

| Study                                                                                                                                                                | Functional Outcome |    |       |                                   |                                    |                                     |                     | Safety Outcome         |                     |                                                                                                                               |            |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----|-------|-----------------------------------|------------------------------------|-------------------------------------|---------------------|------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------|------------|--|
| Authors(Yr)                                                                                                                                                          | Intervention       | N  | Month | VAS:<br>mean±SD or<br>median(IQR) | OMAS:<br>mean±SD or<br>median(IQR) | AOFAS:<br>mean±SD or<br>median(IQR) | Kitaoka:<br>mean±SD | Grimby:<br>median(IQR) | Complications:N(%)  | Details                                                                                                                       | Bony union |  |
| Asloum et al.(2014)                                                                                                                                                  | FINF               | 28 | 12    |                                   | 97.32±3.72                         |                                     | 96.07±4.31          |                        | 2 (7.14%) total 28  | 2 Algodystrophy                                                                                                               | 100%       |  |
|                                                                                                                                                                      | PF                 | 32 | 12    |                                   | 82.66±15.24                        |                                     | 82.09±21.06         |                        | 18(56.25%) total 32 | 9 skin necrosis<br>2 sepsis<br>2 second displacement<br>5 algodystrophy                                                       | 93.75%     |  |
| White et al.(2016)                                                                                                                                                   | FINF               | 50 | 3     |                                   | 51.9±15.2                          |                                     |                     |                        | 6(12%)Total 50      | 5 removals of locking screw<br>1 malunion not requiring revision surgery                                                      | 98%        |  |
|                                                                                                                                                                      |                    | 50 | 6     |                                   | 58.8±16.1                          |                                     |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 50 | 12    |                                   | 62.5±17.6                          |                                     |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      | PF                 | 46 | 3     |                                   | 47.4±20.4                          |                                     |                     |                        | 18(36%) Total 50    | 8 superficial wound infections<br>2 re-operations for dehiscence and infection<br>6 painful metalwork requiring removal       | 98%        |  |
|                                                                                                                                                                      |                    | 44 | 6     |                                   | 57.5±20.8                          |                                     |                     |                        |                     | 1 superficial peroneal nerve division<br>1 loss of reduction resulting in malunion not requiring revision surgery             |            |  |
| Badenhorst et al.(2020)                                                                                                                                              | FINF               | 23 | 3     |                                   | 85(65-95)                          |                                     |                     | 2(2-2.5)               | 0 (0) total 29      |                                                                                                                               | 100%       |  |
|                                                                                                                                                                      |                    | 25 | 6     |                                   | 90(85-100)                         |                                     |                     | 2(2-2)                 |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 29 | 12    |                                   | 100(90-100)                        |                                     |                     | 2(2-2)                 |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      | PF                 | 18 | 3     |                                   | 70(45-90)                          |                                     |                     | 2(2-2)                 | 1(4.5%) total 22    | 1 infection                                                                                                                   | 100%       |  |
|                                                                                                                                                                      |                    | 19 | 6     |                                   | 100(75-100)                        |                                     |                     | 2(2-3)                 |                     |                                                                                                                               |            |  |
| Kho et al. (2020)                                                                                                                                                    | FINF               | 22 | 12    |                                   | 100(90-100)                        |                                     |                     | 2(2-2)                 |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 30 | 3     |                                   | 63.2±19.3                          | 76.9±13                             |                     |                        | 4(13.3%) total 30   | 1 wound infection<br>1 hardware failure<br>2 post-traumatic arthritis                                                         | 100%       |  |
|                                                                                                                                                                      |                    | 30 | 6     |                                   | 77.7±18.7                          | 83.5±11.7                           |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 30 | 9     |                                   | 88.2±14.1                          | 90.5±10.3                           |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      | PF                 | 30 | 12    |                                   | 94.3±9.7                           | 95.6±7.3                            |                     |                        | 10 (32.3%) total 31 | 4 wound infection<br>2 hardware failure<br>2 post-traumatic arthritis<br>3 nerve injury                                       | 100%       |  |
|                                                                                                                                                                      |                    | 31 | 3     |                                   | 52.9±13.2                          | 62±12                               |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 31 | 6     |                                   | 71±12.9                            | 77.2±9.7                            |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 31 | 9     |                                   | 84.8±12.5                          | 88.5±9.5                            |                     |                        |                     |                                                                                                                               |            |  |
| White et al.(2021)                                                                                                                                                   | FINF               | 31 | 12    |                                   | 93.5±10.7                          | 95.3±7.3                            |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 59 | 3     |                                   | 54.4±20.9                          |                                     |                     |                        | 18 (28.6%) total 63 | 12 removal of metalwork<br>4 superficial infection<br>1 Loss of reduction                                                     | 100%       |  |
|                                                                                                                                                                      |                    | 57 | 6     |                                   | 70.2±21.1                          |                                     |                     |                        |                     | 1 pulmonary embolus                                                                                                           |            |  |
|                                                                                                                                                                      |                    | 56 | 12    |                                   | 78.4±17.7                          |                                     |                     |                        |                     | 6 removal of metalwork                                                                                                        | 100%       |  |
|                                                                                                                                                                      | PF                 | 48 | 24    |                                   | 86.6±17.6                          |                                     |                     |                        | 18 (29%) total 62   | 5 superficial infection<br>2 deep infection<br>1 Loss of reduction<br>1 pulmonary embolus<br>1 chronic regional pain syndrome |            |  |
|                                                                                                                                                                      |                    | 52 | 3     |                                   | 55.3±19.5                          |                                     |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 53 | 6     |                                   | 70.1±21.9                          |                                     |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 54 | 12    |                                   | 80.2±20.2                          |                                     |                     |                        |                     |                                                                                                                               |            |  |
| Stake et al.(2023)                                                                                                                                                   | FINF               | 49 | 6     | 1(0-3)                            | 65(48-88)                          | 83(71-95)                           |                     |                        | 14(27%) total 51    | 1 superficial infection<br>1 deep infection                                                                                   | 96%        |  |
|                                                                                                                                                                      |                    | 45 | 12    | 0.8(0-2.3)                        | 85(60-95)                          | 87(77-98)                           |                     |                        |                     | 6 symptomatic hardware<br>4 failure of fixation                                                                               |            |  |
|                                                                                                                                                                      |                    | 39 | 24    | 0(0-1)                            | 85(70-100)                         | 90(82-100)                          |                     |                        |                     | 2 symptomatic nonunion<br>2 symptomatic infection                                                                             | 100%       |  |
|                                                                                                                                                                      | PF                 | 55 | 6     | 0.5(0-2.3)                        | 75(60-85)                          | 90(82-97)                           |                     |                        | 6(11%) total 57     | 1 deep infection<br>3 symptomatic hardware                                                                                    |            |  |
|                                                                                                                                                                      |                    | 51 | 12    | 0(0-1)                            | 90(69-100)                         | 90(80-100)                          |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 46 | 24    | 0(0-0)                            | 90(80-100)                         | 95(87-100)                          |                     |                        |                     |                                                                                                                               |            |  |
| Chen et al. (2024)                                                                                                                                                   | FINF               | 42 | 3     | 1.31±0.96                         |                                    | 78.96±9.14                          |                     |                        | 4 (9.5%) total 42   | 3 algodystrophy<br>1 hardware-related pain                                                                                    | 100%       |  |
|                                                                                                                                                                      |                    | 42 | 6     | 1.06±0.84                         |                                    | 87.35±8.87                          |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      |                    | 42 | 12    | 0.75±0.67                         |                                    | 91.62±10.85                         |                     |                        |                     |                                                                                                                               |            |  |
|                                                                                                                                                                      | PF                 | 39 | 3     | 1.42±0.85                         |                                    | 80.65±10.03                         |                     |                        | 12 (30.8%) total 39 | 2 wound infection<br>2 second displacement                                                                                    | 100%       |  |
|                                                                                                                                                                      |                    | 39 | 6     | 1.17±0.73                         |                                    | 89.11±9.69                          |                     |                        |                     | 5 algodystrophy<br>3 hardware-related pain                                                                                    |            |  |
|                                                                                                                                                                      |                    | 39 | 12    | 0.71±0.49                         |                                    | 92.36±11.72                         |                     |                        |                     |                                                                                                                               |            |  |
| SD,standard difference, IQR interquartile ranges; AOFAS American Orthopaedic Foot and Ankle Society ; FINF, fibular intramedullary nail fixation; PF, plate fixation |                    |    |       |                                   |                                    |                                     |                     |                        |                     |                                                                                                                               |            |  |

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