

KWP309 Web Figure 1

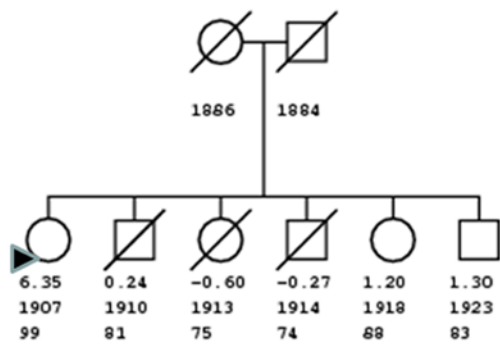
Examples of sibships with very large FLoSS.

To clarify how the FLoSS score values families, Web Figure 1 presents four LLFS sibships with scores greater than 7. Below each sibling, we show his or her individual score that contributes to the family's FLoSS score, as well as the birth year and the age, either at screening or at death.

The first family has FLoSS=8.23. Several sibling deaths at younger ages contribute to the relatively low family score, despite the presence of a 99-year-old. The two smaller pedigrees illustrate the greater rarity of older males relative to women of the same age. Although the second family has three living siblings aged between 85 and 93 years, the oldest living sib, a woman age 93, contributes only modestly to the FLoSS. In the 1913 birth cohort, among women who survived to age 40, 13% survived past age 93. In contrast, the third family's large FLoSS is driven by the exceptionality of the living male, aged 98 years. In this birth-year cohort, only 0.7% of males who survived to the age 40 reach age 98. Note for comparison, that 3% of females who reached age 40 survive past 98 years, making older males far more exceptional in longevity than females of the same age. Finally, the large pedigree at the bottom shows an ideal family for the LLFS. The FLoSS for this family is 14.93, making it as exceptional as the top 25% of families enrolled in the NECS, despite the absence of any living centenarian. This score is driven by the living male aged 94 years, who accounts for almost 50% of the FLoSS, and is reinforced by the presence of several living males aged 80 years and older, as well as the living female aged 90 years. Note that the contribution of 1.7 from the living 90 year-old female years to the FLoSS is similar to the contribution of the living 84 year-old male.

A major reason for FLoSS favoring larger families is that it measures exceptionality of survival of the whole family as a group by summing individual scores, in contrast to, say, the FRS, which averages them. For example, the FLoSS for a sibship of two living women aged 95 and 97 is only half that for a sibship of two twin pairs (that is, four living women) of the same ages, reflecting the fact that the latter group is more improbable (i.e., exceptional). The FRS values these two sibships equally.

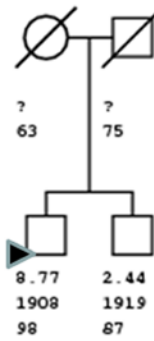
Web Figure 1. FLoSS scoring for 4 families scored in 2006. Sample families with Family Longevity Selection Score (FLoSS) >7. Pointers identify probands and slashes indicate deaths. Numbers under each sibling are: the individual score, birth year, and age at screening or death, as appropriate.



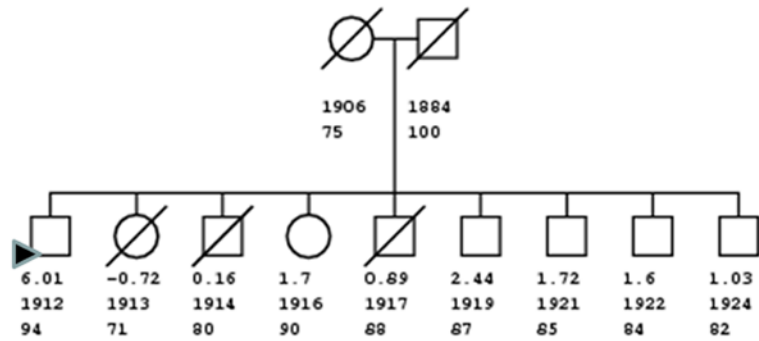
FLoSS= 8.23



FLoSS = 9.02



FLoSS=11.21



FLoSS= 14.93