Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

# About Your External Fixator (Ex Fix)

This information explains your external fixator (also called an “ex fix”), including what it is, how to care for it, and when to contact your healthcare provider. For the rest of this resource, the words “you” and “your” refer to you or your child.

## About your ex fix

An ex fix is a device that’s placed on your hand, arm, foot, or leg to help keep your bones in place so they can heal and grow. Your ex fix will be put in place by an orthopedic surgeon (a surgeon who specializes in bone and joint problems). Your nurse will give you more information about your surgery and how to get ready for it.

### The parts of your ex fix

Your ex fix has many parts that work together to help your bones heal the way they should. These parts include:

- **Pins**: The pins are the large, solid parts that screw into your bone.
- **Wires**: The wires are thinner and smoother than the screws. They go from one side of your bone to the other.
- **Cables**: The cables are the metal, braided parts that help adjust your bones.
- **Rings**: The rings are the arcs or circles that go around your ex fix to hold it in place.
- **Rails**: The rails are the long straight parts usually on the outside of your thigh or arm.
- **Clickers**: The clickers are the larger parts of your ex fix that adjust your bone by pulling on either cables or rings. They are not always used.

You may have all or some of these parts on your ex fix.

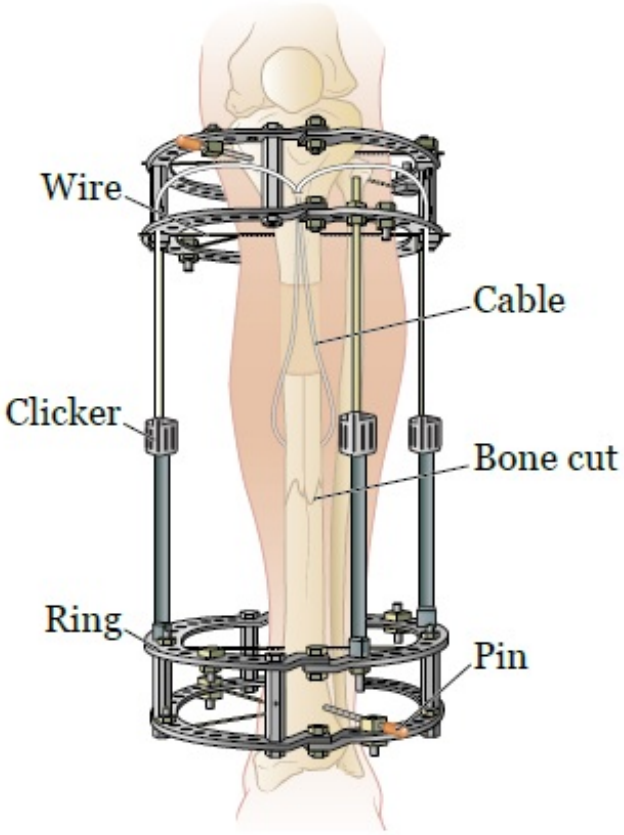



Figure 1. An example of an ex fix

## Adjusting your ex fix

Once your ex fix is in place, you'll need to adjust it a few times a day so that your bones grow the way they should. To make the adjustments, you will turn parts of your ex fix with a wrench that your healthcare provider will give you. Your healthcare provider will also show you how to make the adjustments and give you specific instructions for how often you should adjust your ex fix. It's important to follow your healthcare provider's instructions.

Your healthcare provider will also talk with you about your distraction rate. Your distraction rate is how much you will need to adjust your ex fix. You will need to adjust it between 1 to 6 times every 24 hours. Follow your adjustment schedule so that your bones regrow correctly.

### Missing an adjustment

**If you forget to make your adjustments, call your healthcare provider's office right away. Do not make up for your missed adjustment by doing more than what you're supposed to do at each adjustment.** Tell your healthcare provider if you have any issues with the adjustments or if they become painful.

# Caring for your ex fix

## Follow-up visits

You will have follow-up visits with your healthcare provider about every 2 weeks. This is to make sure everything is healing the way it should be. Your healthcare provider will also check to see if your adjustment schedule is working or if it needs to be changed.

### For 2 to 3 weeks after your surgery

- It's normal to have some clear or bloody drainage leaking from around your pins.
- Before you leave the hospital, your healthcare provider will wrap your pins and wires with gauze. Keep the gauze on your pins and wires for 2 to 3 weeks after your surgery. This will keep any drainage from leaking and will help keep your skin from rubbing against your pins.
- Your healthcare provider will remove the gauze at your first follow-up visit.
- **If you have bright red, bloody drainage that doesn't stop, or drainage that is thick, pale yellow, or smells bad, call your healthcare provider right away.** Leave the gauze on until your healthcare provider gives you further instructions.

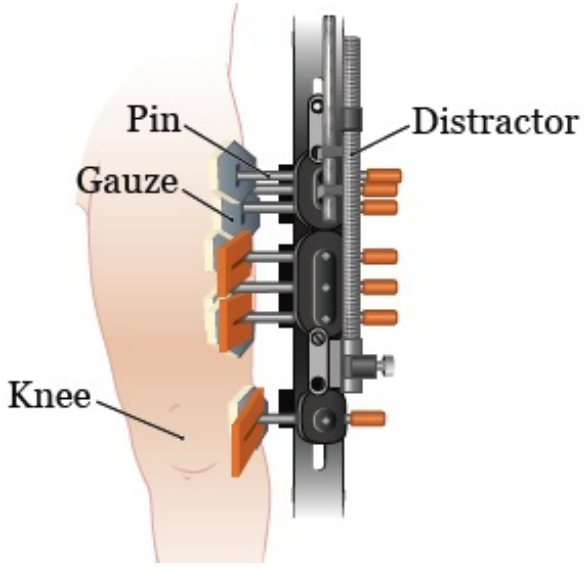



Figure 2. Thigh pin and wires wrapped in gauze

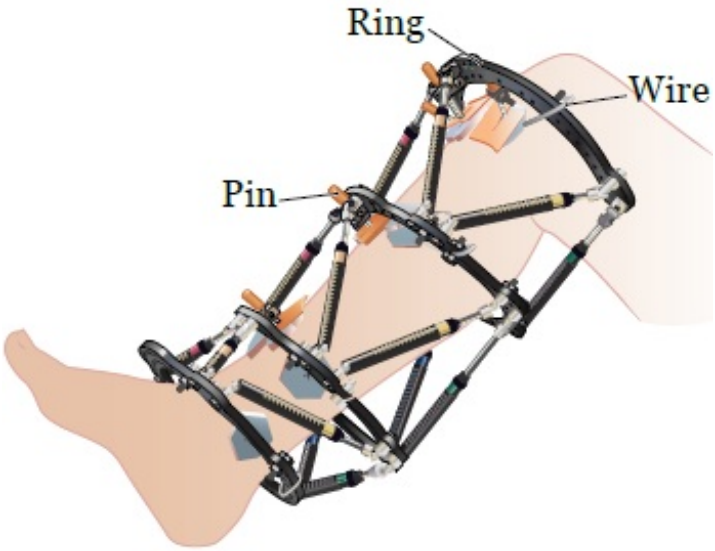



Figure 3. Leg pin and wires wrapped in gauze

### Starting 2 to 3 weeks after your surgery

- After 2 to 3 weeks, if there's no bleeding or drainage coming from your pin and wire sites and there are no signs of infection, you can stop wrapping your pins and wires with gauze. **Your healthcare provider will tell you exactly when you can stop wrapping your pins and wires.**
- If you feel more comfortable with your pins and wires wrapped with gauze, you can keep wrapping them. If you choose to wrap your pins and wires, remember to clean them and change the gauze every day.

- If the skin around your pins and wires is swollen, call your healthcare provider. You may want to keep wrapping your them with gauze. This will separate your skin from the pin and wire and keep them from pulling on your skin.

# Cleaning your pin, wire, and cable sites

After your ex fix is placed, you will have gauze over your pin, wire, and cable sites. Once your healthcare provider removes your gauze at your first follow-up appointment, you should clean your pin, wire, and cable sites every day. This will:

- Keep your skin from sticking to the pins and wires.
- Lower your chances of getting an infection.
- Prevent pain and irritation.
- Prevent drainage.

When you clean your sites, you should also check for any signs of infection. The signs of infection are listed in the “Signs of infection” section.

## How to clean your pin, wire, and cable sites

1. Gather your supplies. You will need:
    - 5 to 10 cotton applicators (such as Q-tip®)
    - Povidone-iodine (Betadine®) or bacitracin
    - Gauze
    - Antibacterial soap (such as chlorhexidine, Dial®)
    - Water
    - 2 cups
2. Remove the old gauze from your pin, wire, and cable sites. Throw it away.
3. Clean your hands with soap and water or an alcohol-based hand sanitizer.
4. Mix water and a few drops of antibacterial soap in a cup.

5. Pour some povidone-iodine or bacitracin into the other cup.
6. Dip a cotton applicator into the cup with water and soap.
    - Don’t re-dip the same cotton applicator into the cup twice. Only dip clean cotton applicators into the cups.
7. Clean each site with the cotton applicator to remove any loose tissue and scabs stuck to your pin, wire, and cable sites.
8. Throw away the cotton applicator.
9. Dip a new cotton applicator into the cup with povidone-iodine or bacitracin.
10. Clean each of your pin, wire, and cable sites with the povidone-iodine or bacitracin. Wait 3 minutes for them to dry.
11. Throw away all the cotton applicators you used.

Your healthcare provider will let you know when you can start showering again. This is usually 3 to 4 weeks after your surgery. Once you can start showering again, you may want to clean your pin, wire, and cable sites after a shower, bath, or pool therapy. This is because your skin will be soft and cleaning your sites will be easier.

# Check for infections

Even with regular cleaning and care, you will most likely get several infections. Don’t worry. These are very common and easy to treat.

The first and most common symptom of an infection is new pain around one of your pins, wires, or cable sites. Redness and drainage that is thick, pale yellow color, or smells bad are also signs of infection, but these may not happen until 1 to 2 days after the infection starts.

## Signs of infection

If you have any of these signs, call your healthcare provider.

- A fever of 101.3 °F (38.5 °C) or higher.
    - Most people who have infections **don’t have a fever**.

- New or worse pain around your pin, wire, or cable sites.
- New redness and tenderness around your sites.
- Swelling around your sites.
- Skin that feels like it's filled with fluid.
- Drainage that's white, yellow, green, or cloudy. The drainage may be red or pink if there's some bleeding in the area.
- A bad smell coming from your sites.

# Managing your infection

## Povidone-iodine wrap

If you're showing signs of an infection, your healthcare provider may have you wrap your pin, wire, and cable sites with a povidone-iodine wrap. This will help your sites heal. You can get povidone-iodine wraps from your local drug store or from your healthcare provider.

Follow these instructions to wrap your site with a povidone-iodine wrap.

1. Clean your pin and wire sites following the steps in the "How to clean your pin, wire, and cable sites" section.
2. Dry your sites using a towel.
3. Soak a gauze with povidone-iodine.
4. Wring out the gauze.
5. Wrap the gauze around your pin sites.
6. Leave the gauze in place for 24 hours. After 24 hours, remove it.

Your healthcare provider will tell you how often you should use a povidone-iodine wrap.

## Soaking in magnesium sulfate

Your healthcare provider may also recommend that you soak your leg or arm in a bath of magnesium sulfate (Epsom Salt®) for 20 minutes. This will clean your sites and help your muscles relax. You can buy magnesium sulfate over-the-counter (without a prescription) at your local pharmacy. Follow the instructions on the package.

After soaking in magnesium sulfate, clean your sites gently and apply povidone-iodine or bacitracin to them. You may also want to do some stretches after your bath since your muscles will be relaxed and you will be more comfortable.

## Medicine

If your signs of infection don't go away after 2 days, you may need to take an antibiotic to treat your infection. Your healthcare provider will give you a prescription for an antibiotic before you leave the hospital so that you have it when you need it.

## Take a photo

If the infection doesn't get better after trying each of these, call your healthcare provider. They may ask you to take a photo of the area and send it to them using your MSK MyChart (MSK's patient portal) account.

- If you don't have an MSK MyChart account, visit mskmychart.mskcc.org or call 646-227-2593 to sign up. For more information, talk with someone in your healthcare provider's office.
- Portal messages are only answered during office hours and shouldn't be used for emergencies.
- If you have an emergency dial 911 or go to the Urgent Care Center (UCC).
    - The UCC is on the 1st floor of Memorial Hospital (MSK's main hospital). The closest entrance is located at:

425 East 67th Street (between York and First Avenues)
New York, NY 10065

This entrance is open 24 hours a day, 7 days a week.

For help with taking pictures of your pin site, read our resource *Tips for Taking Pictures to Share with Your Healthcare Provider* (www.mskcc.org/pe/tips-taking-pictures).

Your healthcare provider may ask you to come into their office so they can see what type of infection you have. This is to make sure that you're getting the right antibiotic for your infection.

### Deeper infections

While most infections are easy to treat, you may get an infection that needs more treatment. If this happens, you may need IV (intravenous) antibiotics (antibiotics given through a vein) or surgery to clean or adjust your pins or wires. Your healthcare provider will give you more information if you need this.

## Contact information

If you have any questions or concerns, talk with a member of your healthcare team. You can send a picture of your pin, wire, and cable sites to your healthcare provider through MSK MyChart. Remember, portal messages are only answered during office hours and shouldn't be used for emergencies.

You can reach Orthopedic Department office Monday through Friday from 9:00 a.m. to 5:00 p.m. at 212-639-6448. If you're a patient at MSK and you need to reach a provider after 5:00 p.m. and before 9:00 a.m., during the weekend, or on a holiday, call 212-639-2000 and ask to talk with the orthopedic fellow on call.

For more resources, visit www.mskcc.org/pe to search our virtual library.

About Your External Fixator (Ex Fix) - Last updated on August 27, 2026
All rights owned and reserved by Memorial Sloan Kettering Cancer Center