

## LETTER TO THE EDITOR

# Obesity and rural health – a neglected risk factor for knee osteoarthritis

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## Dear Editor

We would like to draw your attention to the fact that obesity and osteoarthritis (OA) are both major health problems in Australia. A recent prevalence study demonstrated that 67% of Australian men, and 52% of Australian women have a Body Mass Index (BMI) exceeding 25 kg/m<sup>2</sup>. Alarming, one-quarter of Australian primary school students are overweight or obese<sup>2,3</sup> and the rate of Australian obesity is increasing<sup>4</sup>. Osteoarthritis is the third leading cause of disease-burden, measured as disability-adjusted life years in the developed world, and is predicted to increase over the coming decades<sup>4</sup>. Obesity is arguably the most important

modifiable risk factors for knee OA<sup>5,6</sup>. By 2016, it is estimated that there will be a 50% increase in the prevalence of Australian obesity<sup>4</sup>, which is likely to further compound the burden of knee OA. Already, the workplace cost of musculoskeletal diseases is highest among people with a BMI of 27.5 kg/m<sup>2</sup> or greater<sup>7</sup>. Since OA further impairs mobility, the arthritic population may struggle to effectively control their weight through exercise, setting up a vicious disease cycle.

Geographically, the prevalence of obesity tends to be higher in rural rather than urban populations. In regional Australia in 2001, males were 1.05 and females 1.10 times more likely to be overweight or obese when compared with their urban



counterparts<sup>8</sup>. Indigenous Australians in remote communities have also been shown to have a larger BMI than the general population<sup>8,9</sup>. Given the limited and costly access to health services in regional Australia<sup>10</sup>, the obesity epidemic threatens to have detrimental implications for rural health and, therefore, the national healthcare system. For example, in the context of OA, the risk for knee joint replacement is greater in people who are obese<sup>11</sup>. Currently, considerable waiting lists for joint replacement secondary to OA exist in Australia, and prolonged waiting for joint replacement has been associated with significant psychological distress<sup>12</sup>. The obesity epidemic threatens to further compound surgical waiting times, particularly in rural settings, where access to health services is limited.

Weight management, therefore, becomes crucial to the prevention and management of knee OA. For each additional kg/m<sup>2</sup> increase in people whose BMI is greater than 27, there is a 15% increased risk for knee OA<sup>5</sup>. Moreover, weight loss can help prevent OA. When 64 women with confirmed radiographic knee OA were compared with women without the disease, a reduction in the BMI of two or more units over the 10 years before follow up decreased the odds for developing knee OA by over 50% (OR 0.46; 95% CI 0.24 to 0.86)<sup>6</sup>. People with a high risk for OA, defined by elevated baseline BMI (>25 kg/m<sup>2</sup>), also decreased their risk for the onset of OA by weight loss of 2 or more BMI units (OR 0.41)<sup>6</sup>. Furthermore, people with knee OA who lose weight report a reduction in knee pain<sup>13</sup> and demonstrate functional improvement<sup>14</sup>.

How to best promote weight management in the rural setting is challenging. Although a recent survey that included patients from rural Australia demonstrated that 78% of respondents thought that GPs had a role in weight management, only 46% of patients thought that GPs would have enough time to focus on giving weight-loss advice<sup>15</sup>. Indeed, 72% of the doctors stated that they had limited time to provide dietary counselling<sup>16</sup>. Moreover, 72% of doctors felt ill-prepared to give dietary counselling, while 95% lacked confidence in their ability to help patients make meaningful dietary changes<sup>16</sup>. These data indicate the need

for primary healthcare physicians to receive further weight management training, as well as prioritising weight management among their communities.

Preventative measures are also required to help curtail Australian adult obesity. In particular, children and adolescents must be targeted. An Australian study demonstrated excessive amounts of energy-dense foods in school lunchboxes, and it was recommended that health promotion target school-based diets of Australian children<sup>17</sup>. Reviews of school canteen menus by dietitians, as well as incorporating dietary advice and exercise into the school curriculum may prove beneficial. Nevertheless, a recent systematic review examining interventions for preventing childhood obesity concluded that studies that focused on combining dietary and physical activity approaches did not significantly improve BMI<sup>18</sup>. However, the authors recommended that the appropriateness of development, design, duration and intensity of interventions to prevent childhood obesity need to be reconsidered, alongside comprehensive reporting of the intervention scope and process.

The effects of obesity on musculoskeletal diseases such as OA are often overlooked, despite evidence that maintaining an ideal body weight benefits joint health<sup>5,6,13,14</sup>. Given the increasing rates of obesity in rural Australia, as well as the reduced access to health professionals, the obesity epidemic is likely to have a major impact on rural health. In the context of both OA and other health and social issues, it is important that the potential medium- and long-term impact of rising obesity rates on rural communities are not forgotten and strategies are implemented to address such issues.

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