

# Howell ACL System

Howell™ 65° Tibial Guide | EZLoc™ Femoral Fixation Device | WasherLoc™ Tibial Fixation Device | Graft Choice

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## Introduction

The Howell™ ACL system is a research-proven integration of a postoperative rehabilitation protocol that allows the patient to rapidly regain motion and function without a change in anterior laxity. The surgical technique relies on anatomic transtibial tunnel placement, fixation methods, and graft choice.<sup>25</sup> A recent clinical study of the Howell ACL System showed that anterior laxity increased by 1mm from the day of surgery.<sup>25</sup>

## Rehabilitation Process

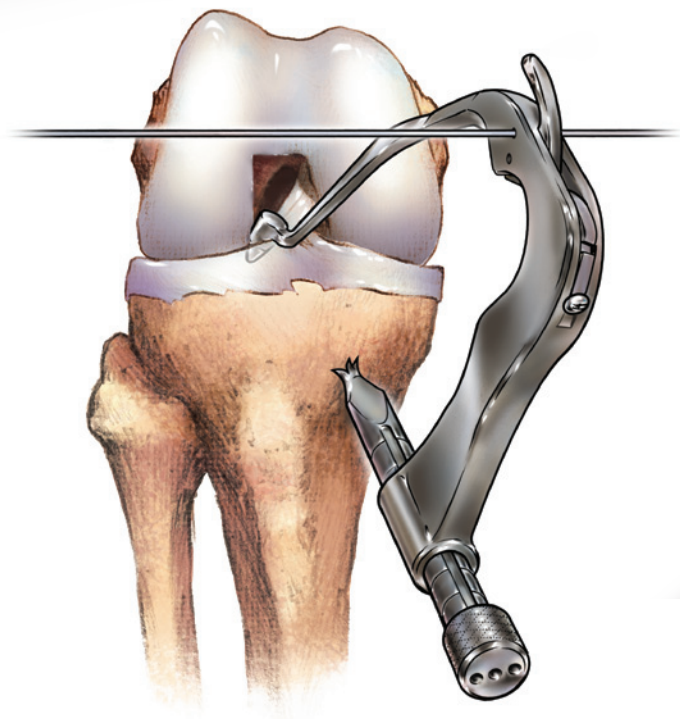
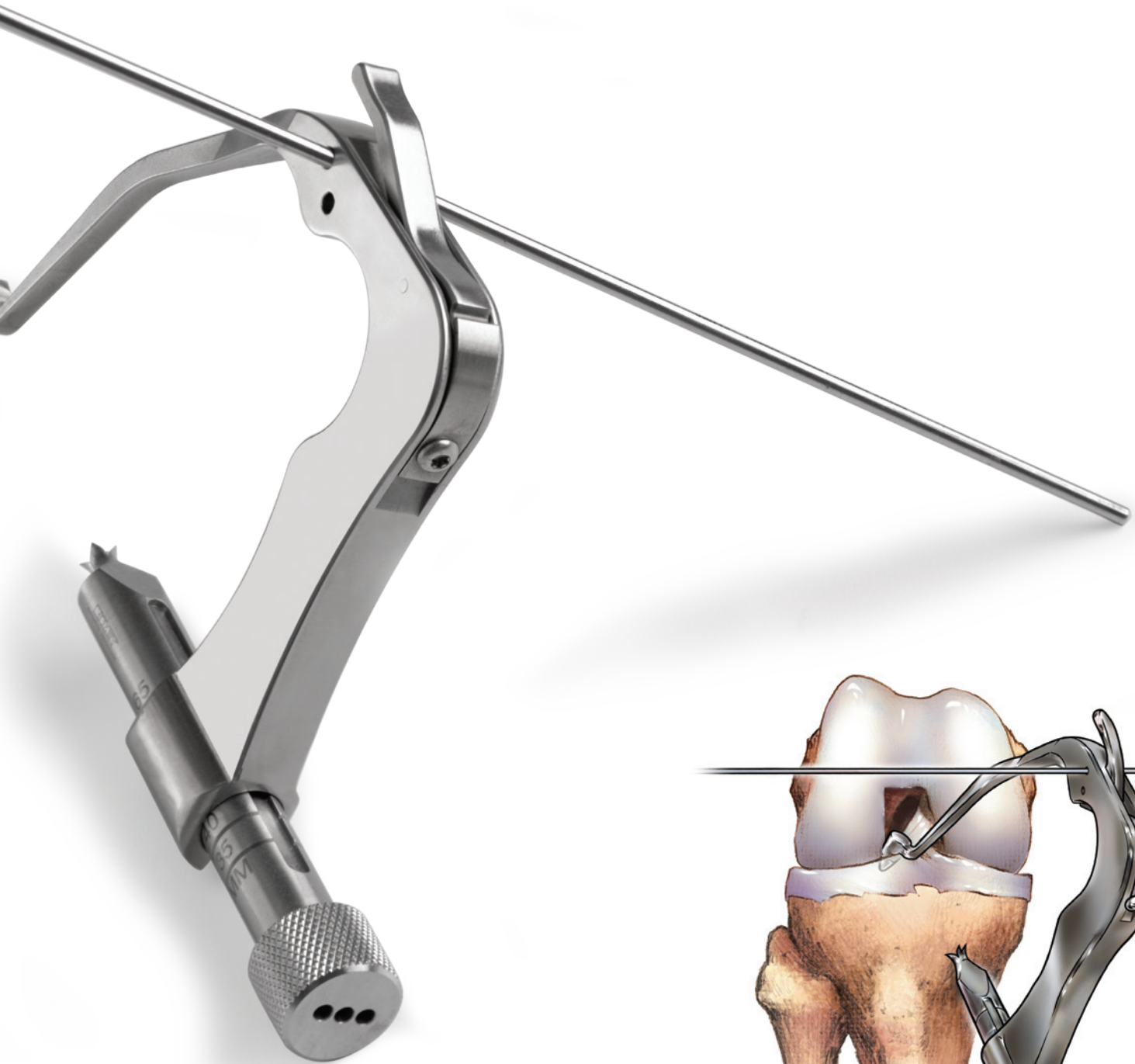
The Howell™ ACL System has allowed recreational and highly skilled athletes to successfully regain motion and reach acceptable rehabilitation goals in the first three months after surgery with either a brace-free, self-administered program or a limited number of purposeful physical therapy education sessions.<sup>5,14,25</sup> The use of a self-administered program or a limited number of physical therapy sessions allows patients more flexibility when integrating the necessary postoperative rehabilitation into their daily activities.<sup>4,25</sup>



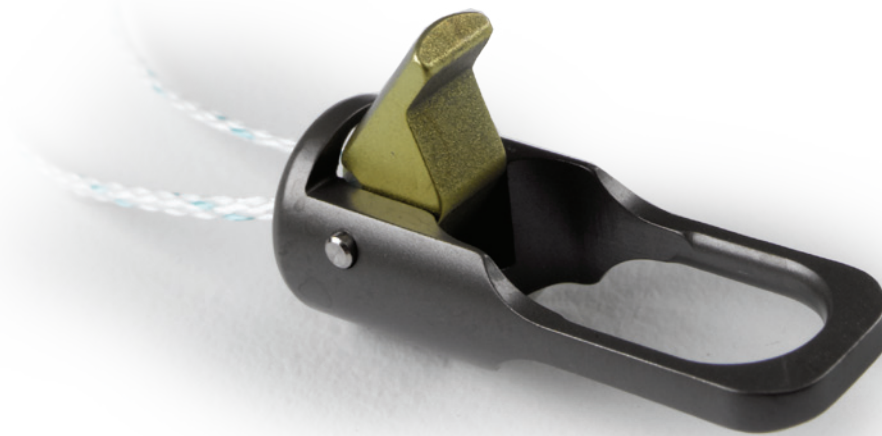
## Anatomic Transtibial Tunnel Technique

In vitro and in vivo studies have shown that the anatomic transtibial tunnel technique places the femoral tunnel without roof and PCL impingement and matches the tension of the native ACL, which are essential for restoring full function and stability.<sup>1, 8, 10, 11, 13, 14, 16, 23, 27</sup> The key step is the use of the Howell™ 65° Tibial Guide to anatomically place the femoral tunnel through the tibial tunnel so that the following conditions are simultaneously met:

- Minimize an increase in anterior laxity caused by stretch-out of the ACL graft from impinging against the PCL when flexing the knee.<sup>3, 10, 23</sup>
- Minimize an increase in anterior laxity caused by stretch-out of the ACL graft from impinging against the intercondylar roof when extending the knee.<sup>8, 13, 14</sup>
- Reduce the tension in the graft throughout the range of motion.<sup>16, 23</sup>
- Avoid potential complications from placing the femoral tunnel through the anteromedial portal, which can include loss of fixation from purchasing soft cancellous-bone, impaired tendon-tunnel healing because of short tunnels, prominent painful hardware from deploying fixation device in soft tissue, and posterior backwall blowout.

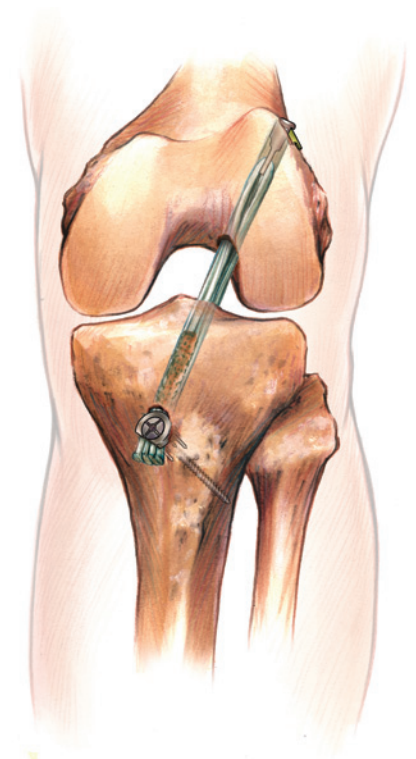


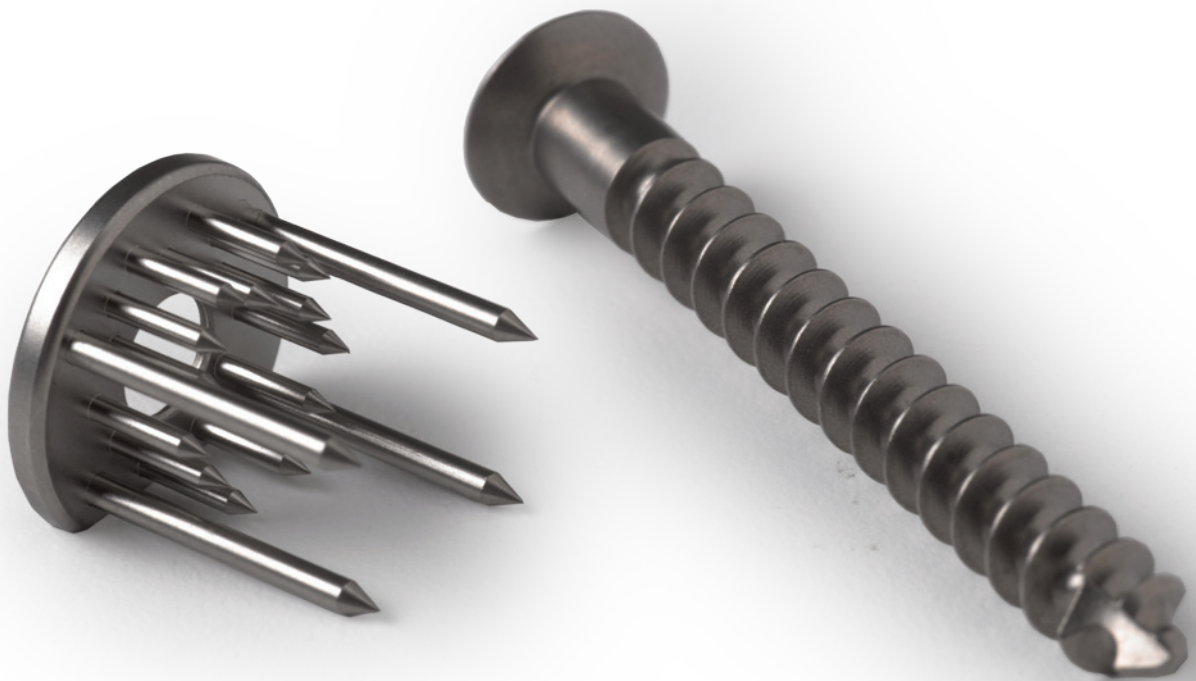
# EZLoc™ Femoral Fixation Device and WasherLoc™ Tibial Fixation Device



## Fixation Methods

The use of slippage resistant fixation methods that provide for tendon-tunnel healing, and work equally well in soft and hard cancellous bone<sup>6, 12, 19-21, 24</sup> are essential to optimally rehabilitate knee and recover motion and function rapidly. By fixing the graft in cortical bone at the end of the tunnel, both the EZLoc™ and WasherLoc™ Fixation Devices and bone dowel are slippage resistant, provide high stiffness and allow for circumferential tendon-tunnel healing,<sup>21, 24</sup> reduce tunnel widening,<sup>21</sup> maintain stability in the face of the obligatory tension loss in the graft<sup>6</sup> and lower tension in the graft during open-chain exercise.<sup>16, 17</sup>





# Graft Choice

## Graft Choice

With the use of the Howell™ ACL System, autogenous double-looped semitendinosus and gracilis hamstring graft and the aseptically harvested, fresh-frozen, non-irradiated, non-chemically treated single-looped tibialis allograft, patients have been shown to maintain stability with a brace-free, rehabilitation program that restores motion and function.<sup>9, 14, 15, 25</sup> These grafts are better than bone-patellar tendon-bone graft because they are stronger and stiffer<sup>2,7</sup> while causing less harvest morbidity and less long-term radiographic osteoarthritis.<sup>22</sup>



*Surgical protocols, patient education pamphlets and patient rehabilitation information are available for the Howell ACL System.*

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