

Tuesday, March 30, 2021 1:35 PM

For a Caucasian couple with no family history, what is the chance they will have a child with CF? carrier freq 1/25

3 out of 4 carriers, 25% mutant allele, 1/1600 chance of child with CF
 out 2 people, one is carrier
 of mother 1/25 * 1/25 = 1/625
 of father 1/25 * 1/25 = 1/625
 1/625 * 1/625 = 1/390625

Handwritten notes: $1/25 \times 1/25 = 1/625$
 $1/625 \times 1/625 = 1/390625$
 Aa = mutant
 Punnett squares and probability trees showing inheritance of A and a alleles.

Couple with diagnosis of CF in mother's nephew. What is risk to fetus? carrier freq 1/25

Father carrier and pass the mutant allele to the child and Mother is a carrier and passes the mutant allele to child
 $1/2 * 1/2 * 1/2 = 1/4$

Handwritten genetic analysis for a couple with a diagnosis of CF in mother's nephew. Includes pedigree charts, Punnett squares, and probability calculations.

Key calculations:
 - $1/2 * 1/2 = 1/4$
 - $1/25 * 1/25 = 1/625$
 - $1/4 * 1/625 = 1/2500$
 - $1/2 * 1/2 * 1/25 = 1/500$
 - $1/2 * 1/2 * 1/2 * 1/25 = 1/1000$

Pedigree charts showing inheritance from a carrier father and a non-carrier mother, with a note that the mother's nephew has CF. Includes a Punnett square for Aa x Aa cross.