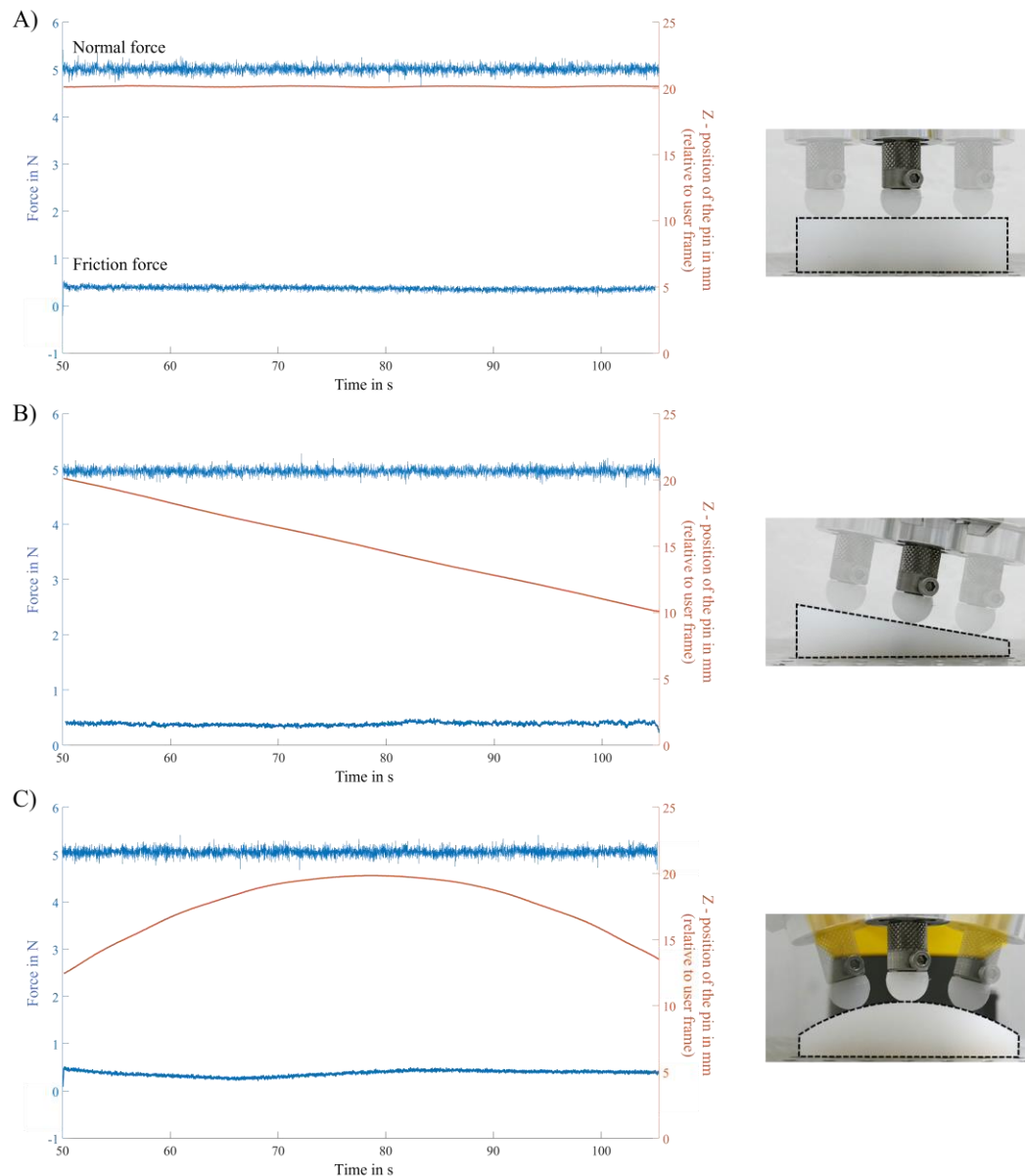


## Supplementary Material

### 1 Supplementary Figures and Tables

#### 1.1 Supplementary Figures



**Supplementary Figure 1.** Exemplary raw data recorded along a trajectory on the three different PA shapes A) rectangular B) wedge and C) curved. On the left y-axis of each graph (blue), the applied normal force (target value of 5 N) and the resulting friction force in N are shown. On the right y-axis (orange), the corresponding z-position of the pin relative to the user frame is displayed in orange over time.

## 1.2 Supplementary Tables

**Supplementary Table 1:** Summary of the mean friction coefficients of the POM-on-tibial cartilage experiments on the outer, central and inner trajectories on the medial and lateral surfaces.

		Outer		Central		Inner	
		Intact	Defect	Intact	Defect	Intact	Defect
Friction coefficient Mean $\pm$ SD (n = 6)	Medial	0.031 $\pm$ 0.010	0.039 $\pm$ 0.014	0.024 $\pm$ 0.007	0.037 $\pm$ 0.006	0.026 $\pm$ 0.004	0.025 $\pm$ 0.003
	Lateral	0.026 $\pm$ 0.005	0.026 $\pm$ 0.005	0.028 $\pm$ 0.008	0.029 $\pm$ 0.008	0.036 $\pm$ 0.012	0.036 $\pm$ 0.013