Hypocaloric dietary advice targeting increased N-3 pufa intake does not increase blood pressure reduction over 3 months

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Abstract
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Epidemiological studies report an inverse association between long chain n-3 PUFA (LCn-3PUFA) intake and blood pressure (BP). This study assessed 3-month change in BP in participants enrolled in a 12-month weight loss trial targeting increased LCn-3PUFA intake.

Methods: A parallel randomised placebo-controlled trial was conducted in 118 obese Australian adults (mean ± SD BMI 31.3 ± 3.5 kg/m²; age 45 ± 10 years). Participants received (1) low calorie dietary advice (2 MJ energy deficit; 30%E fat, 45%E carbohydrate, 25%E protein) + placebo (1 g olive oil) (Control), (2) low calorie dietary advice emphasising two servings (180 g) fatty fish/wk + placebo (Fish), or (3) low calorie dietary advice emphasising fish diet + LCn-3PUFA supplements (Fish+S).

Results: At 3 months, all groups lost a similar amount of weight, Control: -5.1 ± 3.3; Fish: -4.3 ± 2.8; Fish+S: -4.8 ± 3.2 kg. There was a trend for greater reductions in systolic BP in the intervention groups, Fish: -4.24 ± 14.11; Fish+S: -6.83 ± 8.79; Control: -2.75 ± 10.30 mmHg, but this was not significant in models that adjusted for weight change (systolic BP: p = 0.600; diastolic BP: p = 0.574). No associations were found between change in BP and change in total n-3PUFA, n-6PUFA or individual red blood cells fatty acids.

Conclusions: Weight loss is a more important predictor of change in BP, regardless of the amount or type of dietary fat consumed.

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