

MALE/FEMALE RATIO AMONG COVID-19 DEATHS

Statistics on COVID-19 show a substantial higher number of deaths among males than females in all age groups from 50 years and above.

To better understand these data, it is worth noting that in many species there is a significant longer lifespan of females compared to males. [Lemaitre et al. \(PNAS\)](#) recently analyzed 101 mammalian species and found that the median lifespan of females is on average, 18.6% longer than that of males (7.8% in humans). The evolutionary reason is well summarized in another paper which recently appeared in [BMC Evolutionary Biology](#): "... while males may maximize fitness by increasing mating success at the expense of longevity, females may maximize fitness through longevity because offspring production, although resource intensive, requires time too". It is also worth noting, in this context, that while menopause is rare in mammals (females are fertile also at older ages), humans and killer whales are a big exception. The title of one paper on this subject, which appeared last year in [PNAS](#), is self-explanatory: "Postreproductive killer whale grandmothers improve the survival of their grandoffspring". In general, selection does not care about what happens after the reproductive period. However, if a trait (grandchild care by females in this case) is related to fitness, then evolution makes an exception.

Future genomic and functional studies will better clarify the male/female ratio among COVID-19 deaths, but its full understanding requires an evolutionary frame. As Dobzhansky said, nothing in biology makes sense except in the light of evolution.