

performed with large static displacements of nodes. Static analysis used in this study was time rate independent; which considered time duration as a loadstep counter and recognized the loadsteps and load substeps. A loadstep is a set of loads applied in the given time duration and load sub-step defines the time steps within a complete load-step at which the solutions were calculated for final display of results.

Results

Maximum stress

Figure 2 illustrates von Mises stress for Hip Model 1 after static load-step was applied. Similarly, the peak intensities of von Mises stresses were examined at the contact area between femoral head and femoral neck for all 12 hip models as indicated in Table 1. The range of von Mises stresses recorded was 0.65 to 1.73 MPa when a 100N force was applied. The von Mises stresses values change linearly, in the linear elastic regime. Majority of peak stress intensities were found at the contact surfaces between the head and the neck. A few models showed that highest stresses generated at the section of the stem connected with distal portion of the neck. Highest stresses at the stem were found in the hip models with higher neck angles. Since, individually recorded stress intensities show maximum stress behavior for entire hip model, they were referred as Maximum Stresses.

Contact stress

4.3 Forces applied during present static analysis simulate ground

Citation:

Citation: Bhatt H, Goswami T (2012)

Long Posterior Wall and Augmented Acetabular Components. J Bone Joint Surg Br 72: 418-422.

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