

Response to: 'The reference levels of serum urate for clinically evident incident gout' by Chen and Ding

We thank Drs Chen and Ding¹ for their interest in our recent paper describing the relationship between serum urate concentrations and risk of developing incident gout.² They suggest that we calculate benchmark dose estimates for serum urate and gout risk. Benchmark dose estimates are used in the field of occupational epidemiology to evaluate the minimal levels of exposure to an environmental toxin needed to cause a prespecified increase in an adverse event.

We are not aware of this approach being applied to clinical parameters that are not external exposures and are uncertain about validity of such an approach for serum urate, noting that all humans have some 'exposure' to urate, which is a circulating biochemical analyte. Estimation of the benchmark dose also requires a predetermined increase in risk (eg, 10% extra risk or change in the mean equal to one SD). At present, the clinically meaningful increase in gout risk is unknown. For these reasons, we have not provided benchmark dose estimates.

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- 2 Dalbeth N, Phipps-Green A, Frampton C, et al. Relationship between serum urate concentration and clinically evident incident gout: an individual participant data analysis. *Ann Rheum Dis* 2018;**77**:1048–52.