



Supplementary figure S1: Cumulative histograms of the distribution of most tensile and most compressive principal strains (1 & 3) to illustrate the influence of varying material properties of the dorsal tentorial arms and eyes on overall head strain. Note that frequencies are relative to each other to account for the different element numbers of each structure. Small insets show strain distribution for structures with higher strain. (a) *Siphonurus lacustris* (Ephemeroptera); (b) *Lestes virens* (Odonata); (c) *Perla marginata* (Plecoptera); (d) *Forficula auricularia* (Dermaptera). Abbreviations: DTA, dorsal tentorial arm; HT, "stiff" dorsal tentorium (7300 MPa); ST, "soft" dorsal tentorium (350MPa); SE, "limp" eyes and dorsal tentorium (350 MPa). Bold font indicates in vivo material combinations.