Numbers needed to treat derived from meta-analysis: a word of caution

In the editorial by Drs. Marx and Bucher in the March/April 2003 issue of *ACP Journal Club* (1), an example illustrating the application of estimates of RRRs to individual risk is misleading. Marx and Bucher state that the NNT would increase in patients with a baseline risk 11 times that of the low-risk group, which is counterintuitive. If a high-risk patient is judged to have a risk greater than that of a low-risk patient, the NNT would be expected to decrease, not increase. I believe they meant to say that the NNT divided by the factor f will yield the adjusted risk of outcome in an individual patient.

Daniel Peterson, MD
St. Luke's–Roosevelt Hospital Center
New York, New York, USA

Authors' response:

Dr. Peterson's observation is correct and implicitly concurs with our example, but we failed to correctly state when to divide by factor f and when to multiply. In paragraph 6 we wrote, ". . . the baseline risk of included trials ranged from 2% to 22%, . . . the corresponding NNT for an average follow-up of 18 months is 263 (CI 185 to 500) for a baseline risk of 2% and 24 (CI 17 to 45) for a baseline risk of 22%."

In paragraph 7 we wrote, "If the baseline risk of an individual patient is a factor f compared with the baseline risk of a typical study patient and the relative risk is constant, the ARR for the patient is scaled according to the same factor f." Thus, and as Dr. Peterson states, if the baseline risk increases by factor f, the NNT needs to be divided by f. For example, for baseline risk 2% × 11 = 22%, the NNT becomes 263 ÷ 11 = 24.

We appreciate the opportunity to clarify this point and apologize for any confusion this may have caused.

Arthur Marx, MD, MPH
Heiner Bucher, MD, MPH

Reference
1. **Marx A, Bucher HC.** Numbers needed to treat derived from meta-analysis: a word of caution [Editorial]. ACP J Club. 2003 Mar-Apr;138:A11.