

Chronic musculoskeletal pain, physical function, and dietary intake in Australian adults with overweight and obesity

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Excess weight and musculoskeletal pain both adversely affect health, physical functioning and quality of life. Diet is a key driver of a higher weight status, increasing the risk of reporting chronic musculoskeletal pain (CMP)⁽¹⁾ and may influence the prevalence and persistence of pain.⁽²⁾ Dietary patterns and obesity can both influence inflammation which can contribute to CMP⁽³⁾; however, few studies have examined the association between dietary intake and CMP. The aim of this study was to compare dietary intake, physical function and inflammation (C-Reactive Protein (CRP)) in overweight and obese adults with and without CMP. A cross-sectional analysis of baseline data was conducted in 140 adults (25–65 years, body mass index (BMI) 26.5–35.3 kg/m²) enrolled in a dietary weight-loss intervention trial. Dietary intake was captured via 4-day food-diaries to provide estimates of daily total energy (kJ), macronutrients and food group serves (FoodWorks; Xyris Australia). Anthropometric (height, weight, waist circumference and body composition) measures and venous blood samples (CRP) were assessed. Physical function was assessed via a timed up-and-go test (TUG). Participants reported current sites of pain and pain duration on a body chart. Differences in dietary intake, CRP and physical function between those with and without CMP were assessed using independent t-tests / Mann-Whitney U-tests as appropriate. Participants were predominantly women (70%), aged 47.4 ± 10.9 years, and obese (BMI 30.7 ± 2.3 kg/m²). Sixty-four (47%) participants reported CMP. The majority reported pain in one (*n* = 36, 56%) or two sites (*n* = 20, 31%), with the lower back identified as the most troublesome site of pain for most (*n* = 21, 33%). There were no significant differences in age, gender, anthropometric measures, CRP, or physical function (TUG) between participants with or without CMP. There were no significant differences in energy intake (kJ), or energy contribution from carbohydrates, protein or total fats. Energy contribution from saturated fat was above recommendations (13.9 ± 2.8%), but there was no difference between those with or without CMP. Alcohol, sodium, added sugars and caffeine intake also did not differ. Participants tended to meet recommended serves of grains (67% meeting), but the majority failed to meet recommended serves of fruits (17%), vegetables (29%), protein foods (41%) or dairy and alternatives (30%), and this did not differ between individuals with and without CMP. Participants with CMP consumed more dietary fibre than those without CMP (26.0 ± 8.6 v. 23.3 ± 6.2 g/day, *p* < 0.05). In adults with overweight or obesity, the presence of CMP was not associated with differences in dietary intake. Overall diet quality in this population was poor, and longitudinal follow-up will explore whether improvements in diet quality and weight loss reduces inflammation, improves physical function and reduces pain.

References

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