

Track Multiple Bones

Before beginning this tutorial, ensure that you are familiar with the steps in the [Basic Bone Tracking](#) guide.

Overview

Unless the bones overlap in the X-ray images, it is better to track bones one at a time. This is because for each iteration the optimizer randomly positions each bone and then evaluates the fit of all of them together. If one bone was moved to a slightly better pose while the others were moved to worse ones (a common occurrence), the overall fit would be worse and the poses of all bones would be discarded.

Tracking Two Bones

Even if there is overlap of bones, it is often preferable to track them separately. In these cases, a good strategy is to track one bone first, then to lock it in place and track a second bone with the first one still active.

For example, when tracking the bones at the knee there is often substantial overlap between the femur and the patella. The recommended strategy is as follows:

1. select just the femur;
2. track the femur by itself in all frames;
3. select both the femur and patella;
4. uncheck the femur box in the [Object Tracking](#) widget so that the femur remains fixed in its previously calculated poses; and
5. optimize to track the patella.

The femur's DRR will be included in the optimization, but the femur pose will not change in each frame.

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