Accumulation of deleterious mutations and fitness in a pre-industrial human population

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Many of the mutations are detrimental to fitness, and each individual carries a burden of deleterious mutations that were accumulated over many generations. In humans, the number of *de novo* point mutations passed on to an offspring is strongly dependent on the father's age. Here, we use extensive pedigree data on a pre-industrial Finnish population to get, for each individual, the ages of his or her male ascendants for up to three generations, and use this data as a proxy for the number of acquired mutations. Individuals whose fathers, grandfathers and great-grandfathers fathered their lineage at age of 20 were 9% more likely to survive to adulthood than those with 40-year-old male ancestors. Among survivors to adulthood, older male ascendants were also associated with a reduced probability of getting married. These observations suggest that the deleterious mutations acquired from recent ancestors may be a substantial burden to fitness in humans.