

# Assignment #4: Non-Random Mating

[A4-1] Selfing

[A4-2] deCODE

## Assignment [4-1]: Selfing

Calculated the **frequency of selfing** based on the genotype frequencies below for a population at equilibrium that engages in mixed-selfing and outcrossing.

Genotype	$A_1A_1$	$A_1A_2$	$A_2A_2$
Frequency	0.828	0.144	0.028

## Assignment [4-2]: deCODE

Researchers at the deCODE Genetics company in Reykjavik mapped out kinship among all known Icelandic couples whose members were born between 1800 and 1965. They then compared the numbers of children and grandchildren descended from these 160,811 couples.

Researchers were shocked to find that for women born between 1800 and 1824, marriages between third cousins produced an average of 4.04 children and 9.17 grandchildren, while marriages between eighth cousins or more distantly related couples had averages of only 3.34 children and 7.31 grandchildren.

For women born between 1925 and 1949, with mates related at the degree of third cousins, the average number of children and grandchildren were 3.27 and 6.64, compared with 2.45 and 4.86 for those with mates who were eighth cousins, or more distantly related.

These findings seem to contradict our assumption that higher levels of inbreeding would result in a decrease of fitness. Try to find a possible explanation.