California State Department of Public Health, a project now under way at the Herrick Hospital in Berkeley, to evaluate the effectiveness of this method. Groups of 10–25 overweight persons, with a leader from the professional staff, meet regularly over a period of several months. Through the influence and stimulus of the group they attempt to accomplish that which they have not achieved by individual effort alone – namely, reduction in weight. Although the project has not been completed, preliminary reports by the director, William Simmons, indicate considerable promise from this method.

A similar undertaking at the Boston Dispensary of the New England Medical Center has likewise shown encouraging findings.4 Many other endeavours of this sort are being initiated over the country. It is, of course, too early to judge the ultimate worth of these projects. Such judgement must await continuous follow-up of individuals showing early benefit, as well as long-term follow-up of persons who do not show early improvement but may show long-term benefits. However, the results to date are sufficiently encouraging to justify the more widespread application of this method under proper conditions, including adequate evaluation.

In addition to developing control measures based upon present knowledge, it is also important to define more precisely the relationship between over-weight and excessive mortality. There is need for better measures of overweight itself; investigation of the significance of specific nutritional elements such as cholesterol; long-term observation of individuals who gain, maintain, or lose substantial amounts of weight at different periods of life, and many other studies.

Practically every member of the public health team has a contribution to make in developing and applying effective methods for weight control. It is now one of our major responsibilities.

References
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Commentary: On ‘public health aspects of weight control’
Lester Breslow

My comment on the paper1 touches briefly on: (i) the context at the time of writing it, (ii) some important advances on the topic since that time, and (iii) the current obesity epidemic.

The paper appeared as part of a growing chronic disease control programme in the California Department of Public Health, which reflected recognition of the epidemiological transition, i.e. ascendency of the chronic non-communicable diseases over the communicable diseases as the major health problems.2,3 In particular, cardiovascular disease had been expanding substantially during the first half of the century owing in considerable part to excessive weight among increasing numbers of people.

Not all public health leaders immediately accepted the idea being advanced that public health should become involved in chronic disease control. The California Director of Public Health first advised, when I initiated such a proposal in 1946, to ‘go back to Minnesota (where I had come from) and try those notions out there.’ He later agreed to establish a Bureau of Chronic Disease in the Department when federal funds became available for cancer control. Kenneth Maxcy, who asked me to write a chapter on chronic disease for the 1951 edition of Preventive Medicine and Hygiene, insisted that the title of the chapter be Diseases of Senescence. This mirrored the common belief that cardiovascular disease, cancer, and the like were ‘degenerative’ diseases due to aging and not preventable. We compromised on Senescence, Chronic Disease, and Disability in Adults.

The scientific base for including weight control as an important element in the public health approach to the chronic disease problem then consisted largely of the findings by life insurance company actuaries and by Public Health Service statisticians.4,5 Experience in ‘rating’ life insurance premiums to reflect mortality risk showed that being overweight constituted a substantial mortality risk and that losing excessive weight returned people towards the ‘standard’ mortality pattern.6

The 1952 paper on Public Health Aspects of Weight Control suggested three approaches for public health to adopt for obesity control: (i) popularize the ideal of optimum weight as an aspect of
good hygiene; (ii) for those who are already overweight, group therapy led by a health professional; and (iii) studies to refine knowledge of obesity and its control.

During the latter part of the 20th century knowledge about being overweight and its health impact advanced considerably. It became common practice to measure weight as body mass index (BMI), i.e. weight in kilograms divided by height in metres squared (kg/m²). Although arguments continued about the significance of various ranges of BMI in various segments of the population, BMI of 25–30 was frequently called overweight and >30, obesity. Observing that standard minimizes the difficulties of comparing different studies that previously had established various cutpoints for overweight and obesity.

Probably the major advance in understanding the relationship of obesity to health has come from studies of how physical activity affects mortality among the overweight. Morris’ investigation of London bus drivers and conductors led the way generally towards knowledge of the role of physical activity in health.7

A California Bureau of Chronic Disease follow-up of mortality among 3992 longshoreman, averaging 17% over (Metropolitan Life Insurance Company) standards of weight for height, showed no excess mortality from all causes and no excess from coronary heart disease during the first 5 years after examination; there was no gradient even among those 40% or more over the Metropolitan standard of weight for height.8,9 presumably the heavy labour of longshore work had established a fitness among them that overcame any negative impact of being overweight. Further studies of the longshoremen’s experience confirmed the original findings.10,11

Investigation of mortality among the more than 20 000 men who had attended a fitness centre revealed that obesity did not appear to increase mortality risk in men who were physically fit, measured by treadmill test; and that unfit men who became fit achieved a considerable reduction in mortality.12–14 Further, physically fit overweight and obese men had lower rates of all-cause mortality than normal-weight men who are unfit.15 Nearly 10 000 women showed a similar relationship between obesity, fitness, and mortality.16

Before physical fitness was known to enter into the situation so strongly, public health approached obesity almost exclusively through nutrition, i.e. by dealing with calorie intake. Nutritionists, of course, also pursued the matter of fat consumption beyond its contribution to excessive calories; they also studied its relationship to blood lipids as they became recognized as a factor in cardiovascular disease. Thus, public health agencies mounted efforts to persuade people to eat healthier foods. Campaigns and projects to induce people to eat more fruits and vegetables and less fatty foods in order to reduce obesity and cardiovascular disease became commonplace. Dieting became faddish, and sponsors’ names became attached to their particular formulations. Specifics concerning various vitamins and minerals were often included. ‘Crash’ diets became popular, but any weight lost thereby was usually then quickly regained. As might be expected in a market economy without much regulation and where the notion that pills will secure health prevails, dietary ‘supplements’ were marketed and became a big industry in the United States.

Meanwhile overweight and obesity became epidemic. While 45% of United States’ residents aged 20–74 years had BMIs > 25, already in 1900–62, the proportion increased steadily to reach 66%, age adjusted, in 1999–2000.17 The proportions were higher in Mexican-American and African-American families, but the increase among children and adolescents generally was particularly alarming. Among those 6–11 years of age, overweight increased from 4.2% in 1963–65 to 15.3% in 1999–2000; and among adolescents 12–19 years of age, from 4.6 to 15.5%.

Corresponding data are not available for trends in fitness. Responding to the growing attention on the obesity epidemic, various estimates of the number of deaths attributable to obesity have appeared. They range from 400 000 annually, i.e. about one-sixth of all deaths in the United States, to 112 000 depending on the assumptions and data used.18 The higher number came from a study by investigators including the Director of CDC and thus became known as ‘official,’ whereas the smaller number came from a publication whose senior author was an investigator at the National Center for Health Statistics of CDC.19–21

My reflections on the role of obesity in health, including but not limited to its impact on mortality, are:

i. Obesity and overweight should be further studied in their health relationship to physical fitness; thus far, though impressive, the major source of data consists of observation of white, upper-class, men and women attending a fitness centre, whereas we need information about the entire population.

ii. In the present state of knowledge, programmes intended to deal with overweight and obesity as a health factor should include attention to physical fitness as well as the nutritional aspects of the problem.

iii. Rather than public health strategies aimed solely at single behaviours such as eating too much, especially harmful kinds of food, or the common sedentary lifestyle, or cigarette smoking, we need to develop an overall strategy for health in the modern world where most people have ready access to the above behaviours. We need, in effect, a new kind of hygiene that applies to our current situation. Of course, we should combat each and all the aspects of living that injure health, but we should emphasize a system of hygiene that deals with the whole group of behaviours that influence health favourably. One study, for example, revealed that following six or seven healthful behaviours reduced not only mortality but also disability among the survivors to about half of that which prevailed among those following only zero-three level about one-third.22

iv. We must combat vigorously those commercial interests that market things that are harmful to health, an approach that has proved its worth in the case of tobacco. Obviously we cannot deal with the food industry in a blanket way, as we have with the tobacco industry, but we must struggle against those elements of the food industry that mislead the public in order to peddle their harmful wares.

v. Finally, though obesity and other factors in the epidemiological transition, have thus far affected mainly the currently industrialized world, the chronic diseases and the behavioural factors largely responsible for them are already emerging in the developing world. While public health agencies there must still contend with the communicable diseases, epidemiologists as an element of public health should lead the way toward recognizing and dealing with the epidemiological transition in the developing world.23
The size and rapidity of the recent increase in the prevalence of obesity is paralleled only by the massive media interest in the causes and implications of these changes and the myriad number of proposed solutions. The availability of information on obesity is overwhelming, but there seems to be common consensus on three points; that obesity is an important public health problem, that the problem is getting worse and that the solution is simple: eat less and exercise more. And yet, although the changing prevalence is a recent phenomenon, obesity itself is not a new public health issue. In the classic paper reprinted in this edition of the journal, Breslow\(^1\) noted in 1952 that a substantial proportion of Americans were overweight and that weight control was a 'major public health problem'. Despite recognition of the increasing levels of obesity, and the knowledge that it is caused by excess energy intake and decreasing levels of physical activity, obesity remains a poorly understood phenomenon. There are profound gaps in our knowledge about the pathophysiological pathways underlying weight gain and in the effectiveness of approaches to tackle the rising prevalence. Breslow's\(^1\) paper provides a platform for discussing some of these contemporary issues.