Supplementary Figures

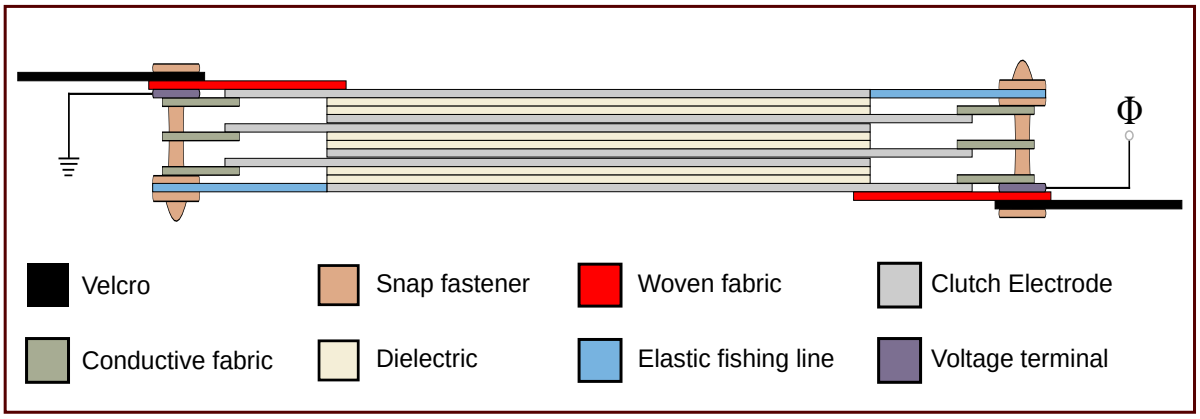

Figure S 1: **Cross-sectional view of one electroadhesive clutch.** Each clutch consisted of three pairs of dielectric-coated electrodes that were interleaved in an interdigitated architecture. By virtue of the interdigitated architecture, one electrode of each pair was maintained at high voltage with respect to its paired electrode that was grounded when the clutch was engaged.

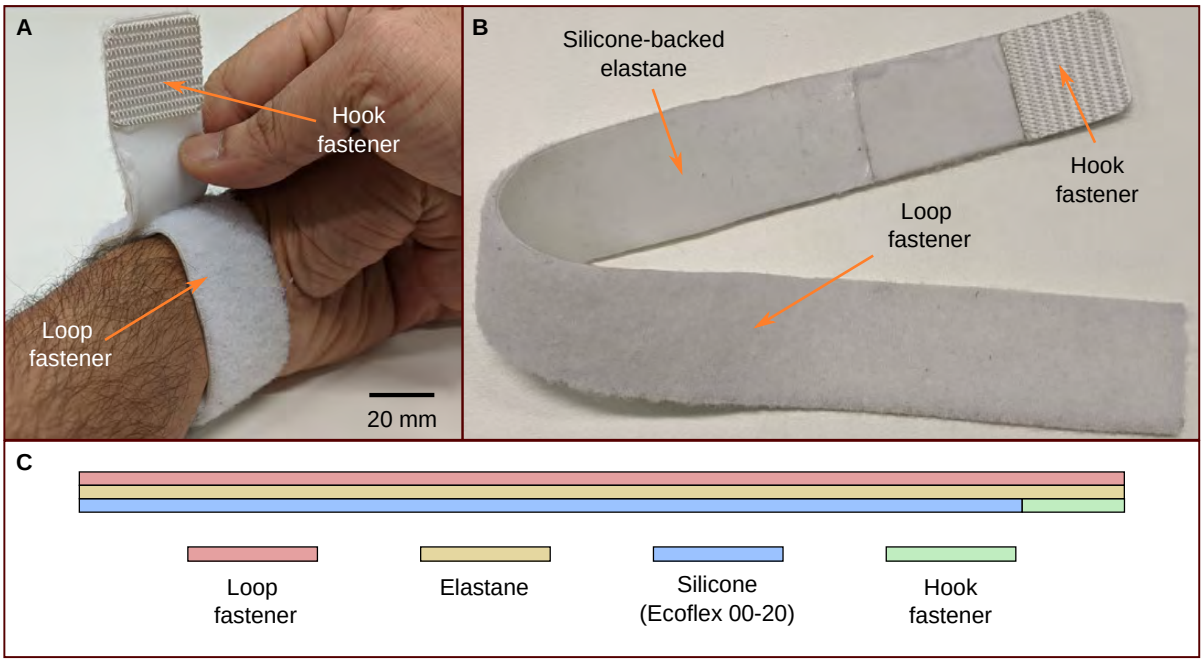

Figure S 2: **Forearm and upper arm attachments straps.** (**A**) The attachment is wrapped around the arm and tightened by mating the hook and loop fasteners. (**B**) Each attachment strap is composed of a loop fastener exterior that is bonded to a silicone-backed elastane layer. The silicone layer ensures that the attachment does not slip along the arm. (**C**) The cross-section of the attachment strap shows its different layers.

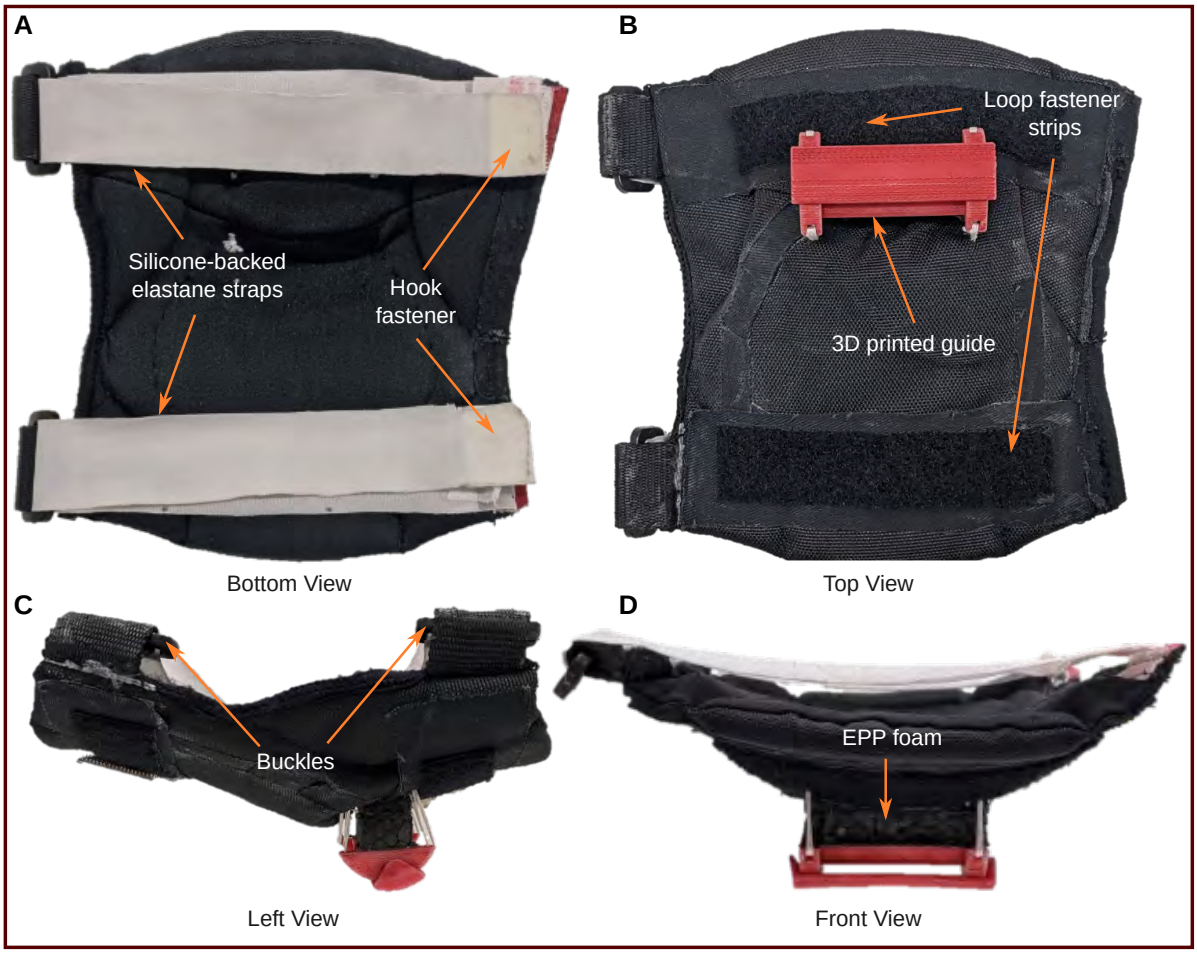

Figure S 3: **Different views of the foam-padded fabric elbow joint attachment.** (**A**) The interior surface of the elbow attachment, which is in contact with the skin, is fashioned out of an off-the-shelf hockey elbow pad. The silicone-backed elastane straps are wrapped around the forearm and upper arm. (**B**) A 3D printed guide ensures that the dorsal clutch does not get displaced laterally during elbow extension and flexion. The hook fastener at the end of the silicone-backed elastane straps mates with the loop fastener sewn onto the exterior of the foam-padded attachment. (**C**) The straps pass through buckles that are sewn on to the sides of the foam-padded attachment. (**D**) A block of expanded polypropylene (EPP) foam separates the 3D printed guide from the elbow foam-padding to maintain a gap between the forearm and the dorsal clutch.