Title:	Increasing adult density compromises survival following bacterial infections in Drosophila melanogaster
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Abstract:	The density-dependent prophylaxis hypothesis predicts that risk of pathogen transmission increases with increase in population density, and in response to this, organisms mount a prophylactic immune response when exposed to high density. This prophylactic response is expected to help organisms improve their chances of survival when exposed to pathogens. Alternatively, organisms living at high densities can exhibit compromised defense against pathogens due to lack of resources and density associated physiological stress; the crowding stress hypothesis. We housed adult Drosophila melanogaster flies at different densities and measured the effect this has on their post-infection survival and resistance to starvation. We find that flies housed at higher densities show greater mortality after being infected with bacterial pathogens, while also exhibiting increased resistance to starvation. Our results are more in line with the crowding stress hypothesis that postulates a compromised immune system when hosts are subjected to high densities.
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