

Punnett Square Example: First degree relative (FDR)

Dad has Type I Diabetes, Mom doesn't
They have 2 children: Emma and Edward

Dad's genotype: 0201 / 0300 (**High Risk**)
Mom's genotype: 0201 / 0500 (**Low Risk**)

Dad: 0201

Dad: 0300

Mom: 0201	0201 / 0201 HIGH RISK ★ *Emma*	0201 / 0300 HIGH RISK
Mom: 0500	0201 / 0500 LOW RISK	0300 / 0500 MOD RISK *Edward*

Four possible combinations for Mom and Dad's children:

- 1) **0201/0201** High risk genotype
- 2) **0201/0500** Low risk genotype
- 3) **0201/0300** High risk genotype
- 4) **0300/0500** Moderate risk genotype

Each of the 2 children fall into the following genotypes

- Emma: 0201/0201** High risk genotype
Edward: 0300/0500 Moderate risk genotype

If Mom and Dad decide to have another child, the child will fall into one of the following risk genotypes: **High**, **Moderate** or **low**. So this breaks down as follows: 50% of being high risk like Emma, 25% of being moderate risk like Edward and 25% of being low risk.