**ACTIVITY: Futures thinking about obesity**

**Activity idea**

In this activity, students use the Futures thinking tool to investigate obesity and the impact it has on the health system.

By the end of this activity, students should be able to:

* define the term ‘obesity’
* explain how body mass index (BMI) can be used to evaluate a person’s body weight and associated risk of disease
* describe some of the medical conditions that are more prevalent in people who are obese
* discuss possible future measures to control obesity in the population having used the Futures thinking tool.

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**Introduction/background**

Obesity is defined as a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems.

One way of evaluating a person’s body weight is to use a measure known as the body mass index or BMI. To calculate a person’s BMI, the following formula is used:

BMI = body mass in kg ÷ (height in m)2

These cut-off points are intended to identify people at increased risk of health conditions associated with increasing BMI:

* The normal BMI range is 18.5–24.9kg/m2.
* Adults with a BMI of 25.0–29.9 are considered to be overweight.
* Adults with a BMI of 30 or greater are considered obese.

Overweight and obesity are risk factors for most serious chronic diseases including type 2 diabetes, heart disease, stroke and certain types of cancers.

The World Health Organisation (WHO) now describes the occurrence of obesity as an epidemic. A New Zealand health survey conducted in 20016/17 found that:

* around 1 in 3 adults were obese and a further 34% were overweight. The adult obesity rate increased from 27% to 32% in the 10-year period from 2006/6 to 2016/17.
* around 1 in 8 children (aged 2-14 years) were obese and a further 21% were overweight. The child obesity rate increased from 8% to 12% in the 10-year period from 2006/6 to 2016/17.

The burden that this epidemic is placing on our health system is unsustainable, and reducing obesity is one of the Ministry of Health’s main priorities.

**What you need**

* Access to the [Futures thinking tool](https://www.sciencelearn.org.nz/resources/2439-futures-thinking-toolkit)
* Access to a range of obesity related websites:
* Obesity in New Zealand – [www.moh.govt.nz/obesity](http://www.moh.govt.nz/obesity)
* Maintaining a healthy bodyweight – [www.nutritionfoundation.org.nz/nutrition-facts/maintaining-a-healthy-bodyweight/children](http://www.nutritionfoundation.org.nz/nutrition-facts/maintaining-a-healthy-bodyweight/children)
* BMI calculator – [www.heartfoundation.org.nz/healthy-living/losing-weight/bmi-calculator](http://www.heartfoundation.org.nz/healthy-living/losing-weight/bmi-calculator)
* Type 2 diabetes – <https://diabetes.org.nz/what-is-diabetes/type-2-diabetes>
* [Obesity resources on the Hub](https://www.sciencelearn.org.nz/?search=true&query=obesity)

**What to do**

1. Introduce the activity with some background information.
2. Have students undertake background research using the web resources listed above, then use the [Futures thinking tool](https://www.sciencelearn.org.nz/resources/2439-futures-thinking-toolkit) to think about the current obesity epidemic and what might happen in the future. The tool asks students to think about the existing situation, trends or changes there have been over time, drivers or what has been behind the changes, what might be available in the future and who might have access to it and what students think should be available and why. Students could do this as a group in consultation with each other, or it could be done individually. Student/group ideas could be shared with the class.

**Futures thinking tool example**

***Existing situation***

With about 34% of adults overweight and about 32% obese, the incidence of diet-related diseases such as cardiovascular disease, type 2 diabetes, stroke and various types of cancers is on the rise. The burden being placed on an already overstretched health system is unsustainable.

The cost of treating the increasing number of type 2 diabetes patients alone could bankrupt the budget for healthcare if nothing is done to prevent people developing it. Up to two-thirds of cases are preventable if people make lifestyle changes by eating healthily and doing more exercise.

In New Zealand, urban life for many people involves consumption of cheap energy-rich food, easy access to mechanised transport, low workplace physical activity and a sedentary lifestyle.

***Trends***

The evolutionary history of humankind has resulted in the development of a metabolic system able to cope in times of plenty and in times of famine. The hunter-gatherer lifestyle was replaced by farming and settlement in fixed communities. With the industrial revolution came mechanisation and the ability to manufacture food items. Today, most people live in urban areas with easy access to supermarkets and fast food outlets.

***Drivers***

1. Changing dietary and food preparation patterns in recent decades including:
* economic factors resulting in a marketplace full of a huge variety of cheap high-energy foods
* the development of a ‘super-sizing, buy more, eat more’ mentality amongst some consumers
* food preparation time reduced to fit in with the busy urban lifestyle.

1. Changing physical activity patterns including:
* increasing reliance on mechanised transport rather than walking or cycling
* increasing use of TV, DVDs, computer games and the internet for entertainment
* school curriculum changes that have resulted in less time being allocated to physical education
* exercise increasingly seen as a means of reducing risk of chronic diseases rather than as a means of improving one’s everyday performance.
1. Societal changes in recent decades including:
* the need for both parents/partners to work, leaving less time for meal preparation and supervision at mealtime
* fast food outlets becoming increasingly available, offering longer operating hours and delivery options
* advertising campaigns promoting consumption of energy-rich foods and drinks.

***Possible futures***

If the obesity epidemic is allowed to run its course unchecked, the health system will be overwhelmed with increasing numbers of citizens requiring medical attention for diet-related diseases. The cost of providing the extra care needed could have a severe impact on the health budget.

***Preferable futures***

1. Public education programmes to inform people of the future harm to the health of the nation as well as the economy if this epidemic is not contained:
* The Government has a range of approaches – as listed on the [Ministry of Health website](https://www.health.govt.nz/nz-health-statistics/national-collections-and-surveys/surveys/current-recent-surveys/new-zealand-health-survey/improving-health-new-zealanders#obesity).
* Specific initiatives for young people include the [Childhood Obesity Plan](https://www.health.govt.nz/our-work/diseases-and-conditions/obesity/childhood-obesity-plan) and Raising healthy kids
* [Healthy eating resources](https://www.healthed.govt.nz/search?query=&type=resource&language=All&organisation=All&topic%5b0%5d=23&online_only=All&sort_by=search_api_relevance&sort_order=DESC&mode=picture-view&page=2) are available in a multiple languages (several Polynesian and immigrant languages).
* More strategies tailored to the needs of lower socioeconomic groups, such as [Diabetes Projects Trust](http://www.dpt.org.nz/) , [Health Promoting Schools](http://hps.tki.org.nz/) programme, breakfast/lunch in schools such as [KickStart Breakfast](https://kickstartbreakfast.co.nz/), [KidsCan](https://www.kidscan.org.nz/our-work/food-for-kids) and many local programmes.
* This [Stuff article](https://www.stuff.co.nz/life-style/well-good/89573648/Weighed-down-20-years-of-Government-action-on-obesity) provides an insight into how difficult it has been for the government to influence our eating habits.
1. Price incentives to encourage healthy eating. A variety of proposals in this area include:
* subsidising healthy food or additional taxes on unhealthy food
* smartcard electronic subsidy system
* reduced premiums on health insurance.

See articles:

* Should we pay people to lose weight? Read the pros and cons in this [Sciblogs post](https://sciblogs.co.nz/food-stuff/2009/09/24/should-we-pay-people-to-lose-weight/).
* New Zealand study proves benefit of price discounts on healthy foods as reported in this [New Zealand Herald article](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10629756).
1. Introduction of a [simple health star food labelling system](https://www.sciencelearn.org.nz/resources/2477-guiding-food-choices) as opposed to a daily intake guide so that consumers don’t have to understand percentages and make complex calculations. This suggestion has pitted industry (food and advertising) against the health sector. Industry favours a focus on educating consumers to make healthy choices while the health sector favours making changes to the environment that make healthy choices easier. However, health star ratings have their own detractors.

See articles:

* Clash of views on healthy food labelling
* [Health Star rating system ‘may mislead shoppers’](https://www.stuff.co.nz/business/91971947/health-star-rating-system-may-mislead-shoppers)
* [A year on, Australia’s health star food-rating system is showing cracks](https://theconversation.com/a-year-on-australias-health-star-food-rating-system-is-showing-cracks-42911).
1. Development of plant-based foods that work on the satiety centre of the brain such that intake of excess food is ameliorated.
* Plant & Food Research is currently working on developing such foods, see the article [Foods to keep us feeling full](https://www.sciencelearn.org.nz/resources/2551-foods-to-keep-us-feeling-full).
* Professor Roger Lentle (Institute of Food, Nutrition and Human Health at Massey University), see the article [Fern’s hunger-busting properties](https://www.sciencelearn.org.nz/resources/2552-fern-s-hunger-busting-properties).
* Find out more about high value food production in the article [Developing healthy food products – introduction](https://www.sciencelearn.org.nz/resources/2481-developing-healthy-food-products-an-introduction).