casts

When moving on to the Hand's On section, I always ask, "OK, who wants to break their finger first? What? No volunteers? Well, how are we supposed to cast a finger if we don't have any breaks?" Most kids will shake their head vigorously, but there's always one kid who will volunteer. During the casting, I joke that now they can go home and scare mom with their "broken" finger, or this is a "get out of school" free card. Kids eat that stuff up and so do their folks. Just make it clear that you're joking.

Most finger breaks do not require casting, but instead are splinted, often to the adjacent finger. For this station though, we can teach a quick lesson in casting and use minimal materials by casting a finger.

Because the casting material is usually quite wide and not meant for fingers, we cut in in half lengthwise. You will need no more than 8 inches of casting material for the average child's finger (usually 5-7). If you have stockinette, cut a piece 1.5 inches longer than the finger and slide over "broken" finger. If you have cast padding, wrap the finger with the padding. Then, soak the pre-cut casting material in warm water and squeeze out as much water as possible. Then wrap the finger, starting from the base and working towards the tip, overlapping 1/2-3/4 of the last wrap each pass. Stop wrapping at the fingertip and fold the remaining stockinette back over the cast. The cast should dry in about 5 minutes and can then be slipped off the finger.

### 3) Chatting with Parents

Parents may ask questions about medical school. They may ask more technical questions about casting. Feel free to read up on casting techniques, applications, and materials so that you can give informed information. Pictures will be taken so always be happy and friendly. And remember, you may actually influence a child to become a doctor one day! How cool is that?!?!

#### **Fun facts:**

Most casting material is now fiberglass and comes in fun colors.

A special saw is used to remove the cast. It will cut plaster and fiberglass, but not skin!

An X-ray is a picture of your bones and provides a map for the doctor to see what direction to take with your injury.

On international medical missions, we use plaster casts. Fiberglass must be cut off, whereas plaster can be soaked in any water. No machetes near these casts please!

If a break is very bad, a doctor may have to use screws or pins, just like repairing furniture!

Because a cast is on for so long, hair can grow under the cast and the muscles will get smaller and weaker (atrophy). One must be careful after the cast comes off and build up strength slowly, sometimes with the help of physical therapy.

Some breaks require a sling or crutches to help take pressure off the bone while it is healing.

Performing exercises or work with weights makes your bones denser and less likely to break.

Calcium and Vitamin D keep bones healthy. Calcium is found in milk products like cheese and yogurt, and in green leafy vegetables, like spinach and collard greens. Vitamin D is found in fish like salmon and tuna. Your body even makes Vitamin D when it is exposed to the sun!! But be careful, the sun can damage the skin too, so always wear sunblock.