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BACKGROUND AND AIMS: Vitamin A affects inflammation and immune function and is thus a factor of interest in relation to cardiovascular disease (CVD). As vitamin A circulates in the plasma in the form of retinol, this study aims to describe the relationship between plasma retinol and the 5-year incidence of CVD mortality.

METHODS AND RESULTS: Community-dwelling adults (n = 441, 45% with type 2 diabetes) were recruited in Melbourne, assessed at baseline and followed for 5 years. At baseline, CVD risk factors were assessed by clinical evaluation, by personal lifestyle questionnaire and from biochemistry (plasma fasting glucose, lipids, total homocysteine, C-reactive protein, retinol and carotenoids plus the urinary albumin excretion rate over 24 h.). Dietary intake was assessed by a validated food frequency questionnaire. CVD mortality over 5-years was determined by consulting state or national registries. The majority of participants had adequate plasma retinol concentrations (≥30 μg/dL). The final Cox regression model indicated that those in the highest tertile of plasma retinol (mean ± SD 76 ± 14 μg/dL) had a significantly lower risk of 5-year CVD mortality (hazard ratio 0.27 [95% confidence interval 0.11, 0.68], P = 0.005), an effect that was not readily explained in terms of traditional CVD risk factors or dietary intake.

CONCLUSION: In well-nourished older Australian adults, plasma retinol was inversely associated with CVD mortality via mechanisms apparently unrelated to established CVD risk factors and dietary intake.

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