RETURN TO SCHOOL FOR CHILDREN WITH CASTS: RESULTS OF A PARENT SURVEY
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Purpose:
Cast immobilization is commonly used to treat fractures in children, and can be associated with significant periods of missed school. The purpose of this study is to investigate factors affecting return to school for children in casts or other immobilization.

Methods:
A parent survey was conducted of consecutive school-age children treated with cast or other immobilization in an urban fracture clinic during the 2011 school year. Included were school-age children, treated with a cast or other immobilization for an acute fracture, with or without surgical treatment. Excluded were polytrauma and developmental delay. The survey consisted of a short written survey administered during or after routine clinic visits for fracture care. Surveys were available in English and Spanish. Institutional review board approval was obtained.

Data was collected for patient age, gender, grade level, type of fracture, type of cast or other treatment, use of assistive devices, weightbearing status, type of school (public or private), number of floors in school building, availability of an elevator for student use, and wheelchair accessibility. Outcome data was collected for school absence, missed days of school, and missed parent work. Reasons for school nonattendance were elicited via multiple choice (parent choice, physician instructions, pain and medications, transportation, bathroom or toileting issues, mobility limitations, school forms, or other school restriction) and free response. Data was also collected for any effect of school absence on school performance, and whether home tutoring was received.

Data analysis was performed with Microsoft Excel (Redmond, WA) and SPSS (Chicago, IL). Means for continuous data for two groups were compared with the unpaired 2-sided Student’s t-test and for multiple groups with one-way ANOVA. Binomial data was compared with Fischer’s exact test. Statistical significant was accepted at p < 0.05.

Results:
Eight-three surveys were collected. There were 42 males and 41 females. Average age was 10.4 ± 3.5 years (range 5.2-18.4). Average grade level was 5.1 ± 3.5 years (range K-12). Most (87%) attended public schools, and the remainder (13%) attended private schools. Most schools had multiple floors (84%), but only 34% had an elevator available. Only 57% were wheelchair accessible (Table 1). There were 44 upper extremity (UE) fractures and 39 lower extremity (LE) fractures.

Most children (76%) missed school due to their injury, and nonattendance was significantly more likely for LE injuries (90%) than for UE injuries (65%) (p = 0.0077). Children who missed school were absent on average 9.6 ± 18 days. Children with LE injuries missed
significantly more school (14.9 ± 16.4 days) than UE injuries (3.0 ± 1.9 days) (p = 0.0075). Nearly half (49%) of parents missed time from work (Table 2).

For UE injuries, there was no significant effect on the amount of missed school based on type of injury (p = 0.072) or type of treatment (p = 0.32). For LE injuries, there were significant effects on missed school noted for the type of injury (p < 0.0001) and type of cast (p = 0.0013), with the most school missed for femur fractures (79.0 days) and those treated in spica casts (91.0 days) (Table 3). On subgroup analysis, children who were immobilized above the knee missed more school (27.4 ± 32.5 days) than below the knee (4.8 ± 4.0 days) (p = 0.022). Furthermore, more school was missed by those needing a wheelchair (41.7 days), walker (33.4 days), or crutches (6.8 days) than those who did not need an assistive device (2.3 days) (p < 0.0001). Age, grade level, and weightbearing status had no significant effect on missed school for LE injuries.

Absentees enrolled in public schools missed more school (14.6 ± 23.3 days) than those enrolled in private schools (3.0 ± 2.4 days) (p = 0.013). For LE injuries, children attending a school without an elevator missed significantly more school (20.8 ± 28.6 days) than those with an elevator (4.6 ± 3.5 days) (p = 0.023). No significant effect on missed school was seen for number of floors in the school building, wheelchair accessibility, and mode of transportation to school with LE injuries.

The most common reasons for missed school cited by parents were pain (37%), parent choice (27%), physician instructions (27%), and mobility limitations (21%). Transportation (6%) and bathroom/toileting issues (5%) were cited rarely. No parent indicated that school restrictions were a specific reason for nonattendance (Table 4).

Falling behind in school was more likely for children who missed more than one week (69%) that for those missing less than one week (19%) (P = 0.0012). Home tutoring was only received by 35% of children who were absent for more than one week. Free response comments related to home tutoring indicated that several parents were dissatisfied with the availability of home tutoring services.

Conclusions:

Cast immobilization for acute orthopaedic injuries is associated with extended periods of school absence for children with lower extremity injuries, especially those immobilized above the knee. The amount of school missed for these children, nearly 5 weeks on average, appears to have significant academic consequences and represents a significant psychosocial disruption for the child and family. Return to school after an acute musculoskeletal injury is affected by the specific injury and cast treatment, school factors, and parent choice. Factors under the physician’s control include the type of cast treatment, pain management regimen, and instructions to parents. Understanding factors these factors can guide physicians, parents, and schools in facilitating the transition of children back to normal life after acute musculoskeletal injuries.