

# **From History to Clinical Practice: The Journey of Cosmetic Bone Lengthening: A Comprehensive Literature Review**

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## **ABSTRACT**

Cosmetic bone lengthening has evolved significantly over the years, addressing skeletal deformities and dwarfism resulting from various conditions, and even for aesthetic purposes. This literature review provides an in-depth overview of the historical background, fundamentals, challenges, outcomes, complications, and clinical applications of cosmetic bone lengthening. The practice dates back to the early 1900s with innovations by pioneers like Alessandro Codivilla and later, Professor Gavril A. Ilizarov, who developed the Ilizarov technique. The fundamental principle of distraction osteogenesis underpins these procedures, involving gradual bone elongation to promote new bone formation. Various techniques, including the Ilizarov fixator, Lengthening Over Nail (LON), and implantable lengthening nails, have been utilized, each with specific indications, outcomes, and complications. Studies have reported high patient satisfaction and significant functional improvements, although complications such as infections, nerve injuries, and joint stiffness are common but generally manageable. Ethical considerations and the need for psychological assessment before surgery are emphasized due to the profound impact on patients' lives. Despite the risks, cosmetic bone lengthening has shown favorable results in improving height, self-esteem, and quality of life, suggesting its potential benefits outweigh the challenges when performed with appropriate care and ethical considerations.

**Keywords:** Bone Lengthening; Bone surgery; Cosmetic; Limb lengthening; Orthopedics; Review

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