Perspectives

A better understanding of the science and reality of obesity is urgently needed

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Article history

Key points

- Increasing obesity prevalence is largely a biological response to an obesogenic environment
- Better understanding of the determinants and biology of obesity is needed to inform effective prevention and treatment initiatives and policies
- A profound change in the way we think about and act on obesity is required
- Collectively, we need to overcome barriers to action

Abstract

Efforts to prevent and treat obesity need to be grounded in science. A historical focus on individual responsibility has been ineffective in halting the rise in obesity prevalence. There needs to be a better understanding of environmental and biological drivers of weight gain to help reduce weight bias and stigma and identify more effective policies for action.

Introduction

In the decade to 2018, the number of adults in Australia living with obesity more than doubled.[1] A historical focus on individual responsibility has been ineffective in halting this rise in prevalence. A better understanding of environmental and biological factors that drive obesity is urgently needed.

Drivers of obesity

Environmental drivers of obesity

'Obesogenic environments' and the policies and regulations that shape them have substantially driven a rapid rise and sustained high levels of global obesity rates since the 1970s.[2] In these obesogenic environments: unhealthy food is accessible, relatively cheap and heavily promoted; the built environment reduces opportunities for physical activity; and social norms facilitate eating and sedentary behaviours that result in energy imbalance. Political contexts that prioritise economic growth support the dominance of obesogenic environments.[3] Although such economic policies have many

benefits, such as improved food security, systemic incentives for ever-increasing consumption have led to high levels of obesity as well as other societal problems, including rising greenhouse gases and environmental degradation.[4]

Obesity affects all of society, but rates can vary substantially by socio-economic group.[5] People in the highest income groups, with higher education, or living in advantaged neighbourhoods, are more likely to eat a healthy diet, be physically active, have a healthy weight and experience better health outcomes. In contrast, people in disadvantaged circumstances, in remote areas or with a disability are less likely to eat a healthy diet or be physically active. Although many factors influence socio-economic inequalities in obesity, key drivers are affordability of healthy foods, and targeted marketing of unhealthy food to populations with lower socio-economic status. The evidence is clear that individuals' lack of knowledge or self-control are not the primary causes of high population-levels of obesity. Instead, when people live in an obesogenic environment, the odds of having a healthy weight are heavily stacked against them.

Biological drivers of obesity

Understanding the biology of obesity, and its interaction with obesogenic environments is fundamental for treating obesity and for the success of prevention efforts. The World Obesity Federation describes obesity as a "chronic, relapsing, progressive disease process":[6]

"Chronic, progressive": Obesity is a long-term condition, and many people experience slow progressive weight gain during early to middle adulthood.[7] Genetic factors can determine an individual's fat composition and susceptibility to weight gain, as our genes provide a blueprint for the structure and function of neural circuits and the nature of the hormonal milieu that collectively mediate appetite and energy expenditure.[8]

"Relapsing": Weight loss activates a barrage of counterbalancing mechanisms – most prominently increases in drivers of appetite and decreases in energy expenditure.[9] This 'metabolic adaptation', built into our genetics, serves to prevent life-threatening weight loss in times of food scarcity, but is one of the reasons why many people find it so difficult to maintain weight loss.[10]

"Disease process": A disease is defined by deviation from a healthy structure or function of an organ or system, resulting in pathologic consequences that affect health. This process applies to obesity. Complications of obesity can be metabolic, mechanical, psychological and economic. These complications and experiences are heterogenous; however, in general, if obesity progresses and remains untreated, the number and severity of these complications will increase.[11]

These biological drivers provide clarity as to why some people are more affected, why weight regain is a constant challenge, and why professional support is required for some people to achieve their health goals.

Emerging research evidence suggests that a range of factors influence obesity risks, such as mental health and stress, inflammatory responses, sleep patterns, the microbiome[12], and endocrine disrupting chemicals in the environment.[13]

Science has also paved the way for more effective treatment approaches, including medications and surgeries, many of which mediate the effects of biological drivers in subcortical regions of the brain and physiological changes, which can help enable long-term weight loss.[14,15]

A fundamental shift in thinking about obesity

The increase in obesity prevalence is largely a biological response to the obesogenic environment. People with obesity are not treated fairly in society, including by the health system, due largely to a lack of understanding of the science and reality of obesity. A profound change in the way we think about and act on obesity is required.

The way we think

Effective prevention and treatment of obesity requires understanding of its determinants and biology. We need accurate and accessible information related to obesity, effectively disseminated to healthcare practitioners, policy makers and the general public. Importantly, shifting the narrative from personal responsibility to a more accurate view of healthy behaviour in the framework of biological constraints will help reduce weight stigma. People with lived experience of obesity need to be included as valued experts in creating solutions and reducing stigma.

The way we act

No one program or initiative will solve obesity. Both prevention and treatment initiatives are needed and failure to recognise that fact creates a false dichotomy, of prevention versus treatment, which is a barrier to progress as both are essential. To help those experiencing the health effects of obesity, a broad range of interventions and systems-level thinking is required, including policy changes, investment in public health prevention, and access to evidence-based, person-centred support, treatment and care.

Creating healthier environments requires a comprehensive societal response, including a broad range of policies at multiple levels (local, state and national) and across many sectors (including health, education, sport, trade and transport).[16] Policy actions are needed in diverse areas including: urban planning, to increase neighbourhood walkability; standards for food production, labelling and marketing; community engagement in prioritising health; addressing poverty and food insecurity; and influencing foods available in

retail outlets and specific settings (such as schools and hospitals).

Conclusion

In light of the science, its personal health effects and its societal costs, obesity must be a priority for the health system. Many Australians with obesity aren't offered person-centred care because there is often a poor understanding of the science of obesity among members of the community, some healthcare professionals, politicians and policy makers and a paucity of evidence-based resources, services, and pathways in the health system. No single approach to weight management will work for everyone, so implementing a suite of evidence-based strategies and stepped approaches are needed. Without these, there is too much room for inaction, misinformation, confusion, blame and stigma.

In Australia, there has been limited implementation of policies to address obesity. Collectively we need to overcome a lack of political commitment, misinformation, influence from vested interests, stigma and bias, and the false dichotomy of prevention versus treatment.

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Author contributions

All authors contributed to the writing, review and final approval of the manuscript.

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