

## Punnett Square Example: Mom and Dad each carry 1 high risk allele

Mom and Dad don't have Type I Diabetes and no family history

They have 3 children: Mary-Beth, Peter and Lucas

Dad's genotype: 0201 / 0500 (Low Risk)  
Mom's genotype: 0302 / 0600 (Low to Moderate Risk)

Dad: 0201

Dad: 0500

Mom: 0302

0201 / 0302

**HIGH  
RISK**

★ \*Peter\*

0302 / 0500

**MOD  
RISK**

\*Lucas\*

Mom: 0600

0201 / 0600

**LOW  
RISK**

\*Mary-Beth\*

0500 / 0600

**LOW  
RISK**

Four possible combinations for Mom and Dad's children:

- 1) **0201/0302** high risk genotype
- 2) **0201/0600** low risk genotype
- 3) **0302/0500** mod risk genotype
- 4) **0500/0600** low risk genotype

Each of the 3 children fall into the following genotypes

**Mary-Beth: 0201/0600** Low risk genotype  
**Lucas: 0302/0500** Moderate risk genotype  
**Peter: 0201/0302** High 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 low risk like Mary-Beth, 25% of being moderate risk like Lucas and 25% of being high risk like Peter.