

# Triathlon<sup>®</sup> Knee System

Triathlon and the single radius are designed to work with the patient's body. Studies have shown that Triathlon and the single radius offer:

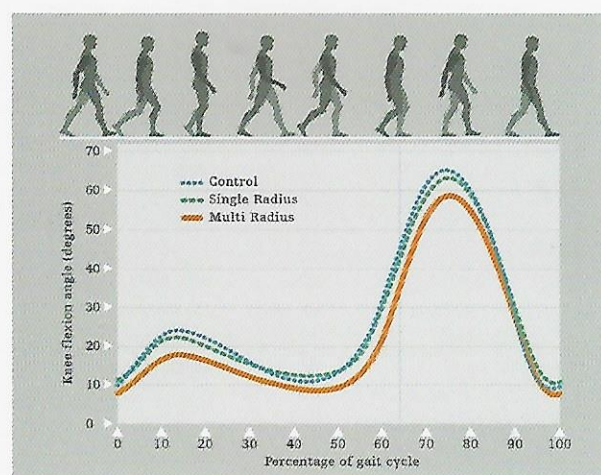
- Stability<sup>1-4</sup>
- Satisfaction<sup>5</sup>
- Survivorship<sup>7-10</sup>

## Stability

The Triathlon single radius is designed to restore the knee's single center of rotation during active flexion, where most motion occurs.<sup>19,20</sup> This allows for constant ligament tension and stability in flexion.<sup>1-4</sup>

## Normal gait patterns

In a gait investigation study, Triathlon patients exhibited gait that closely mimicked that of healthy control subjects. However, the multi radius knee differed from controls in important knee kinetic and kinematic properties.<sup>3</sup>



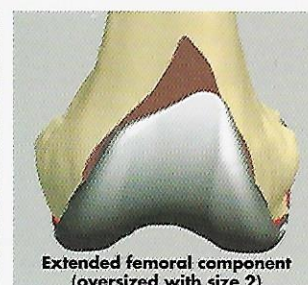
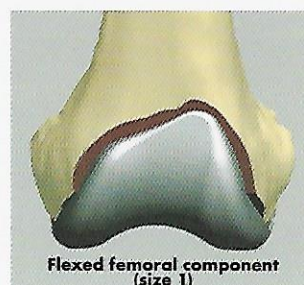
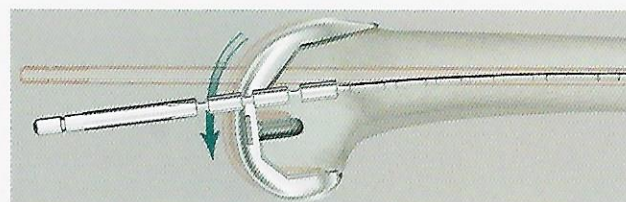
## PS kinematics

The Triathlon PS femur is designed to engage the post of the tibial insert at approximately 45°, where natural PCL loading occurs.<sup>15</sup>



## Fit and function

The Triathlon FlexRod aids in placement of the femoral component to match the individual patient anatomy. The FlexRod has been shown to allow less medial-lateral overhang of the femoral component, and improved Knee Society Scores compared to the rigid rod.<sup>6</sup>



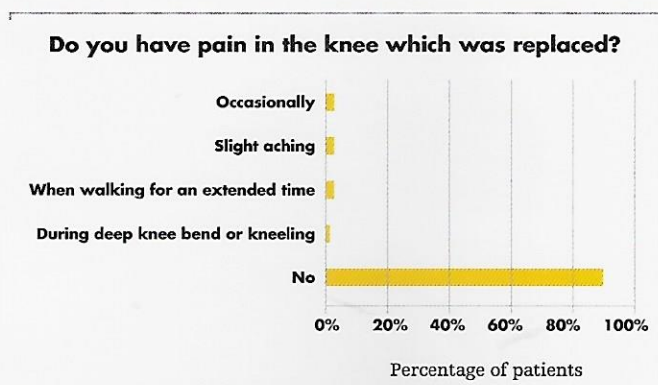
## Flexion degree of post engagement<sup>15-18</sup>

Normal knee	Triathlon	Attune	Sigma	NexGen	GEN II/Legion
45°	45°	87°	70°	90°	60-70°



## Satisfaction

A recent investigation of Triathlon patients showed that all patients were satisfied with their implant and surgical results, even when a small amount of residual pain was reported.<sup>5</sup>



Results of patient reported pain score of 76 patients at 7 year follow up.

## Survivorship

Multiple studies<sup>7,10</sup> and joint registries<sup>8,9</sup> from around the world consistently show high rates of survivorship with Triathlon.

Source	Survivorship
Mistry et al. <sup>7</sup> 2016	99.0% at 10 years (including all causes of revision)
2017 National Joint registry (UK/Wales) <sup>8</sup>	96.3% at 10 years (including infection)
2017 Australian Orthopaedic Association National Joint Replacement Registry <sup>9</sup>	96.3% at 10 years (including infection)
Scott et al. <sup>10</sup> 2014	99.5% at 5 years

### References:

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8. National Joint Registry for England, Wales and Northern Ireland. 14th Annual Report 2017. Table 3.29 Kaplan-Meier estimated cumulative percentage probability of first revision (95% CI) of a primary total knee replacement by main type of implant brand at the indicated number of years after primary operation.
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## X3 precisely engineered polyethylene

X3's patented<sup>11</sup> sequential irradiation and heat process, without the use of additives, allows for the following:

### Mechanical strength

X3 and Triathlon PS showed no mechanical failures at minimum 5 years in a clinical study.<sup>12</sup>

### Wear resistance

X3 demonstrated 30% less wear than a "J curve" knee in laboratory testing.<sup>13</sup>

### Oxidation resistance

X3 has demonstrated similar oxidation resistance to virgin polyethylene.<sup>14</sup>



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