WHAT IS THE RIGHT POSITION FOR THE TAR?

**Hypothesis**

Success in total ankle replacement depends on
- to which extent the surgeon is capable to balance the ankle joint, and
- to which extent the ankle prosthesis mimics the anatomy of the replaced ankle

**Intraoperative Appearance of Right Position**

A) fluoroscopically
   - position of implants in frontal (coronal) plane (AP view of the ankle)
   - position of implants in sagittal plane (lateral view of the ankle)
   - position of talar implant in horizontal plane (AP view of the foot)

B) functional testing of replaced ankle
   - frontal (coronal) plane stability – varus and valgus stress in various flexion positions
   - sagittal plane stability – anterior drawer test
   - 3 component ankle: anterior-posterior translation and rotational motion of the PE insert

**Radiological Appearance of Right Position**

A) Frontal (coronal) plane alignment
   - longitudinal axis of tibia meets centre of talus and calcaneal tuberosity
   - load transfer between tibial and talar component goes through center of components
   - tips of malleoli are in anatomical, or only slightly increased distance to talus

B) Horizontal plane position
   - talar component is on line with 2nd metatarsal

C) Sagittal plane
   - longitudinal axis of tibia meets closely restored center of rotation of talus (as given by talar component)
   - load transfer between tibial and talar component goes through center of components

**Clinical Appearance of Right Position**

A) No pain
   - immediately and thereafter
   - no motion while moving the ankle
   - free motion

B) Alignment of the foot while weight-bearing
   - correct in all planes
   - regular foot position on ground
C) Stable foot
   - against varus (lateral ligaments, peroneal muscles)
   - against valgus (medial ligaments, TP-muscle)

D) Uneventful rehabilitation
   - continuous improvement
   - achievement of “forgotten ankle”

Conclusions

- Minimal data on “right position for TAR”
- Radiological and clinical assessment may indicate restoration of ankle closest to anatomy
- Pain, motion and amount of regained function can be used as indicators for right position