

## Reply to: Odds and Risk Ratios: When They Are Similar and When They Are Not

### To the Editor:

We thank Professor Andrade (1) for his comments regarding our recent meta-analysis examining the association between non-neurological autoimmune disorders (NNAIDs) and psychosis (2).

In meta-analyses, there is a compromise between the number of studies included and heterogeneity. Employing broader inclusion criteria increases the number of studies available for inclusion but may also increase between-study heterogeneity. In an ideal world, we would be able to examine associations between NNAIDs and psychosis within both individual study designs and NNAIDs separately. However, there are currently insufficient numbers of studies to permit this, and we therefore chose to combine results across individual study designs to enable us to examine associations for specific NNAIDs.

With regard to the statement that risk ratios (RRs) and odds ratios (ORs) are not comparable even when both disorders are rare, this is a valuable point. As noted by Professor Andrade, when the co-occurrence between NNAIDs and psychosis is high (as indicated by a large OR), there is a discrepancy between the RR and OR. Specifically, we find that RRs and ORs are similar for ORs of 5.00 or lower; however, for ORs exceeding 5.00, there is a larger discrepancy: for example, using the data extracted from the article by Eaton *et al.* (3), the RR and OR were 3.47 and 3.85, respectively, for the association between celiac disease and schizophrenia, and 8.67 and 12.50, respectively, for acquired hemolytic anemia and schizophrenia. Of the 90 ORs that we included in our primary analysis, which examined the overall association between psychosis and all NNAIDs excluding rheumatoid arthritis (owing to the widely documented negative association between this disorder and psychosis), there are only six that are >5.00. Importantly, when we exclude these six effect sizes, we

find a similar pooled OR (1.20; 95% confidence interval, 1.07–1.35).

We hope that our article encourages researchers to undertake prospective studies to examine the association between NNAIDs and psychosis that will allow future meta-analyses to stratify analyses by both study design and individual NNAIDs.

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### Article Information

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