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CORR Insights

# *CORR* Insights®: Cosmetic Lower Limb Lengthening by Ilizarov Apparatus: What are the Risks?

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## Where Are We Now?

The current study by Novikov and colleagues documents the short-term outcomes of 131 patients who underwent lengthening of the lower extremities for cosmetic purposes. The authors have carefully detailed their preoperative evaluation of patients, the techniques they used, the complications the patients experienced, and the lengthening they achieved. In so doing, they have documented what can be achieved with a selected group of patients, treated by highly experienced physicians and therapists, in an in-patient setting dedicated to the Ilizarov technique.

This article is bound to be controversial, as none of the patients they treated would be considered to have clear indications for this complicated procedure. Orthopaedic surgeons shy away from surgery that risks loss of function in exchange for cosmesis, and insurance carriers in the United States and elsewhere are unlikely to pay for such procedures.

Ultimately, however, in a free society, the choice of whether to proceed is the prerogative of the patient. Plastic surgery is available to any of us, provided we are able to pay for it. In this sense, limb-lengthening is no different than any other plastic surgical procedure. The obligation of the surgeon is to ascertain that (1) the patient has been fully informed of all the risks and benefits of the procedure and is competent to make a rational choice, (2) the surgeon possesses the necessary competence to guide the patient to a successful outcome, and (3) the setting in which the procedure is done is the right one.

## Where Do We Need To Go?

In my view, three aspects of the treatment provided by the authors deserves special emphasis. First, Novikov and colleagues carefully selected their patients. Every patient had a full psychiatric evaluation prior to lengthening, and the results of this evaluation were used to determine whether lengthening would be offered. The authors do not tell us how many patients were rejected following this evaluation, but do reference several patients who persisted in seeking lengthening after having been rejected. In my view, this careful selection

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should be mandatory before offering this technique. Future studies might specifically evaluate the most common reasons for rejection and the validity of their criteria for acceptance.

Second, their patients were extensively counseled prior to agreeing to lengthening. Proper preoperative counseling is essential both for optimal patient outcome and for the preservation of the surgeon's sanity. For a complicated procedure such as this, a single counseling session of limited time would never be adequate. During this phase, the patient also counsels the surgeon, who must know the patient's exact motivation in order to guide the progress of lengthening. While the physician's counseling of the patient has been well explored, the reverse process of communication from the patient to the physician has not. This process would be worthy of further study.

Third, the authors note in their discussion that their patients' evaluations were not as complete as they might have been. We concur. Patients simply were asked whether they were satisfied and would undergo the same procedure again. As a result, we do not know whether their lives were really improved by the procedure. Did they gain a permanent improvement of self-esteem? Were they able to achieve improved sports performance if that was their goal? Longer followup with use of a validated outcome instrument will be necessary to answer these important questions.

## How Do We Get There?

Even in their ideal environment, the authors report numerous complications requiring intervention, including deep pin-tract infections, osteomyelitis, ankle equinus, knee flexion contractures, knee subluxations, peroneal nerve palsies, poor regenerate, deformed regenerate, and premature consolidation of the fibula. The authors were able to handle most of these complications with well-chosen interventions. In a setting with less expertise, less control over therapy, and less daily contact with the patient — as might be seen in an outpatient setting, for example — these complications would certainly be both more frequent and less likely to be transient. We urge, therefore, that these procedures be done only in institutions with exceptional expertise and experience in limb lengthening. The results obtained by these authors need to be validated by parallel studies in other institutions. When this is done, we urge that these future researchers look beyond the simple length obtained. Future researchers should more carefully evaluate both limb function and the specific gains to the patients, in terms of self-image and the accomplishment of personal goals, using validated outcome instruments. In the meantime, do not try this at home.