Background and purpose In the last decade, intramedullary limb lengthening has become a viable alternative to traditional external systems. We retrospectively analyzed the use of an intramedullary motorized nail (Fitbone) in a consecutive series of 32 patients. Patients and methods During the period September 2006 to December 2008, 32 consecutive patients with a median age of 17 (IQR: 15-19) years were treated with a fully implantable, motorized intramedullary lengthening device (Fitbone). The median leg length discrepancy was 35 (IQR: 30-44) mm at the femur (n = 21) and 28 (IQR: 25-30) mm at the tibia (n = 11). Results Leg lengthening was successful in 30 of 32 cases, with no residual relevant discrepancy (± 5 mm). No intraoperative complications were observed. The consolidation index was significantly different (p = 0.04) between femoral lengthening (mean 35 days/cm) and tibial lengthening (mean 48 days/cm) but did not depend on age older/younger than 16 or previous operations at the affected site. 3 problems, 3 obstacles, and 4 complications (3 minor, 1 major) were encountered in 8 patients, 5 of which were implant-associated.

Interpretation This technique even allows correction in patients with multiplanar deformities. Compared to external devices, intramedullary systems provide comfort and reduce complication rates, give improved cosmetic results, and lead to fast rehabilitation since percutaneous, transmuscular fixation is prevented. This results in reasonable overall
treatment costs despite the relatively high costs of implants.

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