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**Effects of pre-injury nutritional status on post-burn growth in prepubescent Children**

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**Article Information ABSTRACT**

**Article Type: Research Article**

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Malnutrition is a major problem in the developing world and has disastrous effects on a child’s health and ultimate growth. This study was undertaken to elucidate a possible contributing factor to the altered growth observed and to assess the impact of preinjury malnutrition on growth delay in severely burned children. A retrospective chart review for 89 patients with burn admission dates from 2002 to 2013 at Shriners Hospital for Children, Galveston was done. Only pre-pubertal children were enrolled. These patients were followed in the outpatient clinics for 2 years, and their height, weight, and bone age data were collected at 6-month intervals post discharge. All of the patients were given the standard of care at Shriners Hospital with nutritional supplementation and support. This data was used to determine growth velocities at admission, discharge and each follow-up visit. Weights were also collected on post-surgical day 5 (dry weight) and these were used to calculate the Body Mass Index (BMI) for the patients. These were plotted on standardized Chi Squared analysis and t-tests were used to compare the information for any statistical significance. Of the original 89 patients, 26 (29%) patients were lost to follow-up. Sixty-three patients were assessed via anthropometric standards for malnutrition post-burn injury.Although malnutrition is a significant problem in the admissions to any burn unit, preinjury malnutrition in pre pubertal children does not have any detrimental effects on the ability of burns survivors to gain normal growth parameters when appropriate nutritional supplementation is achieved

**Keywords:** Pre pubertal growth, pediatric burns, delayed growth, growth velocities, pre injury malnutrition, dry weight.

**Introduction**

Severe malnutrition adversely affects wound healing and growth in children.[i](#_bookmark0) The earlier in life that malnutrition occurs, and the more severe and protracted the malnourished state is, the more likely it is that the adult stature of the child will be negatively impacted (Pandey et al., 2022; Usman Abid et al., 2023).

**Methodology:**

An Institutional Review Board approval was obtained to conduct a retrospective chart review for 89 patients with burn admission dates from 2002 to 2013 at Shriners Hospital for Children, Galveston. These patients were followed in the outpatient clinics and their height, weight, and bone age data was collected at 6-month intervals from the date of discharge. The patients were followed for a total of two years post injury.

**Results:**

Adherence to a strict criterion for age and time between burn and admission, limited the number of patients that could be assessed in this study. Many patients admitted to our center have already been given primary treatment elsewhere prior to transfer to our burn unit.

**Table 1: Heading of table**

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**Discussion:**

Malnutrition has long term detrimental effects on childhood development. Among hospitalized children, malnutrition negatively influences the response to therapy and prolongs the time till discharge. When a nutritionally deficient body experiences the added stress of a significant injury like burns, delayed or retarded growth is a likely outcome.

In conclusion, although malnutrition is a significant problem in the admissions to any burn unit, preinjury malnutrition in children does not have any long-term detrimental effects on the ability of burns survivors to achieve normal growth parameters when adequate nutritional supplementation is achieved.

**Author contributions**: All authors equally contributed to this study

**Competing Interests**: The author declares that this work has no competing interests.

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**Data Availability Statement**: The associated data is available upon request from the corresponding author.

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