

ANTEGRADE VS. RETROGRADE FEMORAL NAILING

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Antegrade – pro

1. Allows for reconstruction option if needed.
2. Better fixation of proximal fractures
3. Easier maintenance of length and rotation, esp if skeletal traction is used

Antegrade – con

1. Potentially disastrous in neck shaft fracture
2. Troch entry creates greater hoop stress and risk of proximal blowout
3. Poorer control of distal third fractures
4. Hip pain/abductor pain

Retrograde – pro

1. Ideal for obese patient
2. Ideal for floating knee or associated patella fracture
3. Better stability/fixation of distal fractures, esp with modern implants

Retrograde – con

1. Articular damage – technique dependent
2. Reamings in the knee – open fx an issue??
3. Knee pain – real??
4. More difficult to maintain length and rotation in comminuted cases – need more help

TECHNIQUE IS IMPORTANT IN BOTH OPTIONS

References:

Retrograde Versus Antegrade Intramedullary Nailing of Gunshot Diaphyseal Femur Fractures.

[Dougherty PJ](#), [Gherebeh P](#), [Zekaj M](#), [Sethi S](#), [Oliphant B](#), [Vaidya R](#).

[Clin Orthop Relat Res](#). 2013 May 21.

CONCLUSIONS:

With the numbers available, immediate retrograde nailing appears as safe and effective as antegrade nailing for gunshot femur fractures. Immediate retrograde nailing is as safe as antegrade nailing for gunshot femur fractures.

Retrograde versus antegrade nailing of femoral shaft fractures.

[Ricci WM](#), [Bellabarba C](#), [Evanoff B](#), [Herscovici D](#), [DiPasquale T](#), [Sanders R](#).

[J Orthop Trauma](#). 2001 Mar-Apr;15(3):161-9.

CONCLUSIONS:

Retrograde and antegrade nailing techniques provided similar results in union and malunion rates. There were more complications related to the knee after retrograde nailing and more complications related to the hip after antegrade nailing.

Prospective comparison of retrograde and antegrade femoral intramedullary nailing.

[Ostrum RF](#), [Agarwal A](#), [Lakatos R](#), [Poka A](#).

[J Orthop Trauma](#). 2000 Sep-Oct;14(7):496-501.

CONCLUSIONS:

Both antegrade and retrograde nailing yielded high union rates. Each insertion technique has its own advantages and disadvantages. The two insertion modes appear to be relatively equal for the treatment of femoral shaft fractures.

Results of femoral intramedullary nailing in patients who are obese versus those who are not obese: a prospective multicenter comparison study.

[Tucker MC](#), [Schwappach JR](#), [Leighton RK](#), [Coupe K](#), [Ricci WM](#).

[J Orthop Trauma](#). 2007 Sep;21(8):523-9.

CONCLUSIONS:

This study provides evidence, in the form of decreased operative and radiation exposure times, to support the use of retrograde nailing technique for the treatment of femoral shaft fractures in patients who are obese. Also, antegrade nailing was found to require significantly more operative and radiation exposure time in the patient who is obese as opposed to the patients who is not obese. Although having similar baseline functional scores, patients who are obese recovered at a slower rate and more incompletely than patients who are not obese

Comparison of knee function after antegrade and retrograde intramedullary nailing for diaphyseal femoral fractures: results of isokinetic evaluation.

[Daglar B](#), [Gungor E](#), [Delialioglu OM](#), [Karakus D](#), [Ersoz M](#), [Tasbas BA](#), [Bayrakci K](#), [Gunel U](#).

[J Orthop Trauma](#). 2009 Oct;23(9):640-4.

CONCLUSIONS:

Knee function seems to have similar clinical results after either antegrade or retrograde nail insertion for femoral diaphyseal fractures when knee range of motion, Lysholm Scores, and isokinetic knee evaluation are considered as outcome measures. With increasing patient age, a decrease in knee functioning should be anticipated in patients with femoral fractures treated with intramedullary nails regardless of technique