

SUBJECT MATTER IN BRIEF

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Nutrient intakes in healthy adults. Nutrient intakes in randomly selected healthy adults (thirty male, thirty female) were determined using the 7 d weighed-intake method. Fat contributed 38.8 and 39.7% of dietary energy for men and women respectively. The eating habits of low- and high-fat eaters are described. 129-137

Computed tomography in obese women. Adipose tissue localization was assessed by computed axial tomography, and its association with body density and anthropometric measurements was investigated in a sample of premenopausal obese women. It is concluded that the absolute amount of deep abdominal fat can be predicted from anthropometric measurements with moderate accuracy. 139-148

Post-partum changes in body-weight. In the year after delivery of an infant most women lose weight steadily, but triceps fat increases for several months. These changes are not influenced by lactation. 149-153

Metabolic rate and exercise. A sustained increase in energy expenditure, over and above the energy cost of the exercise itself, has been proposed. However, in this study there was no increase in basal metabolic rate in healthy volunteers maintained on a constant diet and trained to run for 1 h/d, 5 d/week over 3 months. 155-173

Energy expenditure estimated from heart rate. A modified method for predicting daily energy expenditure from minute-by-minute ambulatory heart rate monitoring was cross-validated against continuous whole-body calorimetry. The heart rate method was shown to be sufficiently accurate for many epidemiological or large-scale community studies. 175-186

Energy expenditure during the menstrual cycle. Women on a constant diet throughout a menstrual cycle were monitored by hormonal techniques and calorimetry. The metabolic rate during sleep was lowest in the late follicular phase and highest in the late luteal phase. The hormonal basis for these changes remains uncertain. 187-199

Thermogenic responses in undernutrition. The capacity for noradrenaline-stimulated thermogenesis was assessed in controls and undernourished labourers by graded infusions of noradrenaline in doses based on fat-free mass. No differences in thermogenic capacity were observed by analysis of variance when increments in oxygen consumption were corrected for differences in fat-free mass. 201–208

Liver function tests in protein–energy malnutrition. In a protein-depleted rat model, the percentage of urinary hippuric acid derived from test doses of cinnamic and benzoic acids increased with protein repletion. These tolerance tests show some promise as non-invasive liver function tests to monitor recovery from protein–energy malnutrition. 209–221

Metabolism of chicken liver tissue in vitro. Intermittent feeding cycles or daily changes in the dietary protein level change lipid metabolism in broiler chickens. Chronic use (7–28 d of age) of either an alternating protein or intermittent feeding regimen caused greater responses compared with acute bouts (single cycle) of either of the regimens. 223–233

Energy intake and whole-body protein turnover. Dietary energy intake was varied in an attempt to evaluate its effect on whole-body protein turnover in chicks. Whole-body protein turnover decreased in energy deficiency, whereas it remained constant in energy excess, suggesting that the response is essentially analogous to that caused by changes in dietary protein intake. 235–244

Muscle composition in intermittently fed chickens. Intermittent feeding caused increased muscle growth, on days of food restoration, accompanied by changes in contents of nucleic acids and soluble proteins. The marked reduction in muscle soluble proteins (30%) was attributed to a reduction in glycolytic enzymes. The RNA:DNA ratio was affected by the breed and feeding status. 245–256

Baked beans and plasma lipid levels. When eaten regularly, baked beans reduced plasma cholesterol levels in human beings, whilst maintaining the relative proportion of high-density lipoprotein-cholesterol. The mechanism is uncertain, but the protein and dietary fibre components of the beans appear to be involved. 257–265

Effects of carbohydrate:fat ratio on postprandial variables. Health councils have advised a reduction in fat intake. Increasing the dietary carbohydrate:fat ratio resulted in a reduction in the postprandial level of triglyceride in the blood of healthy male volunteers but glucose and insulin were increased. The latter may be a potential hazard to health. 267–283

Subject matter in brief

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Fat, gastric emptying and glycaemia. The effect of fat on gastric emptying and absorption of nutrients depends on the stage of the meal during which it is eaten. Fat consumed before a carbohydrate meal delays gastric emptying by increasing the lag phase. Fat eaten with the meal slows gastric emptying by affecting the slope.

285–290

Resistant starch utilization. In the rat, α -amylase-resistant, retrograded maize starch appeared to be partially digested and absorbed as carbohydrate, the remainder being almost totally fermented after an initial adaptive period. Resistant, retrograded pea starch was less susceptible to digestion and fermentation and its overall utilization less influenced by adaptation.

291–300

Glutathione and T_3 cellular action. Cysteine deficiency and subsequent glutathione changes induce a decreased affinity of nuclear receptors for 3,5,3'-triiodothyronine (T_3). Reduced formation of T_3 -receptor complexes leads to an expected decrease in growth and to an unexpected increase in some lipogenic enzyme activities attributable to a change in oxidized glutathione:reduced glutathione ratio.

301–307

Urinary excretion of purines in goats. Knowledge of the endogenous excretion of purine catabolites is important in determining their usefulness as indicators of microbial protein flow in ruminants. In young growing goat kids the urinary endogenous excretion of purines was only marginally affected by variations in protein supply and level of intake of milk.

309–321

Ileostomy levels of nitrite and nitrate. Nitrite and nitrate levels were measured in ileostomy effluent from ileostomy bags or fresh samples of the stoma. Foodstuffs high in nitrite/nitrate content significantly increased baseline levels of nitrite/nitrate in all ileostomy effluent. The type of foodstuff ingested determines nitrite/nitrate input into the proximal colon.

323–330

Bioavailability of meat and spinach iron. In anaemic and non-anaemic growing rats, both meat and spinach Fe were highly absorbed and utilized. Meat did not enhance total Fe bioavailability when proportionally mixed with spinach. It was hypothesized that $FeSO_4 \cdot 7H_2O$ and spinach Fe were absorbed from separate Fe pools.

331–343

Effects of dietary lactose and copper deficiency on antioxidant enzymes. Rats were fed on control or Cu-deficient diets containing either sucrose (580 g/kg) or lactose (193 g/kg) plus sucrose (387 g/kg). Compared with sucrose, lactose consumption resulted in decreased activities of hepatic antioxidant enzymes. Cardiac antioxidant enzyme defences were impaired as a result of Cu deficiency.

345–354

Tetrathiomolybdate and copper excretion. Tetrathiomolybdate effectively removed tissue Cu in lambs through excretion in bile and urine in a repeatable pattern. Endogenous Cu excretion through gastrointestinal secretions other than bile was also demonstrated. 355–371

Tetrathiomolybdate and copper excretion. Tetrathiomolybdate was effective in removing Cu from the long-term storage compartment in liver of lambs. However, the effects were considerably lower when compared with the effects of tetrathiomolybdate on the short-term storage compartment. 373–385

Rumen kinetics and foam production. The results of this experiment indicate that there is a significant relation between rumen fluid fractional outflow rates and the amount of foam produced from rumen contents. This relation may be an important factor in animal susceptibility to bloat. 387–395

Rumen degradation and outflow of amino acids. Apparent degradation in, and outflow from the rumen were calculated for graded doses of lysine, threonine and methionine given in mixtures into the rumen of fistulated sheep, along with polyethylene glycol as liquid marker. Even at the lowest dose, outflow of intact amino acids was significant. 397–408

Rumen digestion of grass and lucerne by cows. Ryegrass (*Lolium perenne*) has a lower nutritive value than lucerne (*Medicago sativa*) but does not cause bloat when fed to cows. At similar intakes lucerne was more extensively broken down and cleared from the rumen than ryegrass, and resulted in higher concentrations of rumen metabolites. 409–423