Conditional probability

How can we calculate the result in a case where two events are not independent. It means that, if one event occurs it will directly affect the probability for the other event?

If event A and B are those kind of complex events which will not exclude each other. In this case we have a so-called conditional probability (event A affects event B).

Notation: $p(A \mid B)$

In this case we mean the relative frequency which compares the sum of all probability to the probability of event B (probability of it's occurrance).

$$ p(A|B) = \frac{k_{AB}}{k_b} = \frac{\frac{k_{AB}}{k}}{\frac{k_{B}}{k_b}} = \frac{p(A \cap B)}{p(B)} $$

So we can get to the conclusion:

$$ p(A \cap B) = p(A|B) \, p(B) $$