



Getting straight with orthopaedics – A resource for schools – 2008

Limb reconstruction

For some children or young people, the shape and function of their foot/feet or the length of their leg/s or arm/s may be affected due to congenital conditions or trauma. When this occurs, bones are lengthened, straightened or 'reconstructed' using an external frame. After medical consultation, surgery will be booked in advance so schools can begin planning with the student and family.

Treatment involves the use of metal 'fixators' and orthotic braces that look like a splint or sandal (see below). The child or young person may be in hospital for three to six days. Their pain is managed with medication and decreases naturally over time. When pain and discomfort continue, an individual pain management plan will be developed and modified.

A wheelchair is frequently used in the beginning and for long distances (once the child or young person has started using crutches or a walking frame). Physiotherapy is an integral part of recovery and an individual program will be designed. It is common for children and young people to feel 'down' because their recovery may take between three and 12 months. During this time, the student will attend regular outpatient follow-up visits with the treating team.

External fixators

An external fixator is a device encircling or lying adjacent to the limb that is attached to bones by fine tensioned wires or screws. They are used to treat fractures, lengthen bones and reshape deformed joints. The different types are the:

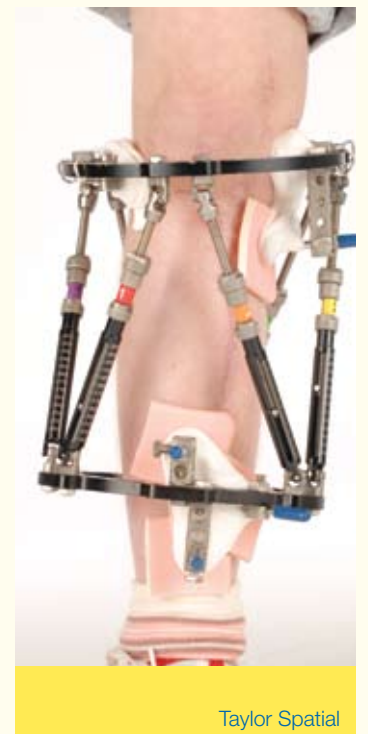
- **Orthofix fixator.** It is used for limb lengthening or connecting the bone and/or joint deformity (similar to the Hoffman external fixator).
- **Ilizarov (or Taylor Spatial) frame.** It consists of stainless steel or carbon fibre rings. These are attached to the bone by screws or tensioned wires that pass through the muscle and bone to the other side of the limb. It is used for reconstruction and repairing traumatic injuries.

Frequent follow-up is required for the duration of treatment to monitor progress or healing. Initially, most children or young people attend the hospital's outpatient clinic fortnightly where the doctor, the nurse and the physiotherapist will see them.

The child or young person may experience pain, fatigue and concentration difficulties, particularly in the early stages following surgery, but generally these dissipate over time.



Ilizarov



Taylor Spatial

Physiotherapy, an essential part of treatment for most children or young people with external fixators, will generally start in the first days following surgery. The physiotherapist will provide the child or young person with exercises to be performed in hospital and when they go home. These can be effectively integrated into student's daily routine at school (for example, during physical education lessons).

Implications for education

These should be read in conjunction with the General advice for school inclusion section of *Getting straight with orthopaedics: A resource for schools, 2008*.

- **Appearance**

The appearance of the external fixator can be daunting but education can reduce anxiety. Therefore, it is useful to share information by talking with students and teachers before your student returns to school. Your student may be emotionally affected by their change in body image and will benefit from a sensitive, reassuring approach.

- **Pain issues**

If accidentally knocked, your student may experience pain but this may be temporary. Please follow normal school procedures for accidents and treat them as you would other students. If the pain does not settle, please contact their family.

- **Physiotherapy**

Each student will receive an individual physiotherapy exercise program and will be reviewed regularly by The Royal Children's Hospital Melbourne (RCH) or community physiotherapist. Please consult the family regarding the parts of the physiotherapy program (such as simple stretches) that can be integrated into the school routine. This may include recommendations for positioning the limb after surgery. For example, some students may need to have their legs elevated on a chair and pillow in the classroom.

- **At school**

- Access issues will need to be considered, especially where steps, stairs and slopes need to be negotiated.
- Assistance may be required with some self-care tasks (for example, toileting).
- It may be difficult to wear school uniform over the plasters unless the clothing has been adapted.
- Your student must not participate in school sport unless parental permission has been provided, based on recommendations by the treating team.

- **School absences**

At the start, outpatient visits are quite intensive and frequent, and will mean loss of time from school while your student is recovering. This can add up to a significant proportion of time over the school year and may impact on learning. Positive planning for school absences may improve your student's ability to manage their learning.

