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The Disease Etiology, Epidemiology, Pathophysiology, Classifications, and Natural Evolution of Perthes' Disease, Imaging for Perthes' Disease, Prognostic Factors and Outcome Measures
Section I – Etiology and Pathogenesis
Pathophysiology, Classifications, and Natural Evolution of Perthes' Disease
Section II – Treatment Early in the Course of the Disease (Onset to the Early Fragmentation Stage) Principles of Containment, Treatment Aimed at Preventing Femoral Head Deformation
Section III – Treatment Late in the Course of the Disease (Late Fragmentation Stage to Early Reconstitution Stage Principles of Treatment in the Late Stages of Perthes'

Double Dynamic Martin Screw (DMS)
Karl-Klaus Dittel 2009-02-13
The scope and importance of hip fractures is almost incomprehensible. With a world wide incidence of close to 2 million cases per year, these fractures pose a daunting challenge to our ability to afford and treat this epidemic. The incidence of these fractures is predicted to grow to 4 million in 2050 including severe multi-bone injuries. Add the hospital mortality rate of up to 4% and the 10% mortality from 8% to 20% and the life ending effect of these fractures becomes a glaring reality. Of those who initially survive their fracture, about 5% cannot walk the same again. The social problems associated with these elderly people is enormous. Of course, one and only one of these problems will include education, prevention, surgical and hospital treatment protocols, emergent rehabilitation efforts, social judgments and a generous redistribution of money. This publication is primarily directed to the amplification of a new treatment modality that addresses only a fraction of the problem. It is, however, a quantum leap in the evolution of fixation with compression hip screws which are still the gold standard for surgical stabilization of pertrochanteric hip fractures. The Dynamic Martin Screw (DMS) addresses the issue of adjustability of the fracture angle with appropriate mechanical strength characteristics that were lacking in its historical predecessors.

Comparison of Loading Behavior of Femoral Stems of Ti-6Al-4V and Cobalt-Chromium Alloys
RR. Tarr 1983
Large stiff, small moderately stiff, and small flexible femoral total hip components cemented in the proximal femur have been investigated using a three-dimensional finite element model and validated using experimental strain gage techniques. A physiological load of three times body weight (2000 N), 18 deg from vertical was utilized to compute stresses in the bone, cement, and metal construct.