The Down Syndrome nutrition handbook

This manual was written to guide parents, grandparents, brothers and sisters of a child, adolescent or adult with Down syndrome as well as health professionals, teachers and anyone else who knows someone with Down syndrome and wants to know more about nutrition and a healthy lifestyle. It is a very useful resource for parents, teachers and dietitians who work with people with Down syndrome. The manual has a multitude of information, suggestions and activities to help parents teach their child to ultimately make healthy food (and lifestyle) choices.

The author, Joan Guthrie Medlen, is a registered dietitian who not only has dietetic experience but is also the parent of an adolescent child with Down syndrome. She wrote this manual in response to not finding suitable, easily-accessible nutrition information for parents of children with Down syndrome when her son was born. This manual certainly fills this gap and also provides a valuable resource for dietitians and other health professionals working with people with Down syndrome.

The manual is particularly impressive as the author relates not only to the specific feeding difficulties that children with Down syndrome may encounter such as delayed oro-motor development, seating difficulties, extra time needed for feeding but she also relates to normal feeding issues such as bottle versus breast feeding, the importance of the feeding relationship, teaching children to make food choices, trusting a child’s choices.

It has four sections: ‘Building healthy attitudes’ includes chapters on Successful eating, Breast or bottle feeding and the Feeding relationship; Nutrition-related concerns for people with Down syndrome’ covers Nutrition, Physiology, Coeliac disease, Diabetes and Alternative therapies; and ‘Teaching healthy choices to encourage healthy lifestyles’ includes Teaching your child to make choices, Nutrition education, Food and school, Weight management, Fitness and activity, Cooking corner and Menu planning. The last section, ‘Learning Activities’, has 13 chapters with activities to teach children with Down syndrome, as well as other family members, about such topics as balanced meals and snacks, appropriate serving sizes, setting goals, learning to group foods.

There are also ten appendices covering information such as food safety, growth charts, activity ideas for children with Down syndrome, diabetes care plan. Each chapter includes highlighted anecdotes from parents as well as photos of children with Down syndrome in different eating situations. There is a section with a comprehensive list of references and suggested reading for each chapter as well as a list of resources which are less useful as they are USA-based. However the author includes the ‘Nursing Mothers of Australia’ (now Australian Breastfeeding Association) as a useful resource!

This manual is very comprehensive, maybe a bit too comprehensive for the average parent but definitely essential for parents wanting more detailed information and ideas, dietitians and other health professionals working with children and adults with Down syndrome.

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Of interest from the journals

Adolescent nutrition

This study demonstrated the importance of family meals on food consumption patterns in adolescents.

Body composition

A short-term, high-fat diet up-regulates lipid metabolism and gene expression in human skeletal muscle. Using pooled data from 1829 subjects prediction equations were developed to describe normal levels of total body water and fat free mass in children and adults.

Child nutrition

This focus group study found that barriers to healthy eating included convenience, taste, social factors, a preference for indoor activity, lack of energy and motivation, time constraints.

Chromium

This paper presents the chromium content of 150 Australian foods and beverages selected across the core food groups and with reference to annual sales.

Clinical nutrition

This study examined the long-term effects on growth and development of a ketogenic diet used to treat epilepsy in children.

Diet and exercise

This practice commentary focuses on the role of dietitians in giving exercise advice.

Dietary carbohydrate

This study compared the insulin responses to diets with 20% energy intake from rye or white bread in an 8-week crossover study. Rye bread appeared to enhance insulin secretion.

Dietary fat

This study demonstrated the nutrient-gene interaction by dietary fats at the skeletal muscle level in trained athletes.

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This study of 55 pregnant Canadian women found low intake of DHA.


This study examines the changes in food sources of dietary fat following the Women’s Health Initiative.


This analysis of the CSFII data shows respondents selecting lower fat foods had lower fat intakes than exclusive high fat users.


This study compared a high MUFA vs high CHO diet in type 1 diabetes with the high MUFA diet demonstrating favourable lipoprotein profiles.

**Dietary methodology**


This paper introduced a scoring method to evaluate dietary methods reported in epidemiological studies, emphasising the importance of method critique before accepting results.

**Dietetics research**


This paper outlines the unique contributions dietitians can make in research involving dietary change.

**Dental health**


This ADA statement includes osteoporosis and periodontal disease, diabetes mellitus, HIV, high risk groups, supplements, collaborative professional education and practice, and other nutrition and oral health issues.

**Energy metabolism**


This calorimeter study showed healthy children adapt fuel utilisation to diet composition.

**Evidence-based practice**


This study compared medical nutrition therapy protocols to usual nutrition care in residential care facilities.

**Fat**


This review paper outlines the ways in which PUFA may be incorporated or enriched in foods.

**Food choice**


This is an excellent review of consumers’ food choice patterns in relation to fruit and vegetable consumption. It argues for a process/situation focus on the known factor of convenience.

**n-3 fatty acids**

Lemaitre RN, King IB, Mozaffarian D, Kuller LH, Tracy RP, Siscovick DS. n-3 Polyunsaturated fatty acids, fatal ischemic heart disease, and nonfatal myocardial infarction in older adults: the Cardiovascular Health Study. Am J Clin Nutr 2003;77:319–25

This control case study demonstrated a lower risk of fatal IHD with higher concentrations of DHA and EPA in plasma phospholipids.

**Nutrition and cancer**


This review looks at foods and their components associated with chemoprevention of prostate cancer.

**Nutrition and the elderly**


A representative sample of older people in the UK revealed that 14% were at risk of undernutrition. Illness, bad health, age over 85 years and being institutionalised contributed to a greater risk of undernutrition.

**Nutrition education**

Hays JE, Peterson CA. Use of an outcomes research collaborative training curriculum to enhance entry-level dietitians’ and established professionals’ self-reported understanding of research. J Am Diet Assoc 2003;103:77–84

This pilot study reports on an outcomes research training program for entry-level dietitians.

**Nutrition status and aging**


Data from almost 6000 adults over 50 years revealed that missing teeth and denture status relate to nutritional intake. Those with poor dentition have a lower healthy eating index scale.

**Nutritional assessment**


The scored Patient-generated Subjective Global Assessment tool identifies malnutrition in oncology patients treated with radiotherapy and predicts changes in quality of life.

Smiciklas-Wright H, Mitchell DC, Mickle SJ, Goldman JD. Foods commonly eaten in the United States,

This study compared the quantities consumed per eating occasion in 1989 to 1991 with 1994 to 1996 and found one third of food examined was consumed in larger amounts in 1994 to 1996.

Obesity

One in 13 annual deaths in the EU is likely to be related to overweight.


This study examines data from five studies and reports the prevalence of obesity trebled in the period 1985–97 among children seven to 15 years.

Horgan GW, Stubbs J. Predicting basal metabolic rate in the obese is difficult. Eur J Clin Nutr 2003;57:335–40

It is shown that the Schofield equations for predicting energy requirements are unsuitable for obese populations.


This interesting review examines the link between intake of dairy products and calcium and body weight. It reports on mechanisms whereby calcium may regulate lipogenesis, lipolysis and dietary fat absorption.


This study compares data from four sites to measure waist circumference immediately below the ribs, the narrowest waist, the mid-point below the lowest rib and the iliac crest and immediately above the iliac crest. They differ in magnitude but are reproducible and unrelated to adiposity.

Osteoporosis

Vitamin D intake, rather than milk intake or a high calcium diet, was associated with a lower risk of osteoporotic hip fracture in this 18-year prospective study of 72 337 postmenopausal women.

Phytoestrogens

A Tasmanian study has shown that phytoestrogen supplementation of 50 mg daily had no effect on bone turnover in 60 adolescent boys.


This study demonstrated that genistein was more bioavailable than daidzein and that urine measurements have limitations as predictors of systematic bioavailability.

Practice guidelines

This paper outlines the adoption of American guidelines in the New Zealand context.

Protein

Data from published studies were used to derive recommendations for dietary reference values. The estimated average requirement for healthy adults is 105 mg N per kg per day or 0.65g good quality protein per kg per day.


This is review of the different types of minor proteins found in milk.

Research methodology
Abusabha R, Woelfel ML. Qualitative vs quantitative methods: Two opposites that make a perfect match. J Am Diet Assoc 2003;103;566–9

This commentary outlines ways in which qualitative and quantitative methods can both be useful in dietetics research.

Research tools

This study examined the reliability of the BodyGem apparatus and the relative validity of data compared to Douglas bag RMR measurements based on resting oxygen consumption.

Sensory analysis

This paper reviews the area on methods for sensory analysis of foods by children and their ability to use these tasks at different ages.

Sweeteners

The tolerance of maltitol, an indigestible sweetener, was examined in 12 healthy volunteers. At doses currently used maltitol was not associated with severe digestive symptoms.

Vegetarianism
Position of the American Dietetic Association and Dietitians of Canada: Vegetarian diets. J Am Diet Assoc 2003;103;748–65

This position paper covers the broad range of nutritional issues associated with vegetarianism.

Wine

This review paper focuses on the sensory evaluation of wine and argues that novices can readily be trained as experts and that panels are best for wine evaluation.