

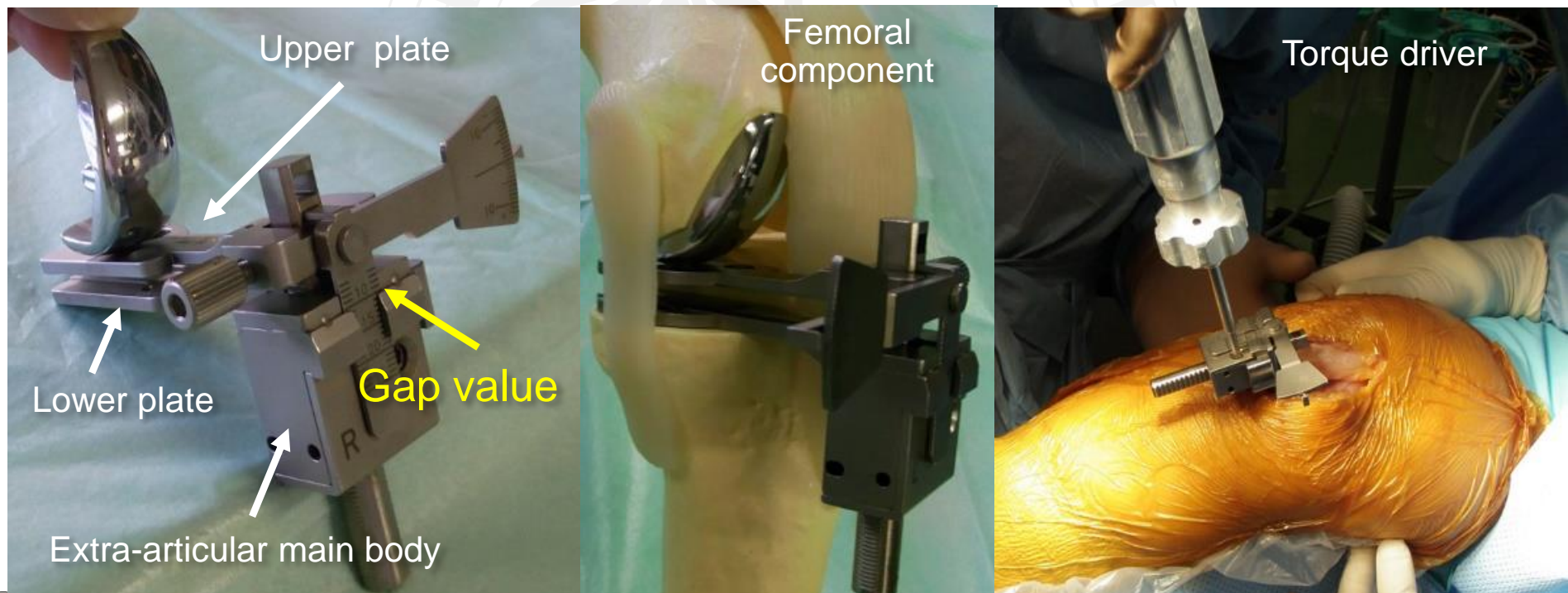
# Gap Balancing in UKA

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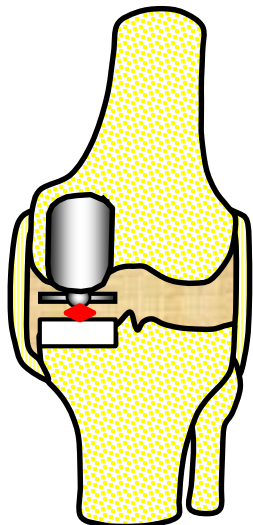
# Medial compartment gap kinematics

Matsumoto T, et al. *Clin Biomech* 2013

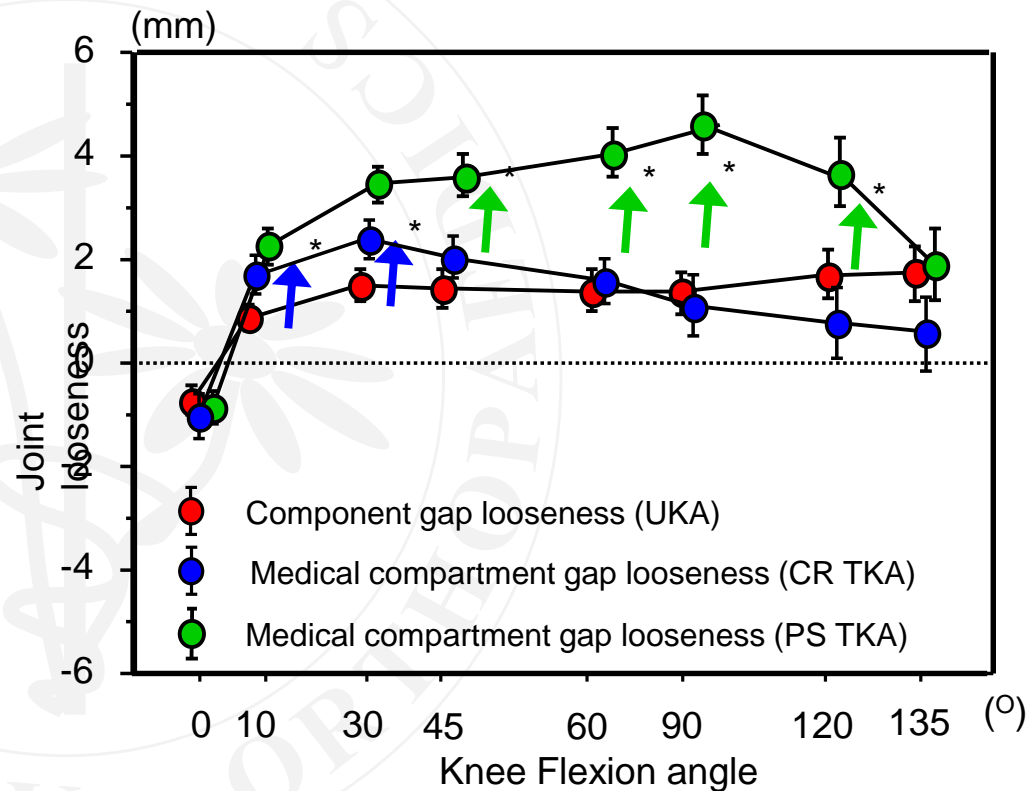
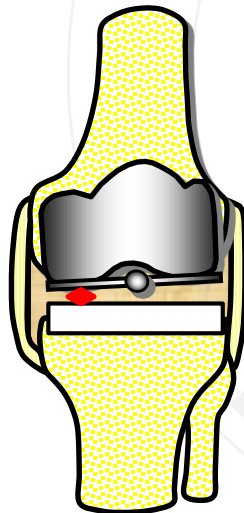
Joint looseness = component gap – insert thickness

- ✓ Zimmer UNI
- ✓ 20 knees in each
- ✓ Tensor with 20lbs. distraction force

Joint looseness



Medial joint looseness



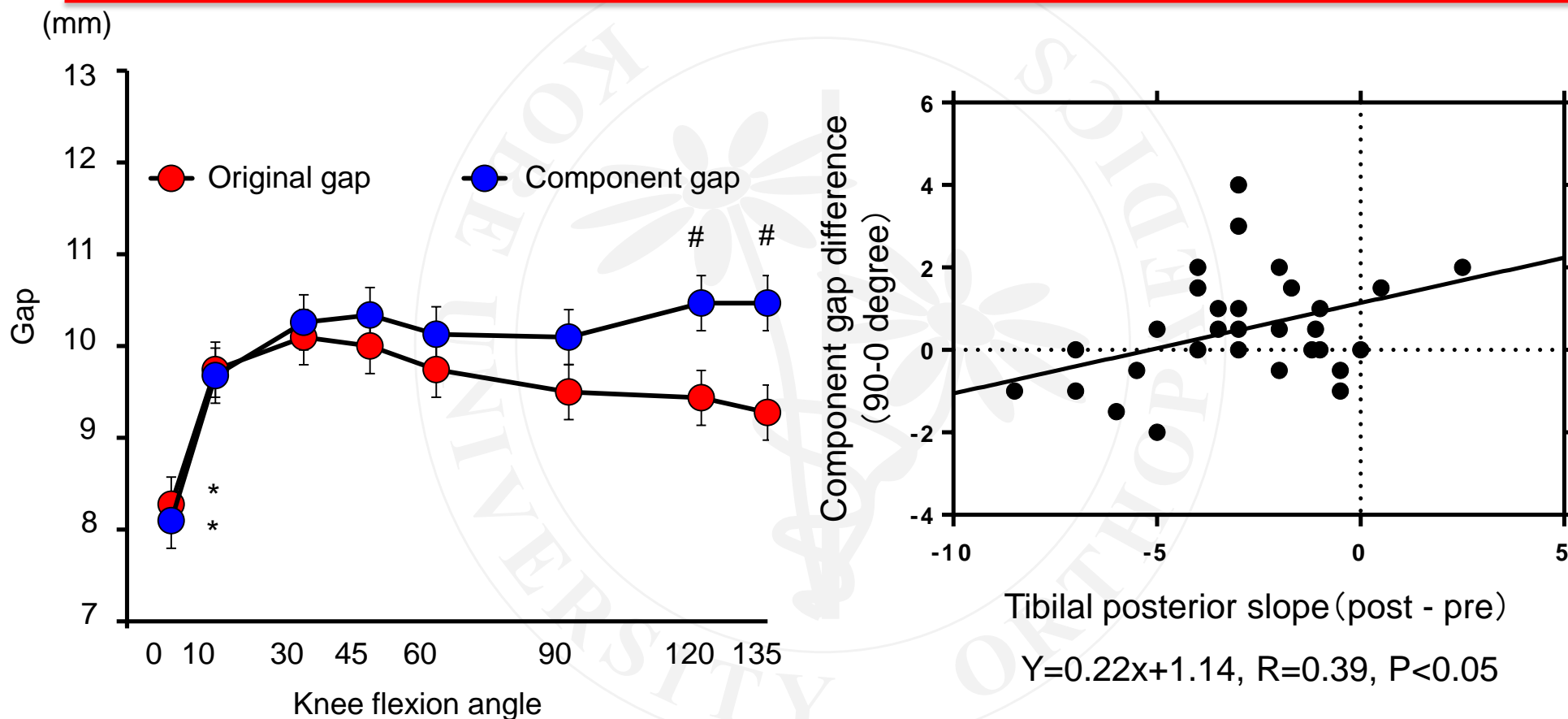
- ✓ Joint looseness differs among UKA, CR-TKA, and PS-TKA.
- ✓ UKA shows constant joint gap throughout range of motion compared with TKAs.

# Medial compartment gap before and after implantation

Takayama K, Matsumoto T, et al. *Int Orthop* 2015

## Influence of tibial slope on gap

Takayama K, Matsumoto T, et al. *Knee* 2016

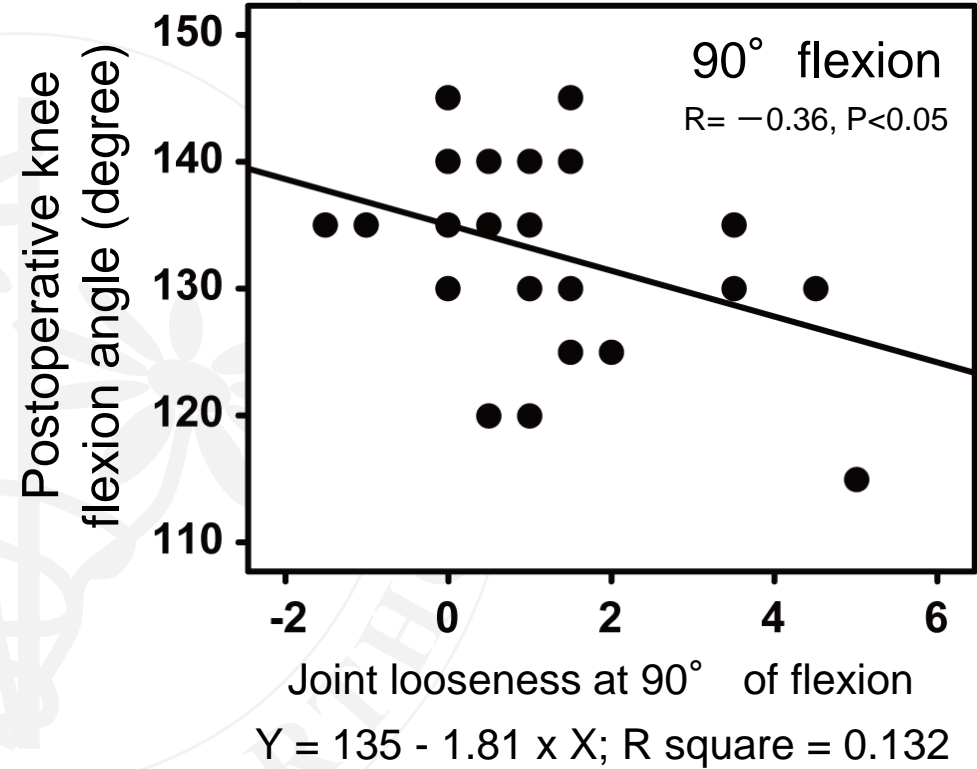
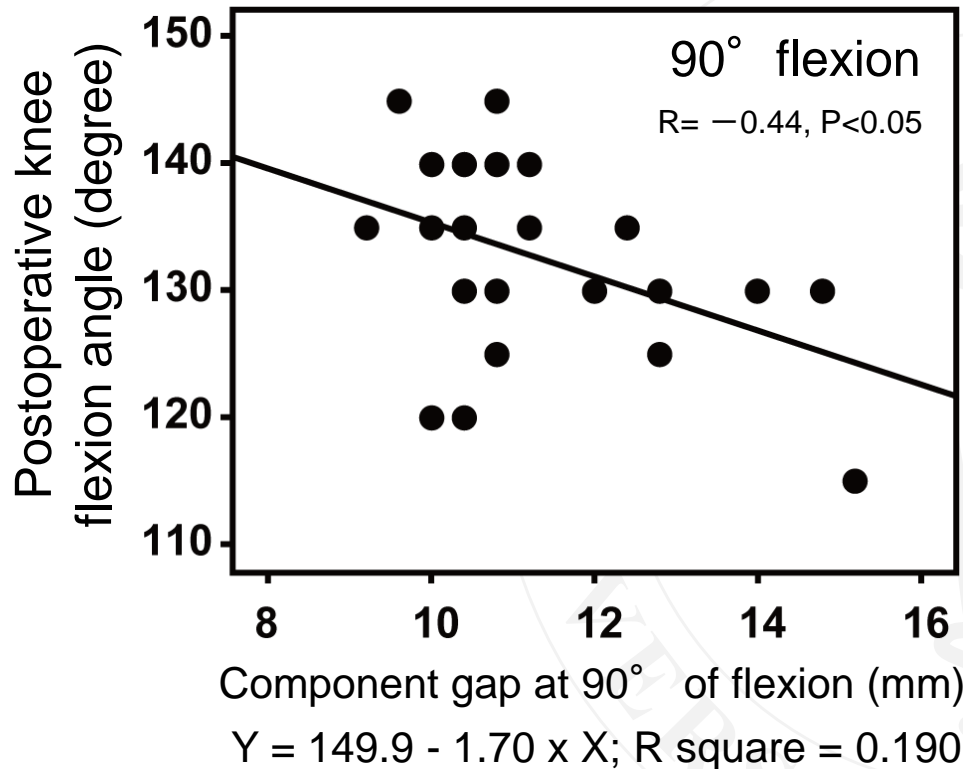


- ✓ Joint gap changes throughout the range of motion.
- ✓ Joint gap measurement can predict postoperative knee condition.
- ✓ Decreased tibial posterior slope results in decreasing flexion-extension gap difference.



# Influence of gap on postoperative flexion angle

Matsuzaki T, Matsumoto T, et al. *KSSTA 2017*



- ✓ The post-operative knee flexion angle was negatively correlated with the component gap and joint looseness (at 45°, 60°, 90° knee flexion).
- ✓ Medial stability at flexion is important for achievement of high flexion angle after UKA.

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