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### Key Points

- Diet quality scores are related to health outcomes. Thus, diet quality is as important as quantity, a fact which is overlooked when food security is measured.
- However, an evidence-based approach to the assessment, measurement and application of diet quality is required to improve morbidity and mortality due.
- This chapter lists the most up-to-date resources on the regulatory bodies, journals, books, professional bodies and websites that are relevant to an evidence-based approach to diet quality.

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### Keywords

Diet quality • Nutrition • Evidence • Resources • Books • Journals  
• Regulatory bodies • Professional societies

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## Introduction

The availability of or access to sufficient calories (i.e. “food security”) is increasing worldwide [1]. However, food-secure individuals and popula-

tions with access to sufficient calories (i.e. adequate quantities of food) may still lack essential nutrients or those dietary components that are yet unmasked as being important for human health. These components are encompassed within the concept of “diet quality”. Diet quality scores are

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related to health outcomes. So despite “food security” nutritional inadequacies in poor-quality diets (“hidden hunger”) increase the risk of both short- and long-term morbidity and mortality. Thus, diet quality is as important as quantity, a fact which is overlooked when food security is measured. However, the term “diet quality” itself is subjected to a variety of interpretations, definitions and usage.

Methods of measuring diet quality have recently been developed and several scoring systems have been derived. Diet quality can be measured by scoring food patterns relative to national dietary guidelines and the diversity of healthy choices within core food groups. On the other hand, some have interpreted diet quality in terms of micro- or macronutrient profiles of single food items. In our view, both are valid especially when considered with the wider context of food and nutrition. Nevertheless, assessment of the quality and variety of the whole diet allows analysis of associations between foods and health status to be undertaken in order to determine risk factors. Refinement of diet quality scoring systems has facilitated identification of both protective and harmful diets. They also potentially unmask dietary components that are not essential for life per se but have been shown to significantly improve health-related outcomes. These include, for example, polyphenols in wine (when consumed moderately).

Diet quality scores are inversely related to health outcomes. So despite ‘food security’ nutritional deficiencies in poor-quality diets (‘hidden hunger’) increase the risk of both short- and long-term morbidity and mortality. One review reported that improved diet quality reduced all-

cause mortality up to 42 %, cardiovascular disease (CVD) mortality by up to 53 %, CVD risk by up to 28 %, cancer mortality by up to 30 % and all-cancer risk by up to 35 % [2]. This does not mean to say that diet quality is related to just the physical manifestations of disease. For example, a better diet quality has been shown to be related to a reduced cognitive decline in the elderly over an 11-year period [3].

Thus, diet quality is as important as quantity, a fact which is overlooked when food security is measured. Targeted nutritional interventions may improve the most critical aspects of an individual’s or population’s specific deficiencies [1]. However, an evidence-based approach to the assessment, diagnosis and treatment of nutritional deficiencies is required to prevent morbidity and mortality from either inadequate or excessive micronutrient supplementation. This does not mean that all diseases are related to diet quality. For example, one recent study on ovarian cancer specifically showed no relationship with diet quality assessed with the Health Eating Index [4]. Studies like the aforementioned, albeit negative, allow health professionals to redirect their investigations to other causative mechanisms (e.g. epigenetics or environmental risk factors) and reaffirm the need for an evidence-based approach. Other examples of the definitions, measurement and applications of diet quality can be found in this book and also via the recommended resources in the tables below.

Tables 28.1, 28.2, 28.3, 28.4, and 28.5 list the most up-to-date information on the regulatory bodies (Table 28.1), journals (Table 28.2), books (Table 28.3), professional bodies (Table 28.4)

**Table 28.1** Regulatory bodies

Centres for Disease Control and Prevention (CDC)	<a href="http://www.CDC.gov">www.CDC.gov</a>
EUR-Lex (English)—access to European Union Law	<a href="http://eur-lex.europa.eu/en/index.htm">http://eur-lex.europa.eu/en/index.htm</a>
European Food Information Council	<a href="http://www.eufic.org">www.eufic.org</a>
Food and Agriculture Organization of the United Nations (FAO)	<a href="http://www.fao.org">www.fao.org</a>
Forschungsinstituts für Kinderernährung (Research Institute of Child Nutrition)	<a href="http://www.fke-do.de">www.fke-do.de</a>
Health Canada	<a href="http://www.hc-sc.gc.ca/fn-an/nutrition/index-eng.php">www.hc-sc.gc.ca/fn-an/nutrition/index-eng.php</a>
US Department of Health and Human Services	<a href="http://health.gov">health.gov</a>
US Food and Drug Administration (FDA)	<a href="http://www.fda.gov">www.fda.gov</a>
US Department of Agriculture (USDA)	<a href="http://www.usda.gov">www.usda.gov</a>
US Department of Agriculture (USDA) Center for Nutrition Policy and Promotion	<a href="http://www.cnpp.usda.gov">www.cnpp.usda.gov</a>
World Health Organisation	<a href="http://www.who.int">www.who.int</a>

This table lists the regulatory bodies involved with diet quality

**Table 28.2** Journals

American Journal of Clinical Nutrition	<a href="http://www.ajcn.org">www.ajcn.org</a>
Archivos Latinoamericanos de Nutrición	<a href="http://www.alanrevista.org">www.alanrevista.org</a>
British Journal of Nutrition	<a href="http://journals.cambridge.org/action/displayJournal?jid=BJN">journals.cambridge.org/action/displayJournal?jid=BJN</a>
Citrus Industry Magazine	<a href="http://www.citrusindustry.net">www.citrusindustry.net</a>
European Journal of Clinical Nutrition	<a href="http://www.nature.com/ejcn/index.html">www.nature.com/ejcn/index.html</a>
Food and Nutrition Research	<a href="http://www.foodandnutritionresearch.net">www.foodandnutritionresearch.net</a>
International Journal of Behavioral Nutrition and Physical Activity	<a href="http://www.ijbnpa.org">www.ijbnpa.org</a>
International Journal of Paediatric Obesity	<a href="http://informahealthcare.com/loi/jpo">informahealthcare.com/loi/jpo</a>
Journal of the Academy of Nutrition and Dietetics	<a href="http://www.adajournal.org">www.adajournal.org</a>
Journal of Adolescent Health	<a href="http://jahonline.org">jahonline.org</a>
Journal of the American Dietetic Association	<a href="http://www.ADAJournal.org">www.ADAJournal.org</a>
Journal of Clinical Nutrition	<a href="http://www.nutrition.org">www.nutrition.org</a>
Journal of Internal Medicine	<a href="http://www.jim.se/">www.jim.se/</a>
Journal of Marketing	<a href="http://www.marketingpower.com/AboutAMA/Pages/AMA%20Publications/AMA%20Journals/Journal%20of%20Marketing/JournalofMarketing.aspx">www.marketingpower.com/AboutAMA/Pages/AMA%20Publications/AMA%20Journals/Journal%20of%20Marketing/JournalofMarketing.aspx</a>
Journal of Nutrition Education and Behavior	<a href="http://www.jneb.org">www.jneb.org</a>
Journal of Public Policy and Marketing	<a href="http://www.marketingpower.com/AboutAMA/Pages/AMA%20Publications/AMA%20Journals/Journal%20of%20Public%20Policy%20Marketing/JournalofPublicPolicyMarketing.aspx">www.marketingpower.com/AboutAMA/Pages/AMA%20Publications/AMA%20Journals/Journal%20of%20Public%20Policy%20Marketing/JournalofPublicPolicyMarketing.aspx</a>
Nutrition	<a href="http://www.elsevier.com/wps/find/journaldescription.cws_home/525614/description#description">www.elsevier.com/wps/find/journaldescription.cws_home/525614/description#description</a>
Nutritional Neuroscience	<a href="http://www.maney.co.uk/index.php/journals/nns">www.maney.co.uk/index.php/journals/nns</a>
Nutrition Research	<a href="http://www.nrjournal.com">www.nrjournal.com</a>
Obesity Reviews	<a href="http://www.iaso.org/publications/obesityreviews">www.iaso.org/publications/obesityreviews</a>
Official Journal of the European Union	<a href="http://eur-lex.europa.eu/JOIndex.do?ihmlang=en">eur-lex.europa.eu/JOIndex.do?ihmlang=en</a>
Public Health Nutrition	<a href="http://journals.cambridge.org/action/displayJournal?jid=PHN">journals.cambridge.org/action/displayJournal?jid=PHN</a>
Stroke	<a href="http://stroke.ahajournals.org">stroke.ahajournals.org</a>

This table lists the journals publishing original research and review articles related to diet quality

**Table 28.3** Books

Bray GA, Bouchard C, Handbook of obesity: Etiology and pathophysiology Marcel Dekker, 2004, New York, USA
Bray GA, Bouchard C, James WPT, Handbook of obesity: Clinical applications, Marcel Dekker, 2004, New York, USA
Drescher LS, Healthy food diversity as a concept of dietary quality: measurement, determinants of consumer demand and willingness to pay, Cuvillier Verlag, 2007, Göttingen, Germany
Dube L, Bechara A, Obesity Prevention: The role of brain and society on individual behavior. Academic Press, 2010, London, UK
Food and Agriculture Organisation (FAO) guidelines for measuring household and individual dietary diversity. FAO, 2011, Rome, Italy. <a href="http://www.fao.org/docrep/014/i1983e/i1983e00.pdf">www.fao.org/docrep/014/i1983e/i1983e00.pdf</a>
Cheng G. Indicators of diet quality during growth and their associations with body composition and the timing of puberty. WiKu-Verlag Verlag für Wissenschaft und Kultur, 2010, Cologne, Germany
Hu FB, Obesity Epidemiology, Oxford University Press, 2008 New York USA
Institute of Medicine, Dietary Reference Intakes, The National Press 2010 Washington, DC. USA
Kimball DA, Citrus Processing. A Complete Guide, 2nd Ed. Aspen 1999 Gaithersburg Maryland –U.S.
Parker CG, Diet Quality of American Young Children, Nova Science Pub Inc, 2010 USA
Volkarsky KB, Diet Quality of American School-Age Children, Nova Science Pub Inc 2010 USA
Swindale A and Bilinsky P. Household dietary diversity score (HDDS) for measurement of household food access: indicator guide. Version 2. Food and Nutrition Technical Assistance (FANTA)/Academy for Educational Development (AED) 2006 Washington, DC. <a href="http://www.fao.org/docrep/014/i1983e/i1983e00.pdf">www.fao.org/docrep/014/i1983e/i1983e00.pdf</a>
Coulston A, Boushey C, Nutrition in the Prevention and Treatment of Disease, 2nd ed. Academic Press 2008, Burlington, MA, USA
Kuhnlein HV, Erasmus B, Indigenous peoples' food systems for health: interventions for health promotion and policy. FAO of the United Nations 2011 Rome, Italy
Willett W, Nutritional Epidemiology, Oxford University Press, 1998 New York USA
This table lists some important books on diet quality

**Table 28.4** Professional societies

The Academy of Nutrition and Dietetics	<a href="http://www.eatright.org">www.eatright.org</a>
American Heart Association	<a href="http://www.heart.org/HEARTORG/">www.heart.org/HEARTORG/</a>
American Society for Nutrition	<a href="http://www.nutrition.org/">www.nutrition.org/</a>
American Society for Nutritional Sciences	<a href="http://www.faseb.org/asns">www.faseb.org/asns</a>
American Stroke Association	<a href="http://www.strokeassociation.org">www.strokeassociation.org</a>
Citrus Research and Education Center (CREC), Institute of Food and Agricultural Sciences (IFAS), University of Florida	<a href="http://www.crec.ifas.ufl.edu">www.crec.ifas.ufl.edu</a>
European Fruit Juice Association—AIJN	<a href="http://www.aijn.org/">www.aijn.org/</a>
Food Marketing Institute	<a href="http://www.fmi.org/">www.fmi.org/</a>
German Nutrition Society	<a href="http://www.dge.de">www.dge.de</a>
German Society for Epidemiology	<a href="http://dgepi.visart.de/short-english-summary.html">dgepi.visart.de/short-english-summary.html</a>
International Society for Behavioral Nutrition and Physical Activity	<a href="http://www.isbnpa.org">www.isbnpa.org</a>
Korean Stroke Society	<a href="http://www.stroke.or.kr/">www.stroke.or.kr/</a>
National Academy of Sciences/National Research Council (NAS/NRC)	<a href="http://www.nationalacademies.org/nrc/">www.nationalacademies.org/nrc/</a>
Sociedad Española de Nutrición Comunitaria (Spanish Society of Community Nutrition)	<a href="http://www.nutricioncomunitaria.org/">www.nutricioncomunitaria.org/</a>
Society for Nutrition Education and Behavior	<a href="http://www.sne.org">www.sne.org</a>
Women's Health Australia—The Australian Longitudinal Study on Women's Health	<a href="http://www.alsw.org.au/">www.alsw.org.au/</a>
This table lists the professional societies involved with diet quality	

**Table 28.5** Relevant internet resources (i.e. those devoted to micronutrient deficiency)

American Heart Association	<a href="http://www.heart.org/HEARTORG/">www.heart.org/HEARTORG/</a> <a href="http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Nutrition-Center_UCM_001188_SubHomePage.jsp">www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Nutrition-Center_UCM_001188_SubHomePage.jsp</a> <a href="http://my.americanheart.org/professional/Councils/NPAM/Council-on-Nutrition-Physical-Activity-and-Metabolism_UCM_322856_SubHomePage.jsp">my.americanheart.org/professional/Councils/NPAM/Council-on-Nutrition-Physical-Activity-and-Metabolism_UCM_322856_SubHomePage.jsp</a>
Canadian International Development Agency	<a href="http://www.acdi-cida.gc.ca/acdi-cida/ACDI-CIDA.nsf/eng/FRA-4422402-563">www.acdi-cida.gc.ca/acdi-cida/ACDI-CIDA.nsf/eng/FRA-4422402-563</a>
Centre for Indigenous Peoples' Nutrition and Environment	<a href="http://www.mcgill.ca/cine/">www.mcgill.ca/cine/</a>
Department of Health and Human Services Dietary Guidelines for Americans 2010	<a href="http://health.gov/dietaryguidelines">health.gov/dietaryguidelines</a>
Food and Agriculture Organization	<a href="http://www.fao.org">www.fao.org</a>
Healthy Eating Quiz	<a href="http://healthyeatingquiz.com.au">healthyeatingquiz.com.au</a>
Indigenous Nutrition	<a href="http://www.indigenousnutrition.org/index.html">www.indigenousnutrition.org/index.html</a>
International Food Policy Research Institute	<a href="http://www.ifpri.org">www.ifpri.org</a>
Linus Pauling Institute	<a href="http://lpi.oregonstate.edu">lpi.oregonstate.edu</a>
Micronutrient Initiative	<a href="http://www.micronutrient.org">www.micronutrient.org</a>
National Institutes of Health	<a href="http://www.nih.gov">www.nih.gov</a> <a href="http://health.nih.gov/topic/WeightLossDieting">health.nih.gov/topic/WeightLossDieting</a> <a href="http://riskfactor.cancer.gov/diet">riskfactor.cancer.gov/diet</a> NordForsk/SYSDIET <a href="http://www.nordforsk.org/en/funding/finansieringsformer/nordic-centre-of-excellence">www.nordforsk.org/en/funding/finansieringsformer/nordic-centre-of-excellence</a>
The Nutrition Source (Harvard School of Public Health)	<a href="http://www.hsph.harvard.edu/nutritionsource">www.hsph.harvard.edu/nutritionsource</a>
United States Department of Agriculture Choose MyPlate	<a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a>
Uppsala University	<a href="http://www.pubcare.uu.se/medarbetare/Klinisk_nutrition_och_metabolism/Riserus_Ulf/">www.pubcare.uu.se/medarbetare/Klinisk_nutrition_och_metabolism/Riserus_Ulf/</a>
World Health Organization	<a href="http://www.who.int/nutrition/topics/vad/en/">www.who.int/nutrition/topics/vad/en/</a>

This table lists some internet resources on diet quality

and websites (Table 28.5) that are relevant to an evidence-based approach to diet quality.

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