$$RRR = \frac{ARR}{CER}$$

Rearranged

$$RRR \times CER = ARR$$

$$NNT = \frac{1}{ARR}$$

Since ARR = RRR x CER

$$NNT = \frac{1}{RRR \times CER}$$

If the RRR is unstable so is the NNT, if the RRR varies so does the NNT

Key
RRR – relative risk reduction
ARR – absolute risk reduction
CER – control event rate
NNT – number needed to treat

Reference
Pai M, Filion K.. McGill University.. An overview of measurements in epidemiology [VER 3, 2007].. 2007.. http://www.teachepi.org/documents/courses/An%20Overview%20of%20Measurements%20in%20Epidemiology..pdf(accessed 10 November 2014)..

USING NATURAL NUMBERS FOR ILLUSTRATION

$$20 = \frac{120}{6}$$

Rearranged

$$20 \times 6 = 120$$

$$10 = \frac{1200}{120}$$

Since ARR = RRR x CER

$$10 = \frac{1200}{20 \times 6}$$

If the RRR is unstable so is the NNT, if the RRR varies so does the NNT

Key
RRR – relative risk reduction
ARR – absolute risk reduction
CER – control event rate
NNT – number needed to treat

Reference
Pai M, Filion K.. McGill University.. An overview of measurements in epidemiology [VER 3, 2007].. 2007.. http://www.teachepi.org/documents/courses/An%20Overview%20of%20Measurements%20in%20Epidemiology..pdf(accessed 10 November 2014)..