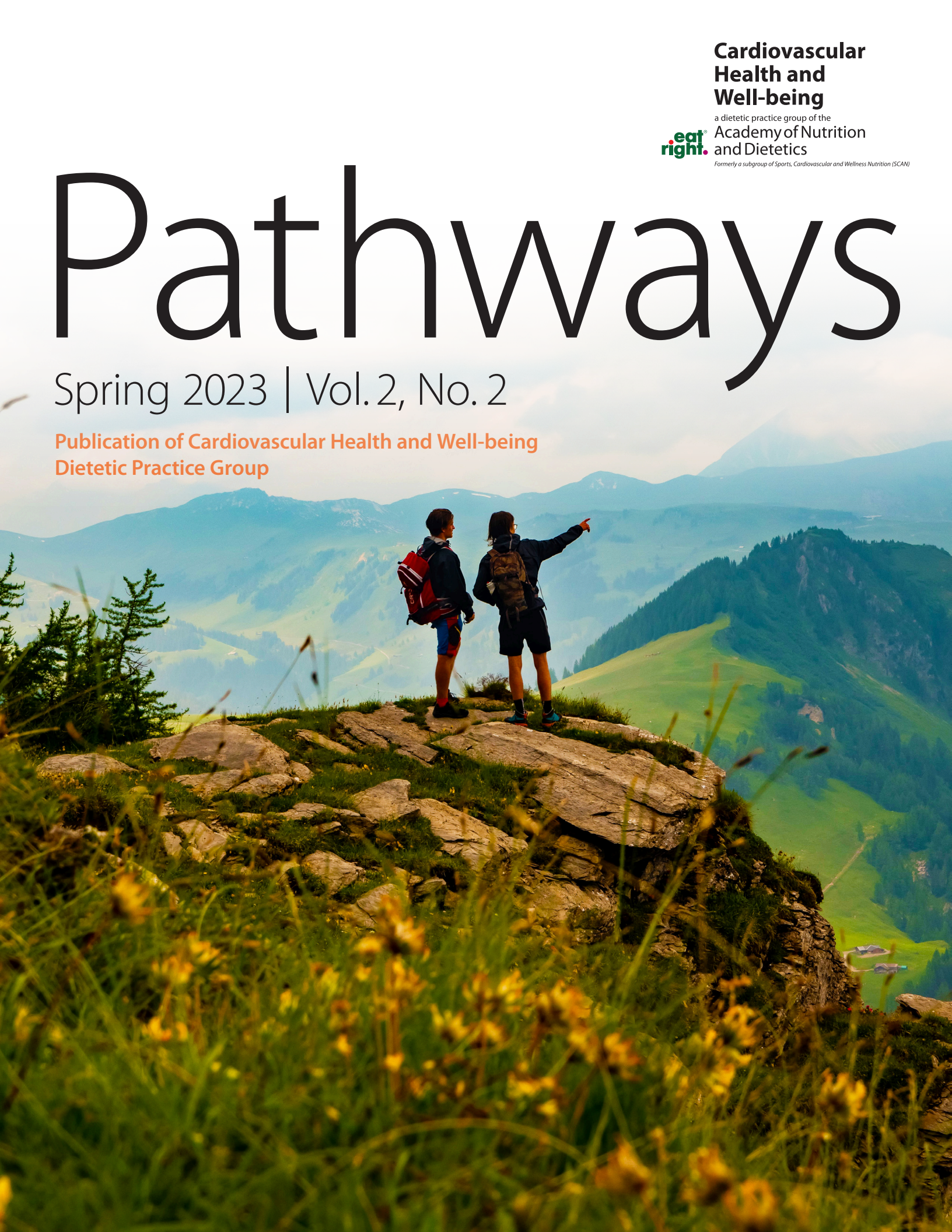
Cardiovascular Health and Well-being
a dietetic practice group of the
Academy of Nutrition and Dietetics
Formerly a subgroup of Sports, Cardiovascular and Wellness Nutrition (SCAN)

Pathways

Spring 2023 | Vol. 2, No. 2

Publication of Cardiovascular Health and Well-being Dietetic Practice Group



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Spring 2023 | Vol. 2, No. 2

Publication of Cardiovascular Health and Well-being (CV-Well), a dietetic practice group of the Academy of Nutrition and Dietetics

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In This Issue

CPE Opportunities in This Issue

After reading this issue of *Pathways*, current CV-Well DPG members (and nonmembers who purchase this publication) can earn 1 hour of continuing education units (CEUs), level 2 approved by the Commission on Dietetic Registration (CDR). Users must complete the post-test and Critical Thinking Tool in the Academy's Learning Management System (LMS) by May 31, 2024. You can begin this activity by logging in here. The certificate of completion is valid when the CPE self-assessment questionnaire is successfully completed, submitted, and recorded by CV-Well DPG/Academy of Nutrition and Dietetics.

Call for Authors

Pathways, the flagship quarterly publication of CV-Well DPG, welcomes the submission of manuscripts to be considered for research-based or practice-based articles. Research articles summarize and discuss recent scientific evidence related to cardiovascular health (prevention and treatment) and/or well-being. Practice articles translate evidence into application for dietitians working in various settings, providing tools and recommendations on topics related to cardiovascular health (prevention and treatment) and/or well-being. Authors may be DPG members or nonmembers. For more details and to complete the **Call for Authors Form**, visit *Pathway's* webpage. Manuscripts must be prepared and submitted in accordance with *Pathway's* **Guidelines for Authors**, accessed on the same webpage.

CV-Well Said

A Message from the Chair

CV-Well Springs into Action with Many Membership Opportunities

by Lauri O. Byerley, PhD, RDN, FAND, CV-Well Chair

Hopefully, spring has sprung in your area by the time you read this. Unfortunately, I'm writing this amid the coldest cold wave in the U.S. in more than a century. Mt Washington had a temperature of -46.9°F with a wind chill of -108.4°F. CV-Well has many members who live in the Northeast, so I hope you made it through the cold wave. Speaking of making it through, CV-Well is doing great, and I'd like to update you on our latest goings-on. What to look for? We have several exciting happenings in the works:

Have you attended any of our webinars? Our latest DPG webinar, "Which Diet is Best? A New Approach to Discussing Diet and Weight," was well attended and I heard lots of great comments. If you missed this, you can go to the Eatright store or our website and view it. As a member, you can watch it for free. All of our webinars are recorded and available to members. We plan to have a few more webinars before I wrap up my term at the end of May.

Good news! The CV-Well DPG website is being updated and greatly improved over the current one, which was quickly installed when we first formed so we could have a website. If you're interested in volunteering, consider joining the website committee we are forming. Email us at cvwell@eatright.org.

We have a team working on new Fact Sheets. Look for these later this year. You'll receive a CV-Well-Briefed announcement when they're available.

Our Mentoring Circles Program is doing great! Jean Storlie has done a fantastic job setting this up, and feedback from participants (mentees and mentors) has been positive. For those interested in participating in next year's (June 2023-May 2024) Mentoring Circles Program, email us at cvwell@eatright.org.

Since CV-Well's inception, six issues of *Pathways* have been published, with this one making the seventh. You can find all the issues on the website. Also, you can earn CPE units by reading the CPE-designated articles and answering a few questions. Another great member benefit!

FNCE® 2024 will be held in Denver, October 7-10. We're currently planning our reception and sunrise activity. We have some fun ideas in the works and your not-so-typical hotel reception. Stay tuned for updates.

Finally, get involved. We have many volunteer opportunities, and the camaraderie is fantastic. We would love to work with you.

As you can see, the cold hasn't chilled CV-Well at all, and we're springing into summer with lots of great member benefits. Don't forget to take advantage of them!

CPE Research Article

Translating Cardiovascular Risk Indices into Practice: Considerations for Nutrition and Dietetics Professionals

by Anna E. Bragg, MS, and Christine C. Ferguson, PhD, RD

Learning Objectives

- Identify key features of common screening tools used to estimate risk of cardiovascular disease and metabolic syndrome
- Describe emerging indices of central and total adiposity
- Select and utilize the most appropriate tool to assess a patient's cardiovascular risk

Cardiovascular disease (CVD) remains the leading cause of death in the United States.[1,2] The development and progression of CVD are influenced by factors ranging from age and smoking status to elevated blood pressure and excess adiposity.[3] Risk factors for CVD cluster and interact multiplicatively, such as in metabolic syndrome (MetS).[4,5] MetS is a clustering of disorders including hypertension, dyslipidemia, glucose intolerance, and abdominal obesity that together increase the likelihood of CVD by two-fold.[6]

Registered dietitian nutritionists (RDNs) and other nutrition and dietetics professionals have a unique role that includes assessing susceptibility to CVD, identifying key CVD risk factors, and promoting lifestyle interventions. Practitioners can choose from various tools to estimate overall CVD risk as well as prominent risk factors, specifically total and central adiposity. While some tools are more common to research settings, others can be readily incorporated into practice. To bolster nutrition in the prevention and management of CVD, it is important to be familiar with these measures as they may assist in identifying high-risk patients and guide nutrition interventions.

Assessing Overall Cardiovascular and Cardiometabolic Risk

Often viewed as the most traditional measure incorporated into patient care, the Framingham Risk Score (FRS) estimates an individual's percent risk of having a severe cardiovascular event in the next 10 years **(Table 1)**.[7] It uses a continuous scale to calculate an individual's risk, and an FRS >20% is generally equated to a high CVD risk requiring intensive risk factor modification. Although this score was developed in adults living in the U.S., it has also been extensively explored in other populations. For example, a retrospective study in an Indian population and a cross-sectional analysis in a Brazilian population both demonstrated that FRS was the most accurate predictor of CVD when compared with other assessment methods, such as the American Heart Association's CVD risk tool.[8,9] The prediction strength of the FRS is thought to be a result of its holistic approach and continuous scale scoring system. Nevertheless, authors acknowledge key risk factors missing from this score, notably abdominal obesity.[7]

While FRS prioritizes risk of global CVD, two other well-established risk assessment systems— the Adult Treatment Panel III (ATP-III) criteria and the International Diabetes Federation (IDF) risk assessment method—use a binary classification system to classify MetS risk.[10,11] Although these systems overlap in evaluated risk factors, the final assignment of MetS differs slightly; ATP-III criteria require ≥3 of 5 risk factors be met for diagnosis, whereas IDF criteria require abnormal glycemia and ≥2 other risk factors for diagnosis **(Table 1)**. Several studies have been conducted comparing the two systems, but results do not favor one over another. One cross-sectional study among Asian American adults suggested that the IDF scoring system was a stronger predictor of CVD, whereas a study in a population of Chinese adults indicated that the ATP-III criteria had the

highest sensitivity.[12,13] Conflicting results do not negate the usefulness of these risk classification systems; rather, they highlight the importance of employing the most appropriate system for the patient's background.

The cardiometabolic disease staging (CMDS) score is used to predict CVD mortality and categorize MetS risk levels of adults with obesity to better target individuals who would benefit from intensive weight loss therapy.[14] CMDS uses individual risk variables to determine an individual's placement on an ordinal scale, with levels 0-4 in order of increasing severity **(Table 1)**. This scoring system has been validated using two large national cohorts, the Coronary Artery Risk Development in Young Adults (CARDIA) study and the third National Heart and Nutrition Examination Survey (NHANES III), and has been shown to be an effective method of estimating diabetes, CVD, and all-cause mortality risk.[14]

Assessment tool selection is guided by the patient's characteristics, prevention and/or treatment goals, and available health information. In addition, an important factor to consider is the sensitivity of each tool to change over time in response to lifestyle modifications. Results from an ancillary analysis of a randomized controlled trial investigating the effects of a 12-month diet and exercise intervention among older adults with obesity suggest that some risk scoring methods have greater sensitivity in detecting change in disease risk than others.[15] Specifically, after a 12-month intervention, significant

Table 1. Components of Common Cardiometabolic Risk Scores

Screening Tool	Risk Factors	Scoring Scale	Unique Points
FRS	• Age • HDL-C • Total cholesterol • Systolic BP: treated vs not treated • Smoker? (y/n) • Diabetic? (y/n)	Continuous scale to determine risk percentage	• Different scoring scale by age and biological sex
ATP-III	• High glycemia • High WC • High TG • Low HDL-C • High BP	Binary scoring (yes/no) Diagnosed with metabolic syndrome if at least 3/5 criteria present	• Different biologic cut points for men and women on certain variables
IDF	• High fasting glycemia (or medication use) • High WC • High TG • Low HDL-C • High BP (or medication use)	Binary scoring (yes/no) Diagnosed with metabolic syndrome if high fasting glycemia + 2 other criteria present	• Different biologic cut points for men and women on certain variables • Accounts for use of diabetes or blood pressure medication
CMDS	• High WC • High BP (or medication use) • Low HDL-C (or medication use) • High TG (or medication use) • Impaired fasting glucose • Impaired 2-hour fasting glucose tolerance • Presence of active type 2 diabetes or CVD	Stepwise ordinal scale with levels 1-4 to assign increased risk	• Accounts for use of lipid-lowering or blood pressure-lowering medication • Different biologic cut points for men and women on certain variables

FRS = Framingham Risk Score; ATP-III criteria = National Cholesterol Education Program Adult Treatment Panel III Score; IDF = International Diabetes Federation Score; CMDS = cardiometabolic disease staging; HDL-C = high-density lipoprotein cholesterol; BP = blood pressure; CVD = cardiovascular disease; WC = waist circumference; TG = triglycerides; y/n = yes/no

changes were observed in the FRS and CMDS scores, but not in the ATP-III or IDF assessments. These findings could be explained by FRS and CMDS accounting for biological variables that are not measured on a binary yes/no scoring system, allowing for greater distribution of scores to assess change. While this is the only study comparing various scoring tools over time, previous research supports the sensitivity of FRS to nutrition interventions such that a "green" Mediterranean diet intervention led to a 3.7% reduction in FRS over 6 months.[16]

Overcoming Current Limitations to Assess Adiposity for CV Health

It is well established that visceral adiposity increases risk of MetS due to its association with chronic low-grade inflammation and metabolic dysfunction.[17] Dual-energy x-ray absorptiometry, computed tomography, and magnetic resonance imaging are gold standard measures of visceral adiposity, yet they have significant limitations regarding cost, participant burden, need for trained staff, and accessibility.[18] Various indices have been developed and validated with the goal of overcoming current limitations of body composition assessment in practice. As research evolves, practitioners should become familiar with these new measures and utilize them when appropriate.

Other alternative methods for assessing body composition exist, such as the visceral adiposity index (VAI), a validated tool used to estimate visceral adiposity in adults. It is a sex-dependent equation that incorporates anthropometric measures and circulating biomarkers **(Table 2)**.[19] A higher VAI score suggests a higher amount of visceral adiposity and, thus, higher CVD risk. Previous research has demonstrated significant correlations between VAI and MetS, cardiovascular events, and cerebrovascular events in primary care patients.[19] This index also has been associated with other measures of metabolic dysfunction (e.g., insulin resistance) that deleteriously impact cardiovascular health.[20,21]

Research surrounding the VAI has expanded into its association with dietary intake. A cross-sectional analysis of NHANES data investigated the relationship between adherence to the Dietary Approaches to Stop Hypertension (DASH) diet and VAI score in older adults.[22] Results suggested that a higher DASH diet score was associated with a lower VAI score. Furthermore, a cross-sectional study among adults with obesity revealed that participants who adhered to the Mediterranean diet exhibited significantly lower VAI scores than those with a low adherence.[23] It should be noted that the VAI was originally validated in a sample of non-Hispanic white participants, so further research is needed to determine its applicability to racially diverse populations.

While the VAI is designed to target central obesity, other indices have been developed to estimate total body fat. The body adiposity index (BAI) is used to estimate percent body fat for adults of varying ethnicities.[24] It is touted for its simplicity as it requires only hip circumference (HC) and height for estimation **(Table 2)**, but its benefit in comparison to other conventional measures of body fat remains uncertain. For example, BAI in young adults has been demonstrated to be associated more with percent body fat than body mass index (BMI).[25] However, in another study of adult participants, BAI was no more accurate than BMI, waist circumference (WC), or HC.[26] These divergent results demonstrate the need for continued investigation of simple measures before clinical implementation.

Table 2. Emerging Indices to Assess Body Adiposity

Index		Equation	Units
VAI	M	[WC / 39.68 + (1.88 × BMI)] × (TG / 1.03) × (1.31 / HDL-C)	WC = cm, BMI = kg/m^2, TG = mmol/l, HDL-C = mmol/l
	F	[WC / 36.58 + (1.89 × BMI)] × (TG / 0.81) × (1.52 / HDL-C)	
BAI	M/F	[HC / (Height$^{1.5}$)] – 18	HC = cm, Height = m
RFM	M/F	64 – [20 × (Height / WC)] + [12 × Biological Sex]	Height = m, WC = m Biological Sex = 0 for M, 1 for F

VAI = visceral adiposity index; BAI = body adiposity index; RFM = relative fat mass index; M = male; F = female; WC = waist circumference; BMI = body mass index; TG = triglycerides; HDL-C = high-density lipoprotein cholesterol; HC = hip circumference

A similar tool designed for simplicity is the relative fat mass (RFM) index. RFM is based on WC, height, and biological sex **(Table 2)**.[27] Its association with percent body fat has been established among children, young adults, and individuals with Down syndrome.[28-30] Its sensitivity to change in response to a 12-month nutrition intervention has been demonstrated among older adults with obesity, albeit females only.[31] A study conducted among adults in Israel determined that RFM was a significant predictor of dyslipidemia and metabolic syndrome, thus highlighting the relationship between this emerging index and other cardiovascular risk factors.[32]

Conclusions

All of the tools discussed in this review have been validated for use in assessing CVD and/or MetS risk and have been implemented in research settings; however, they are only intermittently utilized in clinical settings. While they each have their strengths, they also have their own limitations that may hinder applicability in a clinical setting.

From the perspective of the nutrition and dietetics professional, the selection of which tool to use will largely depend on the patient's characteristics (e.g., age, race, ethnicity) and what information can feasibly be collected (e.g., demographics and anthropometrics vs. biomarkers). The best tool to use will be one that has been validated for populations that includes your patient, and one that you have accurate information to use to calculate the patient's risk. While the indices presented here can provide a general idea of the patient's risk, it is ideal to use an index longitudinally to monitor risk over time. The results of the risk calculation paired with the patient's family history and personal goals will help inform what to prioritize during intervention, which may or may not include nutrition counseling for heart health.

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CPE Practice Article

Sustainable Diets in the Promotion of Cardiovascular Health

by Tiffany Ma, RDN

Learning Objectives

- Explain how agricultural food production impacts planetary health
- Identify the relationship between plant-based diets and cardiovascular risk

According to statistics from Google Trends, the word "sustainable" hit an all-time high in April 2022, setting a record for the past 18 years of search history.[1] Indeed, individuals are becoming increasingly aware of the growing concerns of climate change and the importance of adopting more sustainable practices. In fact, Information Resources, Inc., a data analytics and market research company, identified "sustainability" as one of the top five food trends of 2022 as a result of COVID-19.[2]

Sustainable Diets, Defined and Described

The word "sustainable" in the context of food and nutrition is multifaceted. According to the Food and Agriculture Organization of the United Nations, sustainable diets are "*diets with low environmental impacts that contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources.*"[3]

The United States Environmental Protection Agency revealed in a 2020 study that agricultural food production accounts for about 11% of greenhouse gas emissions (GHGE).[4]

Although technological advances in agricultural food production have been developed to reduce hunger and poverty, as well as address increases in human population, they have had a less than desirable impact on the environment as agricultural biodiversity decreases and metabolic diseases continue to affect human health. The advancements made to address the global food system have resulted in a greater production of foods that lack dietary fiber, micronutrients, and several classes of phytochemicals.[5]

The American Heart Association defines a healthy food system as one that promotes and maintains nutrient-dense dietary patterns that optimize health on an individual level. The AHA also defines a sustainable food system as one that meets current population needs without compromising the needs of future generations.[6] A sustainable and healthy food system should work on reducing overall GHGE from agricultural food production, while also improving dietary intake to combat chronic disease. With cardiovascular disease (CVD) remaining the leading cause of death since 1975, registered dietitian nutritionists are in a unique and ideal position to educate clients on various ways to achieve sustainability in their dietary patterns and support a healthier planet and life.[7]

Plant-Based Diets to Reduce CVD Risk

The Western diet, often characterized by highly processed and refined foods, with a high content of added sugars, salt, and saturated fat, is recognized as an important factor in contributing to chronic health conditions and increased CVD risk.[8] In comparison, choosing more plant-based foods and fewer animal-based foods may be associated with lower CVD risk.[9]

Plant-based diets (PBDs) may potentially reduce diet-related land use by 76%, diet-related GHGE by 49%, green water use by 21%, and blue water use by 14%.[10] Green water is the water held in soil that is exclusively used by plants; blue water is the water in our surface and groundwater reservoirs.[11] PBDs follow a dietary pattern that primarily focuses on plant products such as fruits, vegetables, legumes, whole grains, nuts, seeds, plant-based oils, and contains fewer animal-based foods overall. The many dietary components of a plant-based diet closely follow the dietary guidelines of the Mediterranean and DASH (Dietary Approaches to Stop Hypertension) diets, both of which have been proven to be effective in lowering CVD risk.[12]

An analysis examining the relationship between plant-based diets and cardiovascular health found a 29% lower rate of coronary heart disease (CHD) mortality among vegetarians compared with omnivores.[13] PBDs have not been examined in many randomized controlled trials (RCTs) with cardiovascular endpoints, but of note, a handful of RCTs have favored a

vegetarian diet in reducing CVD risk. In a meta-analysis of RCTs, vegetarian diets seem to lower total cholesterol, low-density lipoprotein (LDL), high-density lipoprotein (HDL), and non-high-density lipoprotein (non-HDL) cholesterol, with pooled estimated changes of -0.36 mmol/L, -0.34 mmol/L, -0.10 mmol/L, and -0.30 mmol/L, respectively.[14] However, the healthfulness of the plant foods included in these diets is not equivalent, because PBDs that contain a higher amount of nutrient-dense and lower-calorie foods (such as those mentioned above) promote heart health, whereas PBDs that include less nutrient-dense and more higher-calorie food (such as refined grains, potatoes, and sweetened beverages) are linked to increased CVD risk.[15]

Eating Lower on the Food Chain

A study examining the environmental impact of 140 countries and their respective diets found that vegan diets can reduce greenhouse gas footprint by an average of 70%.[16] While vegan diets were shown to be the most impactful, the other environmentally-friendly diets, from the most sustainable to the least sustainable, were listed as follows:

1. **Low-food chain.** Insects; aquatic animals; pulses and soy; grains and starchy roots; fruits and vegetables; nuts, seeds, and oils
2. **Two-thirds vegan.** Meat is included in one of three meals. Red meat; poultry; aquatic animals; dairy; eggs; pulses and soy; grains and starchy roots; fruits and vegetables; nuts, seeds, and oils
3. **Pescetarian.** Aquatic animals; dairy; eggs; pulses and soy; grains and starchy roots; fruits and vegetables; nuts, seeds, and oils
4. **No dairy.** Red meat; poultry; aquatic animals; eggs; pulses and soy; grains and starchy roots; fruits and vegetables; nuts, seeds, and oils
5. **No red meat.** Poultry; aquatic animals; dairy; eggs; pulses and soy; grains and starchy roots; fruits and vegetables; nuts, seeds, and oils
6. **Vegetarian.** Dairy; eggs; pulses and soy; grains and starchy roots; fruits and vegetables; nuts, seeds, and oils
7. **Reducing meat.** Three servings of red meat per week. Red meat; poultry; aquatic animals; dairy; eggs; pulses and soy; grains and starch roots; fruits and vegetables; nuts, seeds, and oils
8. **Meatless one day/week.** A lacto-ovo vegetarian diet for one day/week. Red meat; poultry; aquatic animals; dairy; eggs; pulses and soy; grains and starchy roots; fruits and vegetables; nuts, seeds, and oils

Choosing Plant-Based Proteins

Meatless Mondays, a campaign dedicated to increasing attention to a meat-free day to promote awareness of health and the planet, continues to be practiced since it originated in 2003.[17] Although one meatless day may not seem impactful compared with the above sustainable diet list, studies indicate that the intention to follow a meat-free day reveals a more positive attitude towards adopting vegetarian or vegan diets.[18] According to an interactive online calculator by Meat Free Monday (MFM), following a meat-free day for one year can limit about 434 miles worth of GHGE and save about 789 bathtubs of water.[19]

The largest systematic review involving more than 1.4 million people and their dietary assessments for up to 30 years examined the relationship between meat consumption and cardiovascular disease. The analysis indicated that consumption of 50 g/day of processed meat such as bacon, ham, and sausages and the consumption of 50 g/day of unprocessed red meat such as beef, lamb and pork can increase the risk of coronary heart disease by 18% and 9%, respectively. The findings are attributed to saturated fat content and the sodium in processed meat.[20]

Pulses, which include beans, peas, lentils, chickpeas, and soybeans, require far less production effort and thus, are good sources of protein for those looking to eat greener. Studies examining the relationship of pulse consumption to CVD risk factors noted improved lipid profile, glycemic control, and blood pressure (BP), all of which reduce overall CVD risk.[21] In a study examining soy and cardiovascular health, dietary soy was associated with lower BP, encompassing a mean change (±SEM) in systolic (-7.5 ± 1.2 vs. -3.6 ± 1.1 mm Hg, $P< .05$), diastolic (-4.3 ± 0.8 vs. -1.9 ± 0.7 mm Hg, $P<.05$), a reduction in low-to-high density lipoprotein ratio (-0.33 ± 0.1 vs. 0.04 ± 0.1 mmol/L, $P<.05$) and triglycerides (-0.2 ± 0.05 vs. -0.01 ± 0.05 mmol/L, $P<.05$), and improved peripheral vascular resistance ($P<.01$).[22]

How RDNs Can Promote Sustainability and CV Health

Here are some guidelines on what dietitians can do to promote sustainable diets while helping clients to reduce their CVD risks:

Be Clear with Messaging

Overall perceptions of a sustainable diet may feel like a push to transition over to a vegetarian or vegan diet. For many, this transition may feel too unfamiliar and unlikely. RDNs should focus on discussing total dietary patterns and small realistic changes that their patients and clients can follow.

Learn and Stay Up to Date

RDNs are urged to do their best to stay up to date with available resources that promote planetary and human

health. In January 2021 the Academy of Nutrition and Dietetics released, "Sustainable Food Systems Primer for RDNs and DTRs," a comprehensive 7-module series that provides foundational information and applied learning concepts that dietetics professionals can use to learn more about sustainable food systems.[23]

The EAT-Lancet Report is the first comprehensive scientific review that has set forth recommendations on how to achieve a healthful diet while promoting a sustainable food system. The report includes actionable strategies for individual health and food production systems.[24]

Food + Planet, an organization cofounded by two registered dietitians, focuses on improving the knowledge and skills of professionals to advocate for sustainable food systems. It provides plenty of opportunities to learn about all the aspects of sustainability through a professional's own framework, which considers sociocultural, economic, nutrition, and planetary aspects.[25]

Improve Cultural Competency

Navigating perceptions from various cultural backgrounds may be a challenge when thinking about ways to promote more plant-based eating practices. In addition, in many cultures, eating meat is embedded in tradition and status. Being able to make appropriate recommendations while working from a culturally competent lens is important for realistic change.[26]

Get Involved

Among the many ways RDNs can promote a sustainable food system is to get involved themselves. Practitioners can and should also connect with local farms and farmers' markets in their respective communities to understand their role and mission while also promoting buying local when applicable. Local farms as well as community and urban gardens are always in need of volunteer work, and this may be a great opportunity to get younger children involved with understanding the importance of community involvement and local food systems. In addition, advocating to buy local food will promote less food transportation, thereby saving on fuel and producing fewer GHGE.

Remember to Extol the Benefits

RDNs are well poised to serve as experts responsible for translating current research regarding sustainable diets to their clients and the population. Practitioners need to feel confident in helping others understand their own motivations for change, and explain the benefits that can affect their individual long-term health and their environment when choosing a more sustainably-sound diet. Through one-on-one, public health education, or group sessions, RNDs can encourage and promote ways to choose a more sustainable diet to reduce CVD risk while improving planetary health at the same time.

Conclusion

Nutrition and dietetics professionals are ideally positioned to promote long-term change with health in mind at the individual and environmental level. They need to be well-versed in understanding the impact of plant-based diets on decreasing CVD risk and carbon footprint. Plant-based diets may pose their own challenges as perception may often be seen as a barrier due to many factors that affect food choice such as taste, accessibility, environment, and culture. Resources to learn more about eating for planetary health are becoming more abundant and RDNs should take advantage of these opportunities.

***Tiffany Ma, RDN**, is a registered dietitian in New York City. Her nutrition philosophy strongly supports an integrative approach to improving overall health outcomes by understanding the individual as a whole. Movement has been a key component in Tiffany's lifestyle, through the power of strength training and endurance sports. She also enjoys solo-traveling, meditation, cooking cultural foods, and content creation. The author has reported no potential conflicts of interest.*

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CV-Well Equipped

New Products, Tools, and Trends

The CPE practice article in this issue discusses sustainable diets and cardiovascular health, so we decided to focus "CV-Well Equipped" on the same topic and report the exciting result of a recently published study. —Editor

Grocery Purchases Suggest Alternative Ways to Reduce Your Carbon Footprint

by Jennifer Burris, PhD, RDN, CSSD, CDES and Lauri O. Byerley, PhD, RDN, FAND

To be or not to be sustainable? That is the question.

Most people would answer, "Yes." But sustainability is a tough word to describe, as the definition can vary depending on the context. Sustainable nutrition includes diets with low environmental impact and those that can provide the essential energy and nutrients to the present population without compromising the ability of future generations to meet their nutritional needs. Many consumers think they must become vegan or vegetarian to have a sustainable diet. Good news! A recent analysis of household grocery purchases in the U.S. suggests other ways to reduce greenhouse gas emissions without making drastic dietary changes.[1]

In that study, Song et al. analyzed data from grocery shopping records for 57,578 U.S. households over one year and calculated a carbon-footprint-reduction potential for each household. The analysis was performed in 2010, when food delivery and online shopping were likely less prevalent than in 2023, so these were not considered in the calculations.

Vegan/Vegetarian: Not the Only Way

Many people know that meat and dairy products have higher greenhouse gas emissions than fruit, vegetables, and grains. This is because the animals are inefficient at converting plant food into energy, and it takes resources that emit greenhouse gases to bring these to market. Thus, consumers could reduce their own carbon footprint by decreasing meat and dairy consumption. While this is true, the authors of the study present other practical suggestions, particularly for smaller households, that might be more efficient.

The study reported that 71% of households could reduce their greenhouse gas emissions by implementing three recommendations regarding purchasing. The researchers determined that these purchasing strategies, if replicated across the U.S., could reduce greenhouse gas emissions by 31%. Wow! Importantly, the recommendations might also improve overall diet quality.

Three Planet-Friendly Purchasing Strategies

While there can never be a substitute for eating a diet that meets the Dietary Guidelines and one's nutrient needs, implementing the following strategies, based on what the researchers found, could go a long way to help reduce greenhouse gas emissions:

1. Buy less food in bulk quantities if you are a small household (1-2 people). Often smaller households purchase in larger quantities because it is cheaper, but the food is not eaten. Also, manufacturers should provide appropriate packaging sizes that are cost-effective. The research estimated this act could help reduce carbon emissions by two-thirds.

2. Reduce consumption of high-calorie, low-nutritional-value foods, such as snacks, ready-made foods, and drinks. Many of these foods are highly processed and resource-intensive (more ingredients and processing). Eating less of these foods could reduce carbon emissions by 87%.

3. Purchase fewer savory bakery products and ready-made foods. While the carbon emissions from these foods are lower than others, regularly buying them adds up to substantial carbon emissions.

Armed with this research, you can now equip your clients, friends, and others with easy-to-implement nutrition sustainability suggestions to help reduce their carbon footprint without becoming a vegan/vegetarian. Question answered! (But are we really surprised that we can make a big difference—in our own health and the planet's health—just by eating healthy?)

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CV-Well Done

Members in the Spotlight

Interviewed by Jean Storlie, MS, RD, CV-Well Leadership Cultivation Director

Featured in this issue is Nancy Clark, MS, RD, CSSD, FACSM, FAND—a pioneer in sports nutrition whose expertise extends to her athlete clients as well as fellow professionals seeking information and tips.

Nancy Clark has been making a positive impact on sports nutrition since its infancy. In addition to counseling clients in her private practice, Nancy has served as editor, book author, columnist, and workshop leader, providing colleagues with information and guidance. Her active volunteerism and leadership in organizations—including the CV-Well, SCAN, and Nutrition Entrepreneurs dietetic practice groups, the American College of Sports Nutrition, and Professionals in Nutrition for Exercise and Sports—reflect Nancy's longtime dedication to her profession.

What's the most enjoyable part of your work?

I thrive on the satisfaction that comes with helping athletes with dysfunctional eating overcome their food fears and transform their disordered eating practices into effective fueling strategies.

What accomplishments are you most proud of in your career?

I'm very proud of my *Sports Nutrition Guidebook*, now in its 6th edition. This best-selling resource has flourished since 1990. That's a long time for a book to stay alive! I'm grateful to the many RDNs who have used the book as a reliable resource and have recommended it to their clients. I'm also proud of the Sports Nutrition Workshops I co-led with exercise physiologist Dr. Bill Evans. We offered these 2-day workshops for over 25 years, starting when sports nutrition was in its fledgling stages. We encouraged many other aspiring sports RDs to join the fun—and they did! Many have told me those workshops influenced their career paths.

Who has helped and inspired you in your career?

The connections and friendships I've made as a volunteer with SCAN (now SHPN and CV-Well) and the Nutrition Entrepreneurs DPGs have been invaluable and inspirational. These colleagues provided support when I was a floundering young sports dietitian and book author. I also learned so much about exercise physiology from Dr. Bill Evans, co-presenter of our workshops. His knowledge helped equip me to be able to call myself a "sports nutritionist" in the days when the Certified Specialist in Sports Dietetics (CSSD) credential didn't exist.

What advice do you have for newcomers to our field?

I talk with many students and interns who want to jump into sports nutrition as a private practitioner. I encourage them to first get a strong, relevant clinical background. Private practice can be very lonely, with no one to learn from. Also, students should know that building a financially viable business takes time—3 to 5 years is what "they" say. I say it took me about 5 to 9 years (but sports nutrition was in its early stages).

What are your keys to well-being?

My well-being is based on getting outside and bathing in nature, be it walking with my dog, working in my garden, or snowshoeing with life-long friends. I need sunlight, fresh air, and exercise every season of the year!

What's your favorite quote or saying?

I commonly remind myself *"Everything will work out OK."* So far, so good! My advice: Get involved with this amazing group of dietitians!

CV-Well Rounded

News, Notices, and More

Welcome New Members!

The CV Well DPG leadership would like to welcome first-time members who have joined our DPG since June 1, 2022: **Victoria Carty, Kimberly Gardner, Maggie Hostetter, Emma Kasahara, Lauren Leahy, Jessica Maciel, Julia McGinnity, Macie Posie, Domanique Richards, Erin Ryan, Courtney Shipman, Sheetal Tolia, Elizabeth Tierney, Erika Trelut, and Linda Zeitzoff**.

Welcome to CV-Well! We are delighted you have joined our group and look forward to collaborating with you.

Renew Your Membership!

We value your contributions as a member of CV-Well DPG. Please renew your membership before May 31, 2023. Click here to renew.

When renewing, you can update your member demographics, change your affiliate, add or remove DPGs and MIGs, and join Academy groups. You can also make a donation to ANDPAC, the Academy's political action committee, and to the Foundation, the philanthropic arm of the Academy.

The renewal process is quick and easy. Consider signing up for auto-renewal to make next year's renewal even easier!

CV-Well Read Book Club

Join your peers on April 24 at 6-7 pm (CT) for a discussion on the PBS video: "The Trouble with Chicken." You can access the video here.

In this documentary, FRONTLINE investigates the spread of dangerous pathogens in our meat—particularly poultry—and why the food-safety system isn't stopping the threat. Focusing on a *Salmonella Heidelberg* outbreak at one of the nation's largest poultry processors, "The Trouble with Chicken" reveals how contaminants are evading regulators and causing more severe illnesses at a time when Americans are consuming more chicken than ever. Register here today!

Mentoring Circles Program Wraps Up Successful Year

CV-Well established the Mentoring Circle Program to help develop the next generation of CV-Well dietitians.

Each circle consists of six to eight members and one leader who engage in a year-long learning journey. The program is a multifaceted networking opportunity designed to foster deep professional relationships and collaborative learning. It delivers on the CV-Well Mission and Values to develop and empower members to be leaders within CV-Well and the profession.

When surveyed, the 2022-2023 participants provided favorable responses, indicating a 95% success rate of the program. Mentees reported:

- 100% would recommend the program
- 95% believe that it helped them grow professionally
- 89% believe that it helped them build deep professional relationships

CV-Well members are encouraged to review the program offerings and sign up as a mentee or mentor online. Click here to sign up!

Don't Forget These Member Benefits on Our Website!

The CV-Well website offers members-only access to all past issues of *Pathways*, as well as free access to the Natural Medicines Database. This resource provides unbiased, evidence-based, clinical information on complementary, alternative, and integrative therapies and access to the EBSCO Database, which contains more than 10,000 journals and magazines with a wide array of content on nutrition, well-being, and more.

CV Reimbursement Trends and Efforts

If you're interested in becoming involved in our efforts to increase awareness of reimbursement issues and topics, contact Carol Bradley at carol.bradleyrd@yahoo.com.

We Welcome Your Input!

Do you have an idea for a CV-Well webinar or Pathways article? If so, please email us at cvwell@eatright.org.

CV-Well Seasoned

Recipes from Your Colleagues

Warm Spinach Artichoke Wraps

Recipe by Claire Tibboles, RD
Graduate Assistant, Bowling Green State University

Wraps are deemed healthier than bread, yet they're typically packed with sodium! Yes, there are wraps out there that are lower in sodium, and this recipe demonstrates how you can use typically high-sodium ingredients with heart health in mind. Using beans in a recipe creates more volume and adds fiber, vitamins, and minerals. Additionally, rinsing canned beans can significantly reduce the amount of sodium present.

Total time: 15-20 minutes
Serving size: 1 wrap
Serves 2

Ingredients

- ½ cup low-sodium cannellini beans, drained and rinsed
- 2 Tbsp cream cheese
- ¼ tsp garlic powder
- 1 tsp grated parmesan
- 2 Tbsp shredded mozzarella
- ¼ cup onion
- 1 cup fresh spinach, packed
- ¼ cup canned artichoke hearts, drained
- ½ tsp olive oil
- 2 (8-inch) whole wheat wraps
- ¼ cup jarred roasted red pepper, drained and sliced

Directions

1. In a medium bowl, add cannellini beans and smash with a fork. Add cream cheese, garlic powder, parmesan, and mozzarella. Set aside.
2. Small dice onion. Roughly chop artichoke hearts. Cut stems off spinach leaves if desired.
3. Heat ½ tsp olive oil in a skillet on medium heat. Add diced onion to skillet. Cook for 3-4 minutes or until onions are tender. Add artichokes and spinach. Cook until spinach is wilted, about 2 minutes.
4. Combine contents from skillet with the bean/cream cheese mixture.
5. Divide mixture between 2 wraps. Add roasted red pepper and additional fresh spinach if desired. Fold in 2 ends and roll wrap to close. Sear each side of wrap on medium heat for 1-2 minutes or until sides are golden brown. Enjoy!

Nutrition Facts

Per serving (1 wrap): 216 calories, 10g total fat, 13g protein, 24g carbohydrate, 419mg sodium