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Abstract

Regular Consumption of Either Red Meat or Soy Protein Does Not Raise Cardiovascular Disease Risk Factors in Men at Heightened Risk †

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Red meat restriction in the diet is increasingly recommended, with vegetarian-based diets being promoted. There are concerns about red meat intake, based on epidemiological evidence linking increased intake to elevated chronic disease risk (including cardiovascular disease (CVD)). However, the interventional evidence is poor, and epidemiological evidence inadequately describes the CVD risk impact of red meat quality, including ultra-processed meats, or the fatty acid profile (e.g., saturated or omega-3 (n-3) fatty acid content). This study aimed to determine the effects of high quality fresh red meat on CVD risk profiles following 8 weeks' consumption of New Zealand Wagyu-cross beef (WB, high n-3), Angus beef (AB, lower n-3) or soy protein alternative (SA, no n-3) in men at heightened CVD risk. In a single-blinded, parallel trial, 50 regular meat-consuming men with heightened CVD risk (35–55 years, BMI 25–35 kg/m^2, and elevated non-fasting total cholesterol, LDL-C, triglycerides and/or lower HDL-C) were randomised to consume 500 g weekly (across 3 servings) of red meat (as either WB or AB) or vegetarian SA. All other sources of red meat were avoided. Blood

samples and anthropometric measures (including DEXA) were collected before and after 8 weeks. Plasma lipoprotein profiles were measured using nuclear magnetic resonance (NMR). Total cholesterol, LDL-C, and HDL-C decreased after 8 weeks in all interventional groups. LDL particle size was unchanged, but small-HDL particle number decreased after 8 weeks. Insulin sensitivity assessed using homeostatic assessment of insulin resistance (HOMA-IR) and glycated haemoglobin (HbA1c) were unchanged. Total body fat % and waist circumference decreased in all groups, but android body fat % increased. The inclusion of red meat, as WB or AB, three times per week over 8 weeks in a free-living diet did not negatively impact markers of CVD risk or insulin sensitivity in men with heightened risk, as was also shown with SA consumption.