

14. Diet and nutrition

Adolescence is a time where food and nutrition choices are increasingly made by young people for themselves, rather than by their parents on their behalf. Many young people who leave the family home have to prepare their own meals, some for the first time. Some adopt unhealthy eating habits, which can vary greatly: some will severely limit their food intake, whereas others will consume a large amount of foods containing high levels of fats or sugars with little nutritional value. Eating habits established in adolescence may persist into adulthood. Poor nutrition has been associated with a number of illnesses, including obesity, coronary heart disease, stroke, hypertension, some cancers, type 2 diabetes, and osteoporosis (AIHW: Lester 1994). Adolescence is also a time when young people's bodies are developing rapidly and they can become almost obsessively concerned about their physical appearance, including body weight. The National Health and Medical Research Council (NHMRC 2003) suggests that a healthy diet for children and adolescents should include a wide variety of nutritious foods: fruit and vegetables, cereals (including breads, rice, pasta), lean meat, meat alternatives such as legumes and nuts, and reduced-fat dairy foods. Saturated fats should be limited in the diet and the total fat intake should be moderate. Foods should be low in salt, and only moderate amounts of sugars should be consumed. Young people should be encouraged to drink water rather than sweetened soft drinks, and engage in physical activity. Examples of two different eating patterns are shown in Table 14.1, one illustrating a high consumption of cereals, the other illustrating a smaller consumption of cereals.

Table 14.1: Sample daily serves suggested for children and adolescents

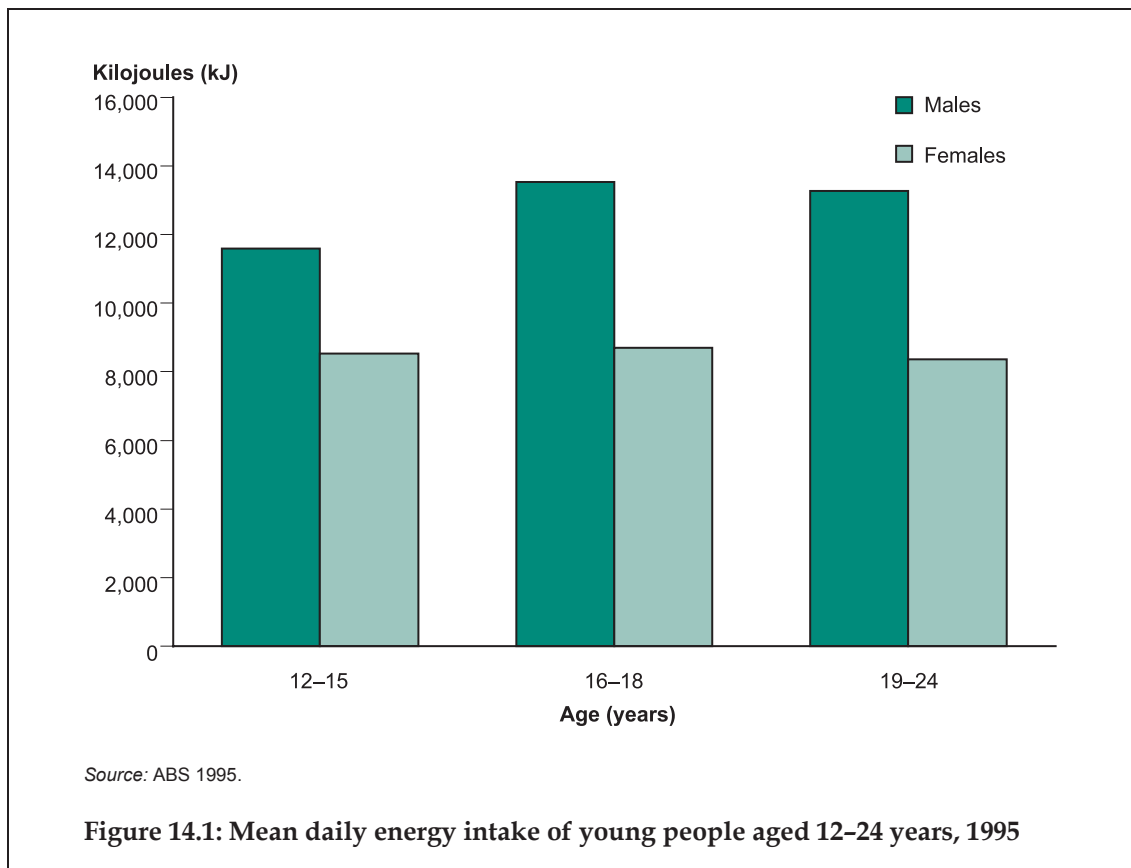
| Children and adolescents | Bread, cereals, rice, pasta, noodles | Vegetables, legumes | Fruit | Milk, yoghurt, cheese | Meat, fish, poultry, eggs, nuts, legumes | Extra foods |
|--------------------------|--|------------------------|-------|-----------------------------|--|----------------|
| Children 4–7 years | | | | | | |
| High cereals | 5–7 | 2 | 1 | 2 | ½ | 1–2 |
| Less cereals | 3–4 | 4 | 2 | 3 | ½–1 | 1–2 |
| Children 8–11 years | | | | | | |
| High cereals | 6–9 | 3 | 1 | 2 | 1 | 1–2 |
| Less cereals | 4–6 | 4–5 | 1–2 | 3 | 1–1 ½ | 1–2 |
| Adolescents 12–18 years | | | | | | |
| High cereals | 5–11 | 4 | 3 | 3 | 1 | 1–3 |
| Less cereals | 4–7 | 5–9 | 3–4 | 3–5 | 1–2 | 1–3 |

Source: NHMRC 2003.

- Adolescents require more serves of these basic food groups than do children. In particular, the NHMRC recommends a high intake of vegetables (4–9 serves daily) and fruits (3–4 serves daily), particularly if fewer cereals are being consumed.
- Consumption of cereals is important (between 4 and 11 serves per day), as is consumption of dairy products (between 3 and 5 per day). Snacks and extra foods may be enjoyed in moderation as part of a healthy diet.

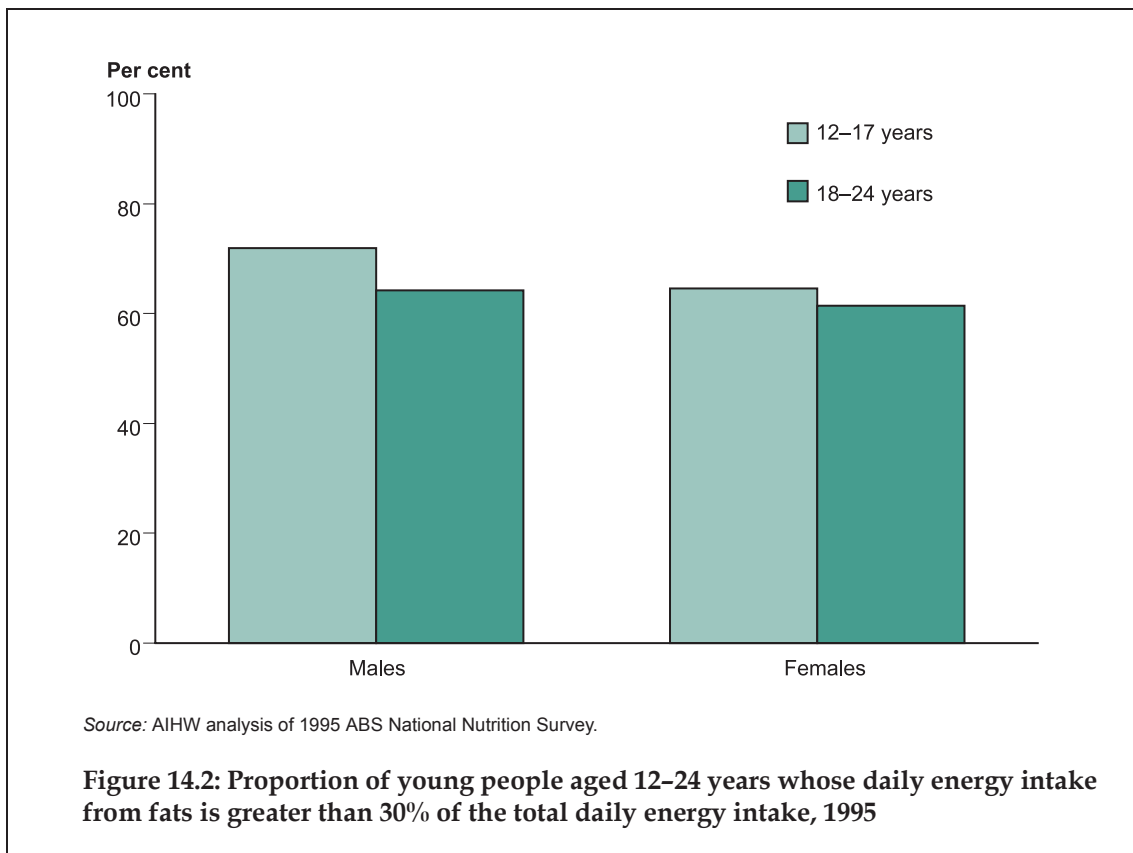
Adolescents need to consume a reasonably high amount of energy to facilitate growth and development. All people have a minimum caloric requirement for sustaining normal body functions. This requirement is influenced by age, height, rate of growth, body composition and stress. Young people in general have a higher caloric requirement than older people. Despite this, if more energy is consumed than is expended by the body, that energy will be stored in the body. The 1995 ABS National Nutrition Survey collected information on foods and beverages consumed during the

day before the interview (midnight to midnight). The nutrient composition was determined from the details supplied. The mean daily energy intake of young people aged 12–24 years is shown in Figure 14.1.



- In all age groups, the mean daily energy intake was higher for males than for females.
- Mean daily energy intake was relatively consistent among females in this age group, at just over 8,000 kJ.
- Mean daily energy intake was greater in older boys than in boys aged 12–15 years (over 13,000 kJ, compared with 11,500 kJ).

The NHMRC recommends that approximately 30% of young people's daily energy intake should be from fats. The proportions of young people who consume more than the recommended level of fats are shown in Figure 14.2.



- A majority (65%) of young persons aged 12-24 years consumed more fats than recommended by the NHMRC.
- Slightly more young people aged 12-17 years consumed more fats than recommended by the NHMRC (72% of males, 65% of females) than did those aged 18-24 years (68% of males, 63% of females).
- A greater proportion of males consumed more than recommended levels of fats than did females.
- Although the majority of young people consume more than recommended levels of fats, it is difficult to examine nutritional data in the absence of data on physical activity, as both factors are important with regards to weight status and health.

The proportions of young people who had consumed from major food groups are shown in Table 14.2.

Table 14.2: Consumption from major food groups among young people aged 12–24 years, 1995 (per cent)

| Major food groups | 12–15 years | | 16–18 years | | 19–24 years | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| | Males | Females | Males | Females | Males | Females |
| Cereals and cereal-based products | | | | | | |
| Cereals and cereal products | 98.1 | 95.1 | 93.9 | 93.0 | 91.4 | 90.2 |
| Cereal-based products and dishes | 73.6 | 70.0 | 64.7 | 71.2 | 71.3 | 62.0 |
| Fruit products and dishes | 49.9 | 58.0 | 39.9 | 41.1 | 31.9 | 41.4 |
| Vegetables and legumes | | | | | | |
| Vegetable products and dishes | 78.8 | 85.9 | 83.1 | 85.8 | 84.7 | 86.5 |
| Legume and pulse products and dishes | 7.1 | 5.8 | 5.8 | 8.3 | 5.6 | 8.2 |
| Milk products and dishes | 92.8 | 90.8 | 94.2 | 87.3 | 89.1 | 90.1 |
| Meat, poultry and game products and dishes | 78.8 | 80.2 | 80.9 | 74.5 | 84.1 | 74.0 |
| Fish and seafood products and dishes | 12.8 | 11.2 | 8.8 | 16.7 | 16.0 | 15.8 |
| Egg products and dishes | 12.3 | 8.7 | 18.1 | 8.5 | 15.7 | 12.8 |
| Snack foods, sugar and confectionery | | | | | | |
| Snack foods | 28.7 | 38.4 | 24.4 | 24.1 | 18.9 | 17.7 |
| Sugar products and dishes | 58.1 | 53.2 | 56.8 | 44.9 | 60.5 | 59.4 |
| Confectionery | 46.7 | 51.3 | 37.2 | 39.9 | 26.8 | 32.4 |
| Other foods | | | | | | |
| Seed and nut products and dishes | 10.9 | 8.3 | 7.7 | 9.8 | 10.3 | 10.8 |
| Fats and oils | 76.5 | 73.2 | 65.7 | 66.9 | 72.9 | 63.7 |
| Soup | 5.7 | 5.8 | 3.6 | 4.5 | 6.4 | 10.8 |
| Savoury sauces and condiments | 56.9 | 52.8 | 61.8 | 63.0 | 61.6 | 51.7 |
| Beverages | | | | | | |
| Non-alcoholic beverages ^(a) | 99.6 | 100.0 | 99.7 | 100.0 | 99.8 | 99.7 |
| Alcoholic beverages ^(b) | 0.5 | 1.3 | 16.0 | 12.0 | 28.8 | 17.6 |
| Total^(c) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

(a) Includes plain drinking water.

(b) Includes all alcoholic beverages containing alcohol (e.g. whisky, reduced alcoholic beer) and does not indicate amount of pure alcohol consumed.

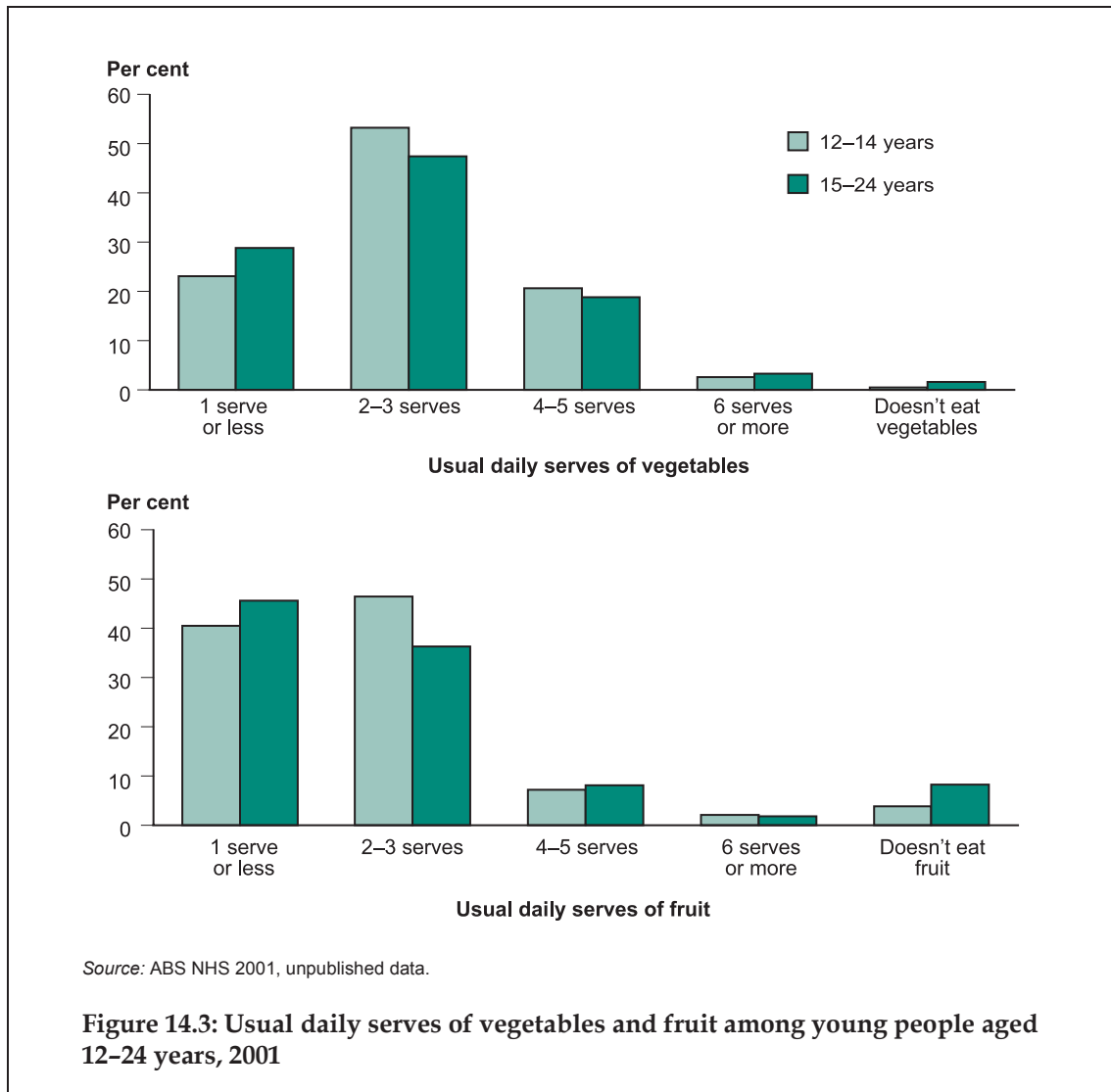
(c) Total includes infant formula and food, special dietary foods and miscellaneous foods.

Source: ABS 1995.

- Most young people aged 12–24 years reported consuming cereals and cereals-based products on the day before interview. However, the proportion decreased with age.
- A high proportion consumed meat, dairy foods, and vegetables every day.
- In most age groups, less than 50% of young people had consumed fruit on the day prior to interview.

Inadequate consumption of fruit and vegetables is responsible for 3% of the total burden of disease among Australians, with most of this burden (75%) due to cancer, and much of the remaining burden relating to heart disease and stroke (AIHW: Mathers et al. 1999). Although a recent 5-year study found that supplementation of diets with antioxidants did not have an effect on mortality, cardiovascular disease, stroke or cancer (Heart Protection Study Collaborative Group 2002), circumstantial evidence shows that a diet high in antioxidants has been associated with increased health benefits (Heart Foundation 2003a).

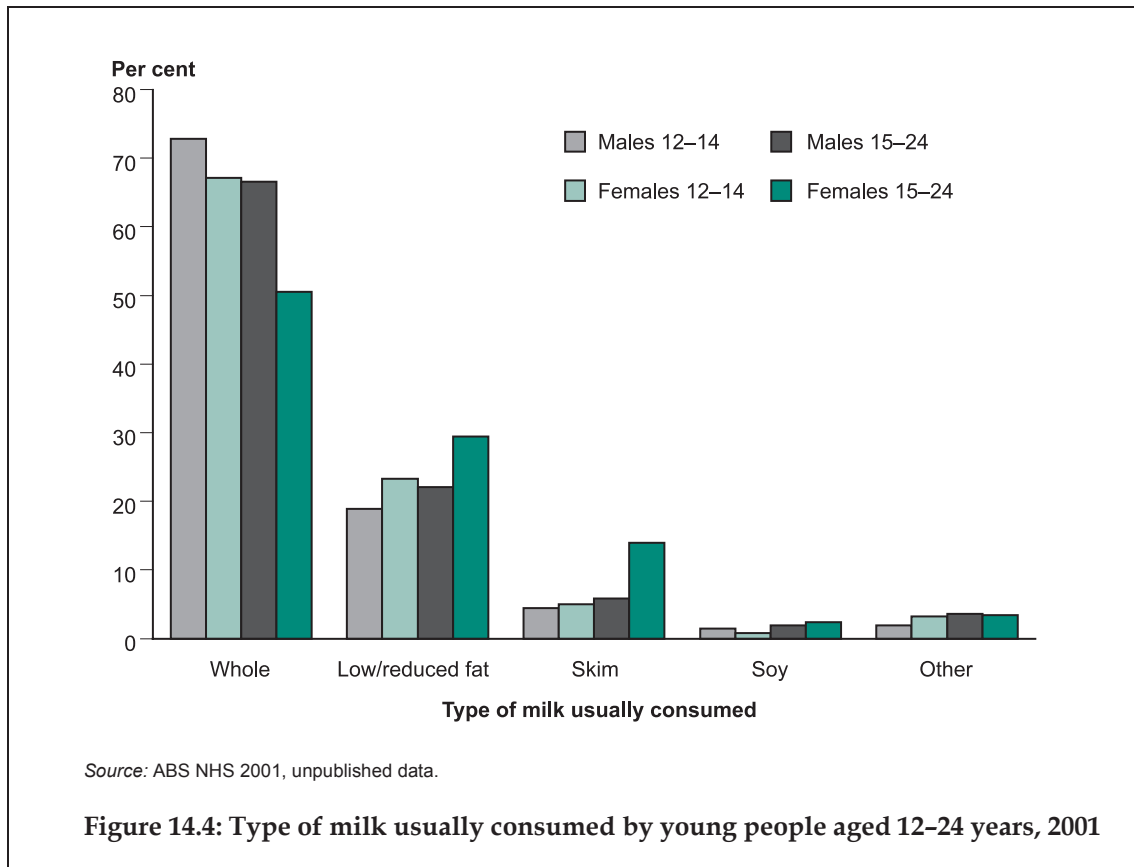
Current NHMRC guidelines suggest eating at least 5 serves of vegetables and 2 serves of fruit every day. The 2001 ABS NHS collected information on selected dietary habits among young people, including fruit and vegetable consumption (Figure 14.3).



- In 2001, a high proportion of young people reported that they consumed lower than the recommended daily amounts of fruits and vegetables: 77% of those aged 12-14 years and 78% of those aged 15-24 years ate less than 4-5 serves of vegetables, and 44% of those aged 12-14 and 54% of those aged 15-24 years ate less than 2-3 serves of fruit.
- Of those aged 12-14 years, 23% consumed 4-5 or more daily serves of vegetables, and 56% 2-3 or more daily serves of fruit. Of those aged 15-24 years, the proportion consuming these amounts of vegetables and fruits were 22% and 46%, respectively.

Fruit and vegetable consumption patterns were fairly similar for males and females. The biggest difference was for males and females aged 15-24 years who did not eat fruit: 11% of males compared with 6% of females.

NHMRC guidelines recommend young people consume low-fat dairy foods. The usual milk consumption patterns of young people are shown in Figure 14.4.



- More young people consumed whole milk than any other type of milk, although consumption of whole milk decreased with age: 73% of males aged 12-14 years, compared with 67% of males aged 15-24 years, and 67% of females aged 12-14 years compared with 51% of females aged 15-24 years, consumed whole milk.
- The consumption of reduced-fat or skim milks increased with age, especially among females. Skim milk was consumed by 14% of young women aged 15-24 years, compared with only 5% of those aged 12-14 years.

The NHMRC recommends a low intake of salt. However, a substantial minority of young people reported that they usually add salt to their food after cooking: 20% of those aged 15-24 years, and 14% of those aged 12-14 years. In the age group 15-24 years, a higher proportion of males than females usually add salt to their food after cooking.

The 1995 ABS National Nutrition Survey asked young people whether they wanted to change their current consumption patterns. A substantial proportion said that they wanted to consume less fat (25% of males and 46% of females aged 16-18 years and 33% of males and 45% of females aged 19-24 years). A much smaller proportion wanted to consume more breads and cereals (between 9% and 15%, depending on sex and age group). A large proportion wanted to consume more fruits and vegetables: 31% of males and 40% of females aged 16-18 years, and 45% of males and females aged 19-24 years.

DiETING and disordered eating

Australian studies have shown that a large proportion of young people are worried about being overweight or want to be thinner, even among those who are healthy weight for their height and body type. Nowak (1998) found that, among Queensland adolescents aged 12–15 years, 52% of females and 27% of males wanted to weigh less. Grigg et al. (1996) found that among adolescent school girls aged 14–16 years, 77% wanted to weigh less and 51% had tried to lose weight in the previous month. Among the girls sampled, 63% saw themselves as overweight, when only 16% were actually overweight on the basis of their body mass index (BMI). Of those who were already underweight, 19% were currently trying to lose weight, and of those who were of normal weight, 56% were trying to lose weight. Patton et al. (1999) stated that dieting is the most important predictor of a new eating disorder, with the risk of an eating disorder developing increasing as the severity of dieting increases. Thomas et al. (2000) found that the most significant predictors of dieting were low self-esteem and high BMI. However, Paxton et al. (1999) found that individual body image concern and eating behaviour can be affected by the attitudes of friendship groups with members of Grade 10 friendship groups having similar levels of concern about body image, restricted eating and extreme weight-loss behaviours. These similarities were to some degree independent of BMI, depression, self-esteem and anxiety. Paxton et al. suggest this finding may be because girls may copy the behaviour of their friends and adopt the standard attitude towards dieting and body image, or it may be because girls who are similar choose one another as friends. Paxton et al. found that girls in friendship groups tended to be similar to each other on measures of BMI, depression and self-esteem, and that friendship groups which had high levels of negative emotions were also likely to have high levels of anxiety about losing weight.

Body image and dieting behaviours are related to peer and familial factors, but it also seems likely that they can be influenced by the mass media. Field et al. (1999) found that among girls in Years 5–12 in the United States, 69% reported that magazine pictures influence their idea of the perfect body shape, and 47% reported wanting to lose weight because of pictures they had seen in magazines. Only 29% were actually overweight. The frequency of reading fashion magazines was positively associated with having dieted to lose weight and having gone on a diet because of an article in a magazine. However, magazines also were promoting physical activity as a healthy way to control weight, and more girls reported exercising to lose weight than reported dieting.

Grigg et al. (1996) found that, in their sample, 33% of girls engaged in disordered eating (recurrent binge eating, vomiting after a meal for weight control, or trying to lose weight when already excessively underweight), 57% in unhealthy dieting, and 12% had a poor image of their own bodies. Over half of the girls in this study had used at least one unhealthy weight reduction method in the last month, most commonly skipping meals (46%). Skipping meals may lead to consumption of snack foods that are high in fat, sugar and salt, lowering the intake of essential nutrients, and leading to weight gain. Many girls (10–20%) also engaged in other unhealthy weight-reduction methods, such as cutting out all meats, all dairy foods, or all starchy foods. Nowak (1998) found that, in Queensland, boys aged 12–15 years who dieted to lose weight reduced high-fat and high-sugar foods and snacks while increasing some low-fat foods such as yoghurt, fruit and low-fat milk. However, girls aged 12–15 years who dieted to lose weight not only reduced high-fat foods but also bread, meat and dairy products, and also skipped meals and snacks. Often the lower intake of core foods and the tendency to skip meals continued after the conscious effort to diet had ended.

Prevalence data are not available for the number of young people in Australia who suffer from disordered eating, or who are experiencing clinical eating disorders. The Child and Adolescent Component of the 1998 National Survey of Mental Health and Wellbeing gathered some data from children and adolescents aged 13–17 years on dieting and exercise behaviour (Table 14.3). The survey indicated that 17% of children and adolescents aged 13–17 years (26% of females and 7% of males) were dieting to control weight, and 36% (47% of females and 26% of males) were exercising to control weight. It is unlikely that all these adolescents were clinically overweight and needed to lose weight, although this information is not available from the survey. A much smaller percentage of adolescents were using inappropriate weight-loss behaviours, such as vomiting or using laxatives (2%) or taking medication (0.6%). These behaviours were more common among females than males.

Table 14.3: Proportion of children aged 13–17 years reporting dieting and exercise behaviours, by sex, 1998

| Dieting and exercise behaviour | Males | Females | All adolescents |
|---------------------------------------|--------------|----------------|------------------------|
| Dieting to control weight | 7.4 | 26.1 | 16.8 |
| Exercising to control weight | 25.5 | 46.9 | 36.2 |
| Losing weight by vomiting/laxatives | 0.8 | 3.0 | 1.9 |
| Losing weight by taking medication | 0.3 | 0.9 | 0.6 |

Source: Sawyer et al. 2000.