Cementless total hip arthroplasty (THA), can be performed using femoral components with a large variety of femoral component designs have been developed, one such component being a press-fit femoral stem. The Anatomic Fiber Metal plus stem (Zimmer) is one of the anatomically designed femoral components to be inserted without cement. The concept of this stem was to achieve stable fixation by metaphyseal fit and fill. It has a configuration matching a medullar canal of a normal femur and circumferential fiber mesh coating on the proximal one-third. The neck of the stem has an anteversion of twelve degrees. The press-fit and outcomes of cementless THA performed using this type of stem were reported to be good for primary osteoarthritis in selected Caucasian patients. However, there were a few reports available on the outcomes of THA using this stem this procedure in Japanese patients. Since the majority of the most Japanese patients with hips with hip osteoarthritis are have dysplastic hips in Japanese patients. Therefore, the results-outcomes of this procedure in Japanese patients might be different from those in Caucasian patients.

Therefore, in this study, we evaluated the outcomes of cementless total hip arthroplasty (THA) performed using a press-fit femoral stem, the Anatomic Fiber Metal plus stem (Zimmer) in Japanese patients and examined the possible effects of metaphyseal fit on the outcomes. This stem is designed such that stable fixation can be achieved by metaphyseal fit and fill. Its configuration matches that of the medullary canal of a normal femur; the circumference of its proximal one-third is coated with fiber mesh; and its neck has an anteversion of 12 degrees.

Source: Fixation of an Anatomically Designed Cementless Stem in Total Hip Arthroplasty by Shigeru Nakamura, Noriyuki Arai, Takateru Kobayashi, and Takashi Matsushita, used under CC-BY