son of a raw and a frozen food obtained from different sources could be questionable, but when nearly all of the raw samples have more of a micronutrient than nearly all of the frozen or canned samples, the comparison becomes highly valid statistically.

Third, whether corn is a grain or a vegetable is a matter of individual opinion; farmers consider it a grain. Perhaps the comparison of cowpeas is inappropriate, although canned cowpeas had one-half the $B_6$ and two-fifths of the pantothenic acid as did frozen peas. Any table could be “improved” by any reader who wishes to try.

When misunderstanding of a paper is widespread and is not the fault of the author, it is only right to correct it, as Orr and Watt have tried to do.

Henry A. Schroeder, M.D.

Professor of Physiology, Emeritus
Dartmouth Medical School
Brattleboro, Vermont 05301

References


Unexpected death of athletes

Dear Sir:

The unexpected death of an athlete is not an unfamiliar event, but the poignant tragedy it represents stimulates national public interest as well as major concern. The recent deaths of Bill English, a 19-year-old college football player from Texas, and 28-year-old Chuck Hughes, Detroit Lions wide receiver, were attributed to coronary heart disease. Incidents of this nature support our belief that screening for specific coronary heart disease “risks” should be included in all athletes’ regular medical examinations. Such screening procedures appear justifiable in view of autopsy studies on young men in which an alarming incidence of atherosclerosis has been shown (1, 2). Our investigation was designed to obtain exploratory data on 30 male college athletes and six football coaches to see whether blood constituents (cholesterol, triglyceride (TG), uric acid, glucose) and body fat (% BF) reflected higher coronary heart disease (CHD) “risks” in any of the groups. Data were obtained for the most part with out-of-season athletes selected from the following sports: football, basketball, wrestling, swimming, and track. Football coaches comprised a relative control group, i.e., they were older ($\bar{X} = 46$) and all had been athletes.

Our results revealed that track athletes were the leanest, 6.8% BF, and the football coaches were the fattest, 16.6% BF. There were no statistical differences for cholesterol and TG between the various groups of athletes. The means for all athletes were: BF = 12.07; cholesterol = 200.1 mg/100 ml; TG = 103.3 mg/100 ml; SUA = 6.7 mg/100 ml; serum glucose = 98.2 mg/100 ml; and for the coaches: BF = 16.6; cholesterol = 230 mg/100 ml; TG = 169 mg/100 ml; SUA = 7.7 mg/100 ml; serum glucose = 94.4 mg/100 ml.

Whereas the values obtained were within the “normal” range, it is our view that the serum lipids and uric acid values (exception track) tend to be comparatively high to those from countries with lower known incidences of CHD, particularly in view of the age of these young men ($\bar{X} = 21$) and the fact that they represent a physically active population. Another problem which faces many athletes from time to time and which may adversely influence serum lipid values, possibly constituting additional indirect coronary risk, also warrants attention. Athletes frequently reduce body stores of fat during their training seasons, regain them during the off season, and repeat this cycle many times. These cycles may be more pronounced in football players and wrestlers than in other athletes, and possibly result in higher than normal circulating lipids and an earlier than normal mortality. Dietary information was not assessed in this exploratory investigation, but
evidence from other work (3) suggests that college athletes demonstrate surprisingly erratic dietary patterns that may be conducive to the cyclic patterns referred to earlier. If our data do, in fact, represent average values for young athletes, this raises the question as to whether preventive measures to reduce or at least control circulating lipid levels of young athletes would be beneficial in preventing future hyperlipidemia in early middle age and possibly reduce the attendant risk of early onset of coronary heart disease.

Edward W. Watt, Ph.D.
H. E. Gahagan, Ph.D.
Jose Mendez, Ph.D.

References


1 Laboratory for Human Performance Research, Institute of Science and Engineering, Pennsylvania State University, University Park, Pennsylvania 16802.
2 The Sports Medicine Clinic, P. C., 33 North Avenue, N. E., Suite 1700, Atlanta, Georgia 30308.

"Reliability of a dietary questionnaire"

Dear Sir:

Readers concerned with the reliability of dietary questionnaires were probably reassured by the favorable findings on this subject as reported by Reshef and Epstein (1) in a recent issue of this journal.

Their data (Tables 1, 2) raised one point on which the authors did not comment.

Calculations from these data indicate that dietary fat provided only 21 to 24% of total calories consumed, an amount considerably less than the reported range of 35 to 45% for the average American diet. The lower levels of Reshef and Epstein are approximately those hoped for by Americans who are attempting to lower their levels of serum cholesterol by regimens such as the "Prudent Diet" or "anti-coronary diets."

Were the individuals included in the survey by Reshef and Epstein on some such prophylactic regimen? If so, would not these subjects be more "diet-conscious" than is usually the case? If true, would this situation have contributed to the reassuring agreement of the dietary recalls taken some six months apart?

Alternatively, is this relatively low level of calories derived from dietary fat the rule for many residents of Israel, eating ad libitum? If so, it is disappointing that the frequency of coronary heart disease in that country is not also relatively low.

W. Stanley Hartroft, M.D., Ph.D.

Professor of Pathology
University of Hawaii
School of Medicine
Honolulu, Hawaii 96822

Reference


Authors’ reply

Dear Sir:

In the above letter, Professor W. Stanley Hartroft comments on calculations from data presented in a paper by us in a recent issue of this journal (1). In consequence of these calculations, he raises a number of questions as can be seen in his letter.

The individuals included in our survey, from two neighborhoods in Jerusalem were selected according to age, sex, and country of birth. None was on any special dietary regimen, moreover, those on "a diet" were excluded as we were interested in people eating ad libitum. In relation to the United States, the low level of calories derived from fat is not uncommon in Israel. The percentage of calories contributed by fat as calculated from the national food balance sheets are 30.9,