

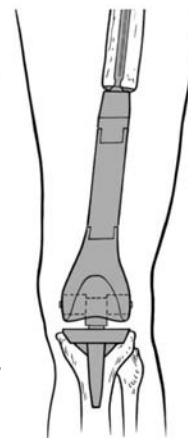
## Limb Sparing Procedures

### What is a "limb sparing procedure"?

A limb sparing procedure is a surgical operation that replaces a diseased bone and reconstructs a functional limb by using a metal implant, a bone graft from another person (allograft), or a combination bone graft and metal implant (allo-prosthetic composite).

### What are the potential late effects after a limb sparing procedure?

- **Nonunion** - For people who had reconstruction with a bone graft, nonunion (non-healing) of the bones is a possible late complication. In the allograft procedure, the portion of bone removed due to tumor is replaced with donated bone. Nonunion occurs when one or both ends of the replaced bone do not heal, making fracture more likely, especially if the area is stressed. Surgery for additional bone grafting may be necessary.
- **Limb-length discrepancy** - Bones are constantly growing during childhood and adolescence, until adult height is reached. Each bone has a growth plate (area where growth activity occurs). Often, bone cancers are located near the growth plate, requiring removal of this area during the limb sparing procedure. Since the reconstructed section of bone cannot grow, a difference (discrepancy) in limb-length may occur over time. Surgeries or other procedures may be necessary to allow for growth.
- **Prosthetic loosening** - Sometimes the implanted joint can loosen or wear out, especially in people who are active. These complications may require further surgery to tighten or replace part or all of the implant. **Any loosening of the implant should be reported to your orthopedic surgeon.**
- **Contractures** - After a limb sparing procedure, muscles, tendons and ligaments sometimes stiffen or shrink, forming contractures (permanent tightening of the joint). This is more likely to occur in people who are not physically active. Periodic follow-up with a physical and/or occupational therapist helps prevent contractures from forming.
- **Additional surgery may be needed** - for revision of prosthesis as a person grows in height.
- **Obesity** – may result if the person becomes physically inactive.



- **Chronic pain and/or infection** – some people may develop persistent problems with pain and/or infection.

## What is the recommended follow-up care after a limb sparing procedure?

- **Follow-up visits are usually done by the orthopedic surgeon** (bone specialist) **every 6 months until the person is fully grown, then every year.** The follow-up intervals may lengthen as time progresses.
- **X-rays** are usually done at least yearly.
- **Life-long follow-up** by an orthopedic surgeon is recommended.
- **Limitation of certain physical activities** is sometimes necessary.

## What can you do to promote health after limb sparing surgery?

- **Physical and occupational therapy** are important for successful rehabilitation after limb sparing surgery. Both **passive and active range-of-motion exercises** help maintain the best limb function.
- If there is pain, **swelling, redness** or any **other signs of infection** at the surgical site, or if you develop **fever**, contact your **healthcare provider promptly.**
- Due to a **life-long risk of infection in individuals with allograft prostheses, antibiotics** should be taken **prior to all dental procedures (including teeth cleaning)**, and for **other invasive medical procedures** such as those involving the respiratory, gastrointestinal, or urinary tracts. Infection can result if bacteria enter the bloodstream during these procedures and become attached to the internal metal components (screws, plates, rods, joints) of the endoprosthesis.
- Some metal implants may pose a **problem when going through security screening**, such as at the airport. It is good idea to **carry a medical letter** indicating that you received treatment for bone cancer and have a metal implant.

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Additional health information for childhood cancer survivors is available at  
[www.survivorshipguidelines.org](http://www.survivorshipguidelines.org)

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