

ON THE **CUTTING EDGE** Diabetes Care and Education

HOW RESEARCH IMPACTS CLINICAL PRACTICE AND CARE IN DIABETES

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Message from the Theme Editor: Linda M. Delahanty, MS, RD, LDN
Diabetes Center
Massachusetts General Hospital
Boston, MA

How does research impact clinical practice in diabetes? Let me count the ways! New research findings in the area of nutrition, lifestyle and diabetes management are continually being published that have the potential to affect both the focus and scope of evidence-based practice for diabetes medical nutrition therapy (MNT). As you will see in this issue of *On the Cutting Edge* (OTCE), we have organized an exciting lineup of articles that really spotlight the impact diabetes-related research can have on the practice of MNT, the development of clinical practice guidelines, the way we frame our clinical messaging to patients, and the establishment of effective community-based lifestyle programs that are positioned for reimbursement by third-party payers.

The first article in this issue, which I authored, is entitled, "The Four-Year Results of the Look AHEAD Trial: Implications for Evidence-based Practice in Type 2 Diabetes." The Look AHEAD study is an excellent example of how a large long-term, randomized, controlled clinical trial can contribute powerful evidence about the impact of a lifestyle intervention on weight loss, glycemic control, other cardiovascular risk factors; and the ability to reduce the use of medications for these conditions. It is important to remember that the Look AHEAD Study is an efficacy trial. Efficacy trials (explanatory trials) determine whether an intervention produces the expected result under ideal circumstances, i.e., they are proof of

concept trials. Therefore, it is critical that the intervention dose and frequency are intensive enough to produce changes in weight and physical activity significant enough to answer the study question, "Will a lifestyle intervention aimed at 7% weight loss and at least 175 minutes of physical activity reduce cardiovascular morbidity and mortality in people with type 2 diabetes (T2DM)?" Evidence from efficacy trials is often applied to MNT practice guidelines and thus it is important to examine their results carefully for clinical practice implications.

Efficacy and effectiveness exist on a continuum. Effectiveness trials (pragmatic trials) measure the degree of

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Print Communications Coordinator:
Liz Quintana, EdD, RD, LD, CDE

NewsFLASH Editor:
Lorena Drago, MS, RD, CDN, CDE

On the Cutting Edge Editor:
Alyce Thomas, RD

On the Cutting Edge Associate Editor:
Diane Reader, RD, CDE

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Linda Flanagan Vahl
DCE Administrative Manager
American Dietetic Association
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995

Payable to ADA/DCE noting preferred mailing address.

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beneficial effect under “real world” clinical settings. Hence, hypotheses and study designs of an effectiveness trial are formulated based on conditions of routine clinical practice and on outcomes essential for clinical decisions. The Diabetes Prevention Program (DPP) was designed as an efficacy trial; however, many effectiveness trials have been conducted to translate the use of the DPP lifestyle intervention into primary care, work site and community settings (1).

The article by Madelyn Wheeler, MS, RD, CD, CDE, FADA, and David Marrero, PhD, on “Translating the Diabetes Prevention Program Intervention into the Community: the YMCA Experience” is a great illustration of how effectiveness research was designed and implemented to translate the DPP lifestyle intervention to the YMCA community. More importantly, the evidence generated from this effectiveness research, and the potential for nationwide reach using the YMCA setting, has led to some major transformations in health care delivery models: the establishment of the National Diabetes Prevention Program at the Centers for Disease Control and Prevention (CDC) that is providing national training; a recognition program for community-

based DPPs; and the potential for third-party payers to provide reimbursement for these programs. These exciting developments, which have emanated from both efficacy and effectiveness research, offer important prevention opportunities for registered dietitians (RDs) and the estimated 79 million people with pre-diabetes in the United States!

The article by Diane Reader, RD, CDE, on “Current Research and Recommendations for Medical Nutrition Therapy in Patients with Gestational Diabetes” is another example of how research can impact practice guidelines by changing diagnostic criteria. If the new recommendations in the diagnostic criteria for gestational diabetes (GDM) are universally accepted, then the number of GDM cases in the United States is likely to double. This will also have an effect on the scope of practice for RDs who provide evidence-based MNT. Knowing the trends in research will help RDs to position themselves for more referral opportunities from primary care providers, obstetricians and nurse practitioners.

Marie-France Hivert, MD, MMSc and I collaborated on the article, “Genetic Testing and Personalized Medicine in Prevention of Type 2 Diabetes: Are We

STRATEGIC PRIORITY AREAS

GOAL 1: Sustain and grow a high level of satisfaction and retention among members.

- Use electronic technology to engage new and existing members.
- Promote and support member professional development.
- Maintain a high value of membership.

GOAL 2: Advance DCE’s unique position as the authority in nutrition and diabetes prevention, education and management.

- Promote and maintain new DCE image.
- Develop domestic and global alliance and stakeholder relationships.
- Promote and support evidence-based practice and research.

Research Toolkit

Are you interested in the latest dietetic research but not sure how to interpret the published data or apply the results to your practice? Do you want to collect outcomes data, but don't know how to get started? A new online Research Toolkit, developed by ADA's Research Committee is available free of charge to ADA members at http://ada.portalxm.com/research_toolkit/index.cfm. In addition to providing you with essential information on understanding and conducting research, continuing education credits are available for some topics.

The Toolkit consists of seven content topic areas. Each topic includes text that summarizes important learning points, PowerPoint presentations, practice exercises to reinforce learning, and links to nutrition and dietetics research articles that illustrate content learning objectives. The seven content topics areas will help you to:

- Find research that relates to areas of interest
- Critically appraise an article
- Evaluate whether the study design is suitable to answer the research question and test the hypothesis
- Interpret statistics and determine whether they are appropriately utilized in the study
- Apply research to practice
- Determine the first step in a research project
- Develop a good research question with a testable hypothesis

Additional topic areas for the Research Toolkit are under development. If you are interested in participating by developing or testing content materials, please contact Donna Pertel, MEd, RD at dpertel@eatright.org.

*Carol Ireton-Jones, PhD, RD
Research Toolkit Sub-Committee Leader*

Ready? Lessons from the Diabetes Prevention Program." This article addresses the evidence in an emerging area of research – the interface of diabetes, genetic risk and lifestyle. It illustrates a critical concept: the importance of not going beyond what is supported by the evidence when translating research into clinical practice; doing so could negatively impact the credibility of the practitioner. Genetic testing to identify risk for T2DM is not ready for clinical practice at this time because it is a still-growing field. To date, genetic risk scores for T2DM do not add significant predictive value beyond the clinically available risk factors, however there is evidence to support a change in the

way we frame our clinical messages to clients. As RDs, we can use this evidence to provide appropriate counsel about the value of genetic testing and to help motivate patients who might feel destined or fated to develop diabetes because of their genetic risk. We can also help them to reframe their thinking so they will feel empowered to prevent diabetes with modest lifestyle changes.

Research is the foundation of cutting-edge clinical practice. Improving your understanding of how to read and interpret research findings and applying research results to your practice can boost your career and yield incredible benefits for your customers, patients and clients. The article by

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THEME TEAM

Linda M. Delahanty, MS, RD, LDN
Wahida Karmally, DrPH, RD, CDE, CLS, FNLA
Elizabeth J. Mayer-Davis, PhD, RD
Maggie Powers, PhD, RD, CDE
Liz Quintana, EdD, RD, LD, CDE
Alyce Thomas, RD
Judith Wylie-Rosett, EdD, RD

REVIEWERS

Ellen Babb, MPH, RD, LD
Theresa Bejblik, RD, LD
Vanessa Cheek, MS, RD, LDN, CDE
Nedra K. Christensen, PhD, RD
Elizabeth DeRobertis, MS, RD, CDN, CDE
Kathleen Briggs Early, PhD, RD, CDE
Cynthia Floyd, MS, RD, CDN, CDE
Jody Greco, MS, RD, CDN
Andrea Hebert, MS, RD, LD, CDE
Nancy Held, MS, RD, CDE
Amy Hess, MS, RD, LD, BC-ADM, CDE
Paula K. Leibovitz, MS, RD, CDN, CDE
Clarissa Mantle, MS, RD, CDE
Melinda D. Maryniuk, MEd, RD, CDE
Kathryn Mount, MS, RD, LDN
Liz Quintana, EdD, RD, LD, CDE
Megan Robinson, MS, RD, LDN, CDE
Mariya Shurnene, MS, RD
Lynn Stiff, MS, RD, CD
Alyce Thomas, RD
Linda Flanagan Vahl

Judith Wylie-Rosett, EdD, RD, “Dissecting Research Articles,” is a step-wise guide for analyzing and interpreting research articles. I encourage you to read this article and use it as a roadmap to critically evaluate research and to help guide your decision making regarding evidence-based communications and practice.

To be credible and respected in our profession, it is critical that the art of MNT is backed by science. As RDs, we must demonstrate the ability to communicate the research evidence supporting diabetes MNT, counseling approaches, and nutrition education strategies and programs to other medical professionals, the media and the public. In addition, we need to help build the evidence to support the effectiveness of MNT. “Getting Started in Research: It Can Be Done,” by Maggie Powers, PhD, RD, CDE, is an excellent guide that outlines the steps on how to get started by collecting data to answer important research questions in your work setting and then publishing your research. For more information on how to analyze research articles and collect outcomes data, check out the new online Research Toolkit, developed by ADA’s Research Committee available free of charge to ADA members at http://ada.portalxm.com/research_toolkit/index.cfm. (Details on page 3)

In clinical practice, your ability to communicate and apply evidence-based research can improve the quality of care and client/patient outcomes, as well as establish the RD as a critical component of cost-effective health care. Outcomes research can increase inpatient consults and outpatient referrals to the RD, which in turn, can help support the need for maintaining or increasing staffing patterns and salaries. Moreover, understanding and using evidence-based research in your communications with other health professionals will increase your credibility and the likelihood of you

10 Ways to Build Your Research Skills

1. Follow the progress of multicenter clinical trials in diabetes that are forming evidence-based clinical practice. Listen to presentations of the results, read the research publications, carefully study the details of the nutrition interventions in these clinical trials and apply them to your practice. Use evidence-based materials from study websites and the National Diabetes Education Program website.
2. Read meta-analyses and reviews as a way to keep current and to understand the totality of the evidence in a specific area including the strengths and limitations of the research to date.
3. Learn from published research. Pay careful attention to the methods of research articles to see how studies are designed. Read the discussion sections of articles to learn about the strengths and limitations of specific research studies.
4. Use the Evidence Analysis Library (EAL) to stay informed of the research that supports practice and also pay attention to the areas mentioned as research gaps where more or stronger evidence is needed.
5. Apply to become an EAL work group member or evidence analyst. You will participate in a 2-day, evidence-based training workshop and learn to read and analyze articles. Go to the EAL Web site and click on “About” then select “Get Involved” for more information.
6. Join a journal club or start one to discuss research articles with colleagues.
7. Join the Dietetics Practice Based Research Network (DPBRN) by enrolling on the ADA Web site. The DPBRN conducts, supports, promotes and advocates for research in practice-based settings. By joining the DPBRN, you can become a part of research that is meaningful for your dietetics practice and in turn, make your practice part of meaningful dietetic research. As a member, you also have access to the top research experts in the field and network with others who share your passion for dietetics!
8. Approach colleagues conducting research and express interest in contributing your nutrition expertise and collaborating.
9. Find a mentor to guide you in building your research skills.
10. Use the new ADA online research toolkit that was designed to improve the research skills of RDs (see text box) for the highlights of this new resource for all ADA members.

being included in research collaborations in your practice area. The bottom line is research helps to prove the value of RD services, which can increase the demand for our services and provide job security and new opportunities!

If you are interested in improving your research skills and overall involvement in research, consider the 10 Ways to Build Your Research Skills listed above.

In closing, I would like to thank my wonderful, dynamic and enthusiastic Theme Team of Judith Wylie-Rosett, EdD, RD, Beth Mayer-Davis, PhD, RD, Maggie Powers, PhD, RD, CDE and Wahida Karmally, DrPH, RD, CDE, CLS. Their contributions to the idea-generation process made this issue a

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1. Delahanty LM, Nathan DM. Implications of the Diabetes Prevention Program and Look AHEAD clinical trials for lifestyle interventions. *J Am Diet Assoc*. 2008;108(4)(suppl 1):S66-S72.