The loss of function and pathology caused by aging can be ameliorated by genetic and pharmacological interventions in laboratory animals. Inhibition of the mTOR network has evolutionarily conserved effects on lifespan and aging. We have found that the gut is a key target tissue for the mTORC1 inhibitor rapamycin, with benefits to both the health of the gut itself and to lifespan. Intestinal health during aging is thus an important determinant of the health of the whole organism.