

# CHAPTER I

## INTRODUCTION



Nowadays total knee arthroplasty (TKA) is the standard operative treatment in osteoarthritis knee. A successful operation can relieve pain and improve the function of the knee joint. This operation has been approved for its efficiency and effectiveness.

Several authors reported patient satisfaction rates of 90%-95%. Additionally, the results of surgery are durable with 10-15 years of implant survival which is greater than 90%. Nonetheless, some patients achieve a poor early result after surgery or premature implant failure which requires a revision operation. The percentage of patients who need early or late revision surgery after TKA is relatively small compared to the rates of failure to other medical interventions. Nonetheless, considering a large number of TKA done annually, the small percentage of failures is translated into a significant absolute number. The financial cost of TKA failure must also be considered. It is conservatively estimated that the cost of a revision knee surgery might exceed 300,000 baht or more. The most common indication for revision was infection. Other common causes of failure were, for example, instability, loosening and patellofemoral problems. Other authors have described failure of mechanisms that seemed to be design-specific.<sup>(1)</sup>

Instability after knee replacement can be minimized by having implants available with various levels of constraint. Therefore, the surgeon should have implants with varying levels of constraint available during TKA. Unfortunately, the designs of total knee prostheses were limited in the sizes number available to the surgeon. Proper implant sizing can help avoid complications and maximize outcome. There is no data concerning the morphological dimensions of the distal femoral condyle and the proximal tibia in this population. However, many prostheses are designed for Western knees and have been introduced without specific modification. The objective of this study was to compare the anthropometric data of Thai knees with the dimensions of current total knee prosthetic systems.