

WHAT IS THE REPIPHYSIS® IMPLANT?

The REPIPHYSIS® Expandable Implant enables children to have their "replacement bone" grow with them, helping to eliminate repetitive and traumatic surgeries.

This revolutionary technology is minimizing the traumatic impact of surgery for pediatric patients. The REPIPHYSIS® implant redefines bone replacement surgery for children and teens between the ages of five and about fourteen years of age, by helping to eliminate repetitive and traumatic surgeries, hospital stays and rehabilitations.

HOW DOES IT WORK?

The REPIPHYSIS® implant is made from titanium and is wrapped in an aerospace polymer. Once inserted in the child's healthy bone, in place of the previously diseased bone, standard recovery and rehabilitation are expected. However, instead of undergoing repeated surgeries to extend the bone, REPIPHYSIS® technology uses an electromagnetic field to lengthen the implant internally.

Physicians are able to monitor the lengthening through fluoroscopy and x-rays to determine the amount of expansion achieved. Children undergo the simple procedure as their body grows, so the number of visits varies with each child.

This expansion procedure is done within a matter of minutes without surgery, and unlike traditional procedures, recovery and rehabilitation are not needed afterwards. Children simply get up and walk out of the doctor's office.

The Expansion: Lengthening In 20 Seconds

The transmission ring is placed around the leg of the child.



An electronic field is transmitted to the implant.



The heat allows the spring and implant expand.



WHAT ARE SURGEONS SAYING?

"The REPIPHYSIS® prosthesis has dramatically changed the way we evaluate the operative options available to young children with tumors (and adults with degenerative disease and significant leg length discrepancies.)"

— **ROSS M. WILKINS, MD** Denver, CO

"The REPIPHYSIS® prosthesis is ideal for the young patient requiring limb-salvage surgery. It solves the problem of limb-length discrepancy. It is a good alternative to multiple limb-lengthening surgeries, amputation or rotationplasty."

— **J. DOMINIC FEMINO, MD** Los Angeles, CO

"The REPIPHYSIS® prosthesis is amazingly simple technology. It offers a limb salvage option to my patients that previously faced amputation. Therefore, the patients, parents, and surgeon are enthusiastic."

— **STEVEN GITELIS, MD** Chicago, IL



Wright Medical Technology, Inc.

5677 Airline Road
Arlington, TN USA 38002
901.867.9971 phone
800.238.7188 toll-free
www.wmt.com

Wright Medical EMEA

Krijgsman 11
1186 DM Amstelveen
The Netherlands
011.31.20.545.0100
www.wmt-emea.com

Surviving Bone Cancer.

Life after
diagnosis



REPIPHYSIS® Expandable Limb Salvage Implant



WHAT IS OSTEOSARCOMA?

The most prevalent of bone cancers, osteosarcoma is particularly common among children because it involves the *growing* ends of a bone. Older adults can get it, too, but most patients are between the ages of 6 and 25. Teenagers are the most likely of all age groups to develop this cancer, and boys are twice as likely as girls to get it. This is likely attributed to bones growing very rapidly during the adolescent years, especially for boys.

Osteosarcoma is generally found in the bones of the arms and legs, with most cases originating around the ends of the long bones that form the knee. If left untreated it can spread to any other part of the body. This is known as *metastasis*. Most osteosarcoma tumors metastasize to the lungs or to other bones. The chances of recovery are significantly decreased once a tumor has spread.

TUMOR LOCATIONS

Bone tumors are rare, with only 3,000 new cases diagnosed each year in the US. As many as 85% of these patients can be treated successfully with removal of the tumor and limb preservation surgery. Although tumors can occur in any bone in the body, they are most frequently found in the long bones of the arms and legs. Generally, they are located around the knee, which is made up of the *distal femur* (lower end of the thigh bone) and the *proximal tibia* (upper end of the lower leg bone). Other common bone tumor locations are the *proximal femur* (upper end of the thigh bone, where the leg joins the hip), the *total femur* (thigh bone), and the *proximal humerus* (upper end of the upper arm bone, where the arm joins the shoulder).

WHAT ARE THE SURGICAL TREATMENT OPTIONS?

Curative and Restorative surgery options include:

Amputation – removal of the affected limb starting above the tumor.

Rotationplasty – removal of the middle of the thigh (femur) through knee to the middle of the shin (tibia & fibula); the lower shin (tibia & fibula) and foot are reattached to the remaining thigh (femur) with the foot pointing backwards.

Osteoarticular Allograft – segment of donor bone, which includes the joint.

Intercalary Allograft – segment of donor bone that does not involve the joint.

Allograft Prosthetic Composite (APC) – segment of donor bone attached to an endoprosthesis.

Endoprosthesis – prosthesis which replaces the removed bone and joint. The REPIPHYSIS® Implant fits into this category -- as a non-invasive, expandable endoprosthesis.

WHAT ARE THE ADVANTAGES OF THE REPIPHYSIS® IMPLANT?

The REPIPHYSIS® Implant offers a number of advantages, in both the short and long term. After the initial surgery, the child will not have to undergo several more traumatic expansion surgeries. A REPIPHYSIS® expansion procedure can be performed in a doctor's office in a matter of minutes, without surgery. During lengthening, the child may experience some discomfort, pain, or a stretching feeling, but these symptoms can be relieved with ice packs. Weeks of recovery and rehabilitation are unnecessary, since the child

xray showing the implanted REPIPHYSIS® Expandable Implant

xray showing bone tumor; osteosarcoma

is generally able to walk out of the doctor's office unassisted. The REPIPHYSIS® Implant is also very durable, meaning that children can continue being children. However, they should refrain from impact sports.

Over 75 REPIPHYSIS® Expandable Prostheses have been implanted by 20 orthopedic oncologists across the United States. Additionally, there have been over 100 implanted in Europe and the Middle East. Approximately 80 expansions have been performed in the US. These children had good to excellent functional results, and they and their families have benefited tremendously from fewer surgeries, fewer hospitalizations, and less time spent in rehabilitation.

WHO CAN RECEIVE THE REPIPHYSIS® IMPLANT?

The REPIPHYSIS® Expandable Implant was designed especially for children whose bones are still growing. The typical recipient has at least 4 centimeters of growth remaining. Girls who receive a REPIPHYSIS® Expandable Implant are usually under 12, while boys are usually under 14. However, REPIPHYSIS® Expandable Implant has been used in children as young as 5 as well as adults. Once the child's bones stop growing, his or her REPIPHYSIS® Expandable Implant will eventually need to be replaced with a non-expandable endoprostheses.

Ask your orthopaedic oncologist today about the REPIPHYSIS® Expandable Implant, or visit www.wmt.com/expandableimplant for more information.

