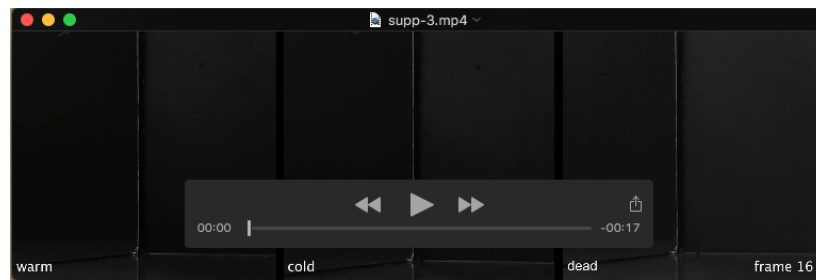


**Figure S1:** Effect of rotation component on vertical falling speed (impact speed) of locusts at various experimental conditions. In relation to the overall falling speed the contribution of the rotation component to the tracked falling speed is negligible and shows no trend for any of the experimental conditions.



**Movie 1:** High-speed recording (1500 fps) of a locust (*S. gregaria*) falling from a horizontal plane onto a glass substrate. Note the forward tilted movement, the first contact with the head 460 and a very quick recovery into a body posture which would allow fast consecutive jumping movements.



**Movie 2:** High-speed recordings (1500 fps) of three locusts (warm, cold and dead *S. gregaria*) falling from a horizontal plane onto glass substrates. The timing of the videos is synchronized to the point of impact. Note the active movement of the wings of the warm 465 locust, which presumably affects the impact speed (acceleration or deceleration) and impact orientation. Cold locusts used their wings notably less to accelerate or decelerate their falling movement. Dead locusts obviously neither showed active movement of wings, nor passive opening of wings, which explains their falling speed close to the theoretical maximum of a free falling body.