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Intimate intimas: positioning of the copulatory organs in mating *Drosophila*

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Insect male genitalia are complicated and beautiful. As mating initiates, the numerous and complex lobes of a male *Drosophila*'s genitalia undergo morphological movements that rearrange their positions. An unmated male's aedeagus and the dorsal and ventral branches of its basal process are folded into a "closed" position (see Figure 7 of Kamimura, 2010 *Zoomorphology*. 129, 163–174). When mating begins, these branches insert into the female fly, and then progressively swing out into an "open" conformation by 10 minutes into copulation, while sperm and seminal fluids are being transferred.

Micro-computed tomography scanning (Mattei et al., 2015. *Proc Nat Acad Sci.* 112, 8475–8480) allows us to zoom in on the unique conformation of the male copulatory organs during mating. This virtual section is a dorsal view, halfway through the abdomen of the mating pair (male: right, female: left). The long tube in the middle is the aedeagal apodeme. The branches have opened out to either side of the apodeme (center of the image). As the male organs open out, the female's intima is pierced by the dorsal branch. This has the potential to transfer male-derived molecules, organelles, and cells (and potentially even pathogens) into the female's circulation and/or to cause additional physiological effects on the female. We hope that future work will determine the causes and effects of this mating-induced trauma, as well as the extent to which its specifics are conserved across *Drosophila* species as well as other insects.