



**FIG 16-2** Complex relationships in obesity.

A balance between **energy intake** and **energy expenditure** is a critical factor in regulating body weight. For example, eating one small chocolate chip cookie (50 calories) is equivalent to walking briskly for 10 minutes. Factors that raise energy intake or decrease energy expenditure by even small amounts can have a long-term impact on the development of overweight and obesity.

**Genetic influence** is an epidemiologic consideration in regard to children's weight. Genetic mutations, such as FTO (fat mass and obesity) are rare but can predispose individuals to becoming overweight or obese ([Gahagan, 2016](#)). Studies have also suggested a tendency for a combination of genetic and environmental factors. Parental BMI is a more potent predictor of obesity than genetics, suggesting that behaviors and environment play a greater role in obesity ([Morandi, Meyre, Lobbens, et al, 2012](#)). The increasing rates of obesity within genetically stable populations suggest that environmental, some perinatal factors (e.g., bottle feeding), and