Position of the Academy of Nutrition and Dietetics: Medical Nutrition Therapy Behavioral Interventions Provided by Dietitians for Adults with Overweight or Obesity

Position Statement: It is the position of the Academy of Nutrition and Dietetics that medical nutrition therapy (MNT) behavioral interventions for adults (18 years and older) with overweight or obesity should be a treatment option, when appropriate and desired by the client, to improve cardiometabolic, quality of life, and anthropometric outcomes. Registered dietitian nutritionists or international equivalents (dietitians) providing MNT recognize the complex contributors to overweight and obesity, and thus should individualize interventions, based upon a shared decision-making process, and deliver the intervention in an inclusive, compassionate, and client-centered manner. Interventions should include collaboration with an interprofessional team when needed. Dietitians should strive to increase health equity and reduce health disparities by advocating and providing opportunities for increased access to effective nutrition care services.

In 2023, six organizations, the Academy of Nutrition and Dietetics (Academy), American Society of Metabolic and Bariatric Surgery (ASMBS), Obesity Action Coalition (OAC), Obesity Medicine Association (OMA), the Strategies to Overcome and Prevent (STOP) Obesity Alliance, and The Obesity Society (TOS), developed a consensus statement on obesity, which describes obesity as a chronic disease characterized by excessive fat accumulation or distribution that presents a risk to health and requires life-long care.[1] Currently, greater than 70% of the adult US population has overweight or obesity.[2] Given the prevalence of this chronic disease, ensuring access to care for those who desire treatment, and for whom it is appropriate, can improve the health of many adults in the US and is essential to reduce health inequity and disparity.[3]

One effective method of evidence-based care for adults (18 years and older) with overweight and obesity is medical nutrition therapy (MNT) behavioral interventions, when this is an appropriate and desired approach for and by the client.[4] MNT behavioral interventions for overweight or obesity are delivered by a registered dietitian nutritionist or international equivalent (dietitians) and follow the nutrition care process to improve client outcomes, including nutrition assessment/reassessment, nutrition diagnosis, nutrition intervention, and nutrition monitoring and evaluation.[5] As overweight and obesity are complex, multi-faceted conditions, it is important for dietitians to take into consideration the nuances of these health conditions when providing MNT behavioral interventions. **Thus, the objective of this Position Paper is to describe potential benefits and concerns regarding dietitian-provided MNT behavioral interventions for adults with overweight and obesity and to inform dietitians on implications for practice.**

This Position Paper is supported by a systematic review and evidence-based practice guideline (EBPG). These resources are available both on the Evidence Analysis Library website[6] and in the *Journal of the Academy of Nutrition and Dietetics*,[4,7] and are described briefly here.

Systematic Review

A systematic review was conducted to examine current research on the effect of behavioral weight management interventions provided by dietitians working with adults with overweight or obesity.[7] Outcomes of interest included cardiometabolic outcomes (fasting blood glucose [FBG], blood pressure, waist circumference [WC]), anthropometrics (body mass index [BMI], percent weight loss), quality of life (QoL), adverse events, and cost-effectiveness. Authors followed Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) methods from the Cochrane Collaboration and methods from the Academy and

adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist.[8-10] Six databases were searched for articles published in peer reviewed journals from 2008 to January 2021 to identify evidence addressing the research question. After screening 19,000+ titles/abstracts and 900+ full-text articles, authors identified 62 RCTs and 3 non-randomized controlled trials examining the effects of weight management interventions provided by dietitians in the target population. Meta-analyses were conducted when possible using a random-effects model. Briefly, moderate or high certainty evidence described that weight management interventions provided by a dietitian reduced systolic blood pressure, WC, and BMI and increased percent weight loss. These interventions also reduced diastolic blood pressure (low certainty), improved mental (moderate certainty) and physical QoL (low certainty) , and may be cost-effective (low certainty).[7] Sub-group analyses planned *a priori* were conducted to investigate sources of heterogeneity between studies and trends in intervention characteristics contributing to efficacy. While confidence intervals of effect sizes overlapped between sub-groups, some patterns emerged. Interventions that included at least five contacts between the client and dietitian and had a duration of at least one year were generally more efficacious than those with fewer contacts or shorter durations. Follow-up data demonstrated that efficacy was generally reduced by three months after the end of the intervention with the dietitian.[6]

Evidence-based Practice Guideline (EBPG)

Results of the systematic review, along with clinical expertise and consideration of client values, were used to inform an EBPG.[11] The objective of the EBPG was to provide recommendations for dietitians who deliver MNT behavioral interventions for adults (18 years and older) with overweight and obesity, when appropriate for and desired by the client.[4,6] The EBPG was created following GRADE methods from the Cochrane Collaboration and methods

from the Academy.[10,12] Evidence from the systematic review was translated to recommendation statements using an Evidence to Decision framework, which guides expert panel members to consider the strength and direction of findings, balance of benefits and harms, importance of affected outcomes, costs, equity, client values, acceptability and feasibility to stakeholders and clinical expertise.[13,14] When evidence from the supporting systematic review was not adequate to address topics of interest, external systematic reviews were utilized to support recommendations or expert opinion was used to create consensus recommendations. The EBPG included 17 recommendations on MNT approach for adult overweight and obesity management, delivering MNT interventions, dietary and lifestyle interventions and approaches, and delivering interventions with special populations (**Supplemental Table 1**).[4,6] The EBPG highlights the importance of delivering flexible and inclusive client-centered care and adjusting interventions as client needs change over time. A summary of benefits and opportunities for adult weight management MNT behavioral interventions is described in **Figure 1**.

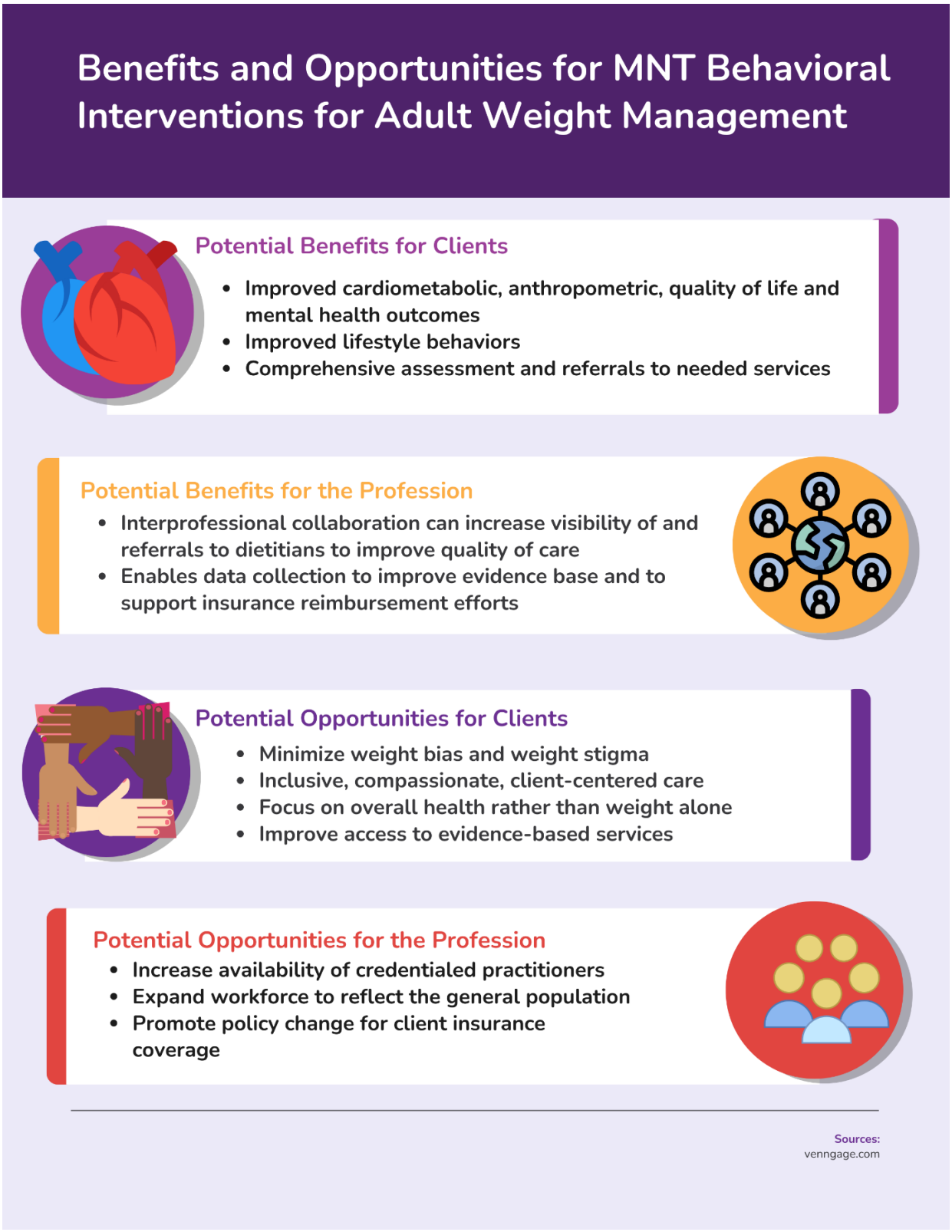

Figure 1. Benefits and Opportunities for MNT Behavioral Interventions for Adult Weight Management

Benefits of Providing MNT Behavioral Interventions for Adults with Overweight or Obesity

Potential Benefits for Clients

The supporting systematic review found evidence of improved anthropometric outcomes from MNT behavioral interventions for adult overweight or obesity,[7] but there are additional direct health benefits that may occur from this type of intervention. MNT interventions can have a positive effect on diet quality and physical activity, if physical activity is part of the behavioral intervention, both of which are critical factors in reducing risk of chronic diseases.[15] For example, the intensive lifestyle intervention provided in the Look AHEAD trial (a multi-site trial with over 5,000 participants), which was provided by dietitians and other health professionals, was a behavioral intervention for adults with overweight or obesity that included dietary goals to reduce energy and fat intake, with an emphasis on adding fruit and vegetables to conventional meals.[16] One-year outcomes of the study indicated that participants receiving the intervention did consume a higher quality diet than participants who did not receive the diet intervention.[17] The Diabetes Prevention Program (a multi-site trial with over 3,000 participants) provided a similar intensive lifestyle intervention for adults with overweight and obesity, also provided by dietitians and other health professionals, that included a goal of 150 min/week of moderate-intensity physical activity in addition to a dietary intervention.[18] Over a 4-yr follow-up, physical activity was significantly greater in those participants receiving the intensive lifestyle intervention as compared to those who did not receive the intervention.[18]

As noted previously, in the supporting systematic review and other recent evidence, additional direct benefits of these behavioral interventions, delivered by dietitians and other health professionals, may include enhancements in physical health beyond anthropometric

outcomes.[7] These include improvements in blood pressure;[7] glycemic outcomes, particularly for those with prediabetes or type 2 diabetes mellitus;[7,18,19] and mobility in older adults.[20] These behavioral interventions may also improve mental health, including reductions in symptoms of depression and anxiety,[21-23] and improvements in self-esteem and body image.[22] Importantly, these types of interventions do not appear harmful for mental health. While concerns regarding increases in eating pathology or eating disorder risk are often raised with these interventions, evidence shows decreases in eating pathology and eating disorder risk.[24,25] Finally, as reported previously, these behavioral interventions also appear to enhance QoL, which is a client-centered outcome.[7,22]

Adult clients receiving MNT behavioral interventions for overweight or obesity may also indirectly benefit from components of the nutrition care process provided by the dietitian. The assessment that initiates the nutrition care process is comprehensive and can identify other health areas that may need to be addressed.[4] These areas may include mental health, physical impairment or limitations, and social determinants of health (e.g., food and nutrition insecurity), among others. When these other health areas are identified, appropriate referrals can enhance the health care clients have access to and receive. These referrals may include other nutrition professionals, such as nutrition and dietetics technicians, registered (NDTRs); other allied health professionals that provide care outside the scope of practice of the dietitian (i.e., psychologist, social worker; exercise physiologist, physical therapist); or to supplemental food programs or other social services (i.e., Supplemental Nutrition Assistance Program; Special Supplemental Nutrition Program for Women, Infants, and Children).

Practice Implication: *Dietitians can accurately inform adult clients about the potential benefits and components of MNT behavioral interventions so that clients can make an informed decision*

about their health care and ascertain if they want to participate in the intervention. For clients who do desire this treatment, MNT behavioral interventions may provide benefits and identify needs beyond weight management to improve overall health.

Potential Benefits to the Profession

Given the complexity of overweight and obesity, it is not uncommon for an interprofessional health care team to be involved in providing obesity care.[7] As the experts in MNT, dietitians can provide effective dietary-focused care to adults with overweight or obesity that supports attainment of their specific nutrition-related goals. Other health care providers (i.e. physicians, nurse practitioners, physical therapists, psychologists) may work directly with the dietitian in outpatient, community, or private practice settings and can observe the impact of client-centered nutrition care on improvement in health outcomes. Being part of this team helps increase the visibility of the dietitian as a valuable member of the interprofessional health care team. Moreover, dietitians can cultivate relationships with other health care providers and create a referral pipeline for individuals who would benefit from working with dietetics professionals.[4] Depending on the setting (and the complexity of the client's medical status), a role also exists for NDTRs to provide nutrition care, under the guidance of a dietitian.

Being engaged in MNT behavioral interventions for the treatment of adult overweight and obesity also provides an opportunity for dietitians to collect data to address the gaps in knowledge regarding best methods for delivering interventions.[4,7] Evidence is lacking on how to tailor interventions, both at the individual- and systems-levels, to meet the needs of those that experience disparities in overweight or obesity, such as adults of lower socioeconomic position,

adults from under-represented groups (groups that have limited representation in the evidence base), or adults with disabilities, among others.[4]

To help the dietetics field achieve health equity, where all individuals have a fair and just opportunity to attain their highest level of health,[26] collecting data on social risk factors, experience of care, comprehensive patient demographic data (i.e., race, ethnicity, language, gender identity, sex, sexual orientation, and disability status), as well as outcomes, is needed.[27] Given their training in assessment, and monitoring and evaluation, dietitians can play key roles in data collection of these important factors, which is currently recommended by Centers for Medicare & Medicaid Services (CMS).[27] Ideally, dietitians can lead healthcare organizations in meeting these recommendations from CMS. There is also an opportunity to leverage the combined data collection from dietitians across the country. Practicing dietitians can add their data to the Academy of Nutrition and Dietetics Health Informatics Infrastructure (ANDHII) portal,[28] or they can seek collaboration with nutrition researchers at local universities. Participation in data collection and research can be used to enhance the evidence base, enabling the field to better address health disparities in overweight or obesity prevalence seen in adults in the US.

Practice Implication: *Dietitians should utilize opportunities to collaborate with other health care providers to enhance the visibility of dietitians as leaders in health care. MNT requires the dietitian's expertise, which no other health care provider is able to provide for adults with obesity. Supporting data collection that will help enhance health equity is key in addressing health disparities and reimbursement for and access to MNT, and dietitians have opportunities and skills to collect nutrition-related data. This visibility can help dietitians move into leadership roles and enhance the overall standing of dietetics in health care.*

Concerns of Providing MNT Behavioral Interventions for Adults with Overweight or Obesity

Potential Concerns for Clients

Concerns have been raised that, due to weight bias, health care provided to adults with overweight or obesity will increase stigmatization, be shame-based, and/or solely focus on reducing weight.[29,30] To address these issues, it is recommended that when MNT behavioral interventions for overweight or obesity are provided, the intervention should be inclusive, compassionate, and client-centered.[4] For example, during the assessment process, information regarding all presenting problems should be obtained, rather than just focusing the assessment solely on overweight- or obesity-related information.[30] MNT should be client-centered, which may mean a client with overweight or obesity may not wish to discuss weight status or pursue treatments for overweight or obesity, and this decision should be respected without judgment.[24] Dietitians can support improvements in health through dietary changes that are not focused on achieving weight loss. When a client does choose to engage in MNT behavioral interventions for overweight or obesity, dietitians should support dietary changes that take into account a client's unique individual circumstances, which includes a client's culture, other medical history, current health status, disabilities, and social determinants of health.[4]

Furthermore, it is crucial that dietitians create an inclusive and welcoming environment for patients.[4] This includes utilizing client-preferred and/or person-first terminology when discussing weight.[4] For instance, while referring to someone "having obesity" may be appropriate person-first language, some clients find this term stigmatizing and would prefer to refer to "their weight." Others may prefer utilization of the term "fat." The physical environment should be accommodating for clients with disabilities and larger body sizes (i.e., including a

range of larger-size blood pressure cuffs, and scales with higher weight capacities and that accommodate wheelchairs).[4] Furthermore, recommendations and resources for clients should consider specific needs, such as providing tools to eat healthfully on a budget for adults who are under-resourced and tailoring education resources so that they are accessible to those with disabilities.

Obesity care may also be costly. Public and private insurance coverage remains a primary barrier to the treatment of overweight or obesity.[4,24] However, interventions provided by a dietitian may be less expensive than interventions provided by other health care providers.[4] At the federal level, efforts are ongoing to pass the Treat and Reduce Obesity Act, which calls for Medicare coverage of intensive behavioral therapy for obesity, and dietitians are listed as one of the eligible providers to deliver this therapy.[31] States can also make decisions related to inclusion of services that are covered by state Medicaid programs, and private insurance companies can do the same. To stay updated on the various legislative and regulatory efforts, Academy members can visit the Advocacy page on the EatRightPro.org website,[32] participate in affinity groups, and work with their state affiliate or dietetic practice group/member interest groups policy and advocacy team.

Finally, weight regain can occur following MNT behavioral interventions; thus it has been suggested that these interventions do not enhance long-term health.[33] However, even with weight regain following a behavioral intervention, reductions in cardiometabolic risk factors are found 5 years after intervention end, suggesting that these interventions do enhance long-term health.[33]

Practice Implication: *Potential concerns about providing overweight and obesity interventions highlight the importance of overcoming obesity bias when delivering health care and actively*

fighting weight stigma. Practitioners can take an active role in addressing their own potential weight biases by engaging in self-reflection, using supportive communication and language with clients, and focusing care on overall health.[24,30] To address costs of obesity care, dietitians should work collaboratively with appropriate government agencies, medical and scientific organizations, employer organizations, unions, educational authorities, and the media to promote improvement in obesity care coverage.

Potential Concerns to the Profession

Dietitians providing obesity care need to attain proficiency in a wide range of competencies to appropriately meet the needs of their clients.[34] Dietitians achieving these competencies increase the likelihood that the previously described benefits of treatment will occur, while also decreasing the likelihood that the concerns around obesity care, particularly in regards to weight bias and stigmatization, will transpire.[34] The dietetics field should consider the importance of educational and professional development initiatives designed to provide these competencies so that the field is ready to effectively meet the needs of the US population. The interdisciplinary Certified Specialist in Obesity and Weight Management (CSOWM) credential by Commission on Dietetic Registration (the credentialing agency for the Academy of Nutrition and Dietetics) is one example of addressing this need.[35]

Given that health disparity in overweight and obesity is found in many under-represented groups, it is believed that providing culturally appropriate care is needed to reduce this disparity.[36] Many trainings have been developed to achieve cultural competence. However, concerns have been raised that this type of training presents the risk of stereotyping, and may foster implicit bias.[37] To address these risks, training dietitians in cultural competency and

emphasizing that they practice cultural humility with clients is needed, where care is based on self-reflexivity, openness to shared power with clients, and the ability to learn from one's clients.[37]

Given the disparity in the prevalence of overweight and obesity that several under-represented populations experience,[2] a workforce that can provide obesity care but lacks diversity in representation may reduce patient satisfaction with and access to care.[38] Given that the demographics of the dietetics profession is fairly homogenous concerning race/ethnicity and socioeconomic position,[39] changes in the workforce may be important to reduce this disparity. The Academy has developed the Inclusion, Diversity, Equity and Access (IDEA) Action Plan to help address this issue.[40] The goals and strategies outlined in this plan were developed from member feedback, as well as from benchmarking with other healthcare organizations. Goal 2 of this plan specifically targets this issue, and highlights the need for recruitment, retention, and education and leadership training in the field of dietetics for under-represented groups.[40] Diversification of the nutrition and dietetics workforce was also emphasized in 2021 Academy of Nutrition and Dietetics Strategic Plan.[41]

Practice Implication: *Potential concerns about ability to meet the demand for overweight and obesity management interventions highlight the need for increased capacity of higher education institutions with dietetic programs and professional development opportunities for the dietetics field to include these competencies within their curriculum/training. There may be misinformation about the nature of MNT behavioral interventions for adults with overweight or obesity, and reducing this misinformation with appropriate training is important to increase access to obesity care, which is needed to achieve health equity.[24] Additionally, to address disparity, trainings in cultural competency and emphasizing cultural humility should be*

considered.[37] All dietetic professionals should identify strategies to implement IDEA's action plan and support evaluation of progress towards IDEA's goals by encouraging dietetic professionals to self-report race, ethnicity, and gender to the Academy and/or the Commission on Dietetic Registration (CDR).[42]

Summary

Current evidence supports the role of MNT behavioral interventions for adults with overweight or obesity as an effective treatment option, when appropriate and desired by the client, to improve cardiometabolic, quality of life, and anthropometric outcomes. Dietitians need to accurately identify the benefits of this intervention so that clients can make informed decisions about their health care. When delivering this care, dietitians should highlight to other healthcare professionals their ability to be a lead team member in delivery of the care and data collection related to the care. To reduce weight bias and stigmatization, dietitians should use a client-centered approach, and utilize person-first, compassionate, and non-stigmatizing language when providing obesity care. Finally, ensuring access to MNT behavioral interventions is key in increasing health equity and reducing health disparities in overweight and obesity, and this requires an inclusive dietetics workforce that is trained in the competencies needed to deliver effective obesity care.

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409 Supplemental Table 1. Executive Summary of Recommendations for RDNs[a] or International

410 Equivalents Providing Overweight and Obesity Interventions for Adults with Overweight and

411 Obesity[4,6]

Recommendation Statement	**Rating[b]**
1.0 MNT Approach for Adult Overweight and Obesity Management	
1.1 It is reasonable for RDNs or international equivalents to utilize the NCP[c] to provide effective, client-centered interventions based on shared decision-making and clinical judgement and individualized to each client's needs, circumstances, and goals.	Consensus
1.2 MNT[d] provided by RDNs or international equivalents is recommended for adults with overweight or obesity to improve cardiometabolic outcomes, QoL[e], and weight outcomes, as appropriate for and desired by each client.	1B
1.3 RDNs or international equivalents should collaborate with an interprofessional healthcare team to provide comprehensive, multi-component care for adults with overweight or obesity, as appropriate for and desired by each client.	1C

1.4 It is reasonable for RDNs or international equivalents to monitor and evaluate client outcomes and adapt goals and interventions, including those for weight maintenance, and provide resources as needed for each client.	Consensus
1.5 It is reasonable for RDNs or international equivalents to minimize the effects of weight bias and weight stigma and its consequences by targeting client-centered goals, individualizing interventions according to complex contributors of overweight and obesity, communicating using client-preferred terms, and providing an inclusive physical environment.	Consensus
2.0 Delivering MNT Interventions	
2.1 RDNs or international equivalents may provide at least five interactive sessions, when feasible and desired by each adult client with overweight or obesity, to achieve the greatest potential improvement in outcomes. Frequency of contacts should be tailored to each client's preferences and needs.	2C
2.2 RDNs or international equivalents should provide overweight and obesity management interventions for a duration of at least one year to improve and optimize cardiometabolic and weight outcomes, as appropriate for and desired by each client.	1C

2.3 Following completion of overweight and obesity management interventions, RDNs or international equivalents should provide follow-up contacts at least every three months, for as long as desired by each client, to facilitate maintenance of weight loss and improved cardiometabolic outcomes.	1C
2.4 RDNs or international equivalents may use telehealth, in-person contacts, or a blend of these delivery methods when providing MNT interventions to adults with overweight or obesity. Outcomes may be optimized by including in-person contacts.	2C
2.5 RDNs or international equivalents may use both individual and group delivery methods when providing MNT interventions to adults with overweight or obesity, as feasible and appropriate for each client.	2C
2.6 RDNs or international equivalents providing MNT interventions for adults with overweight and obesity should coordinate care in a variety of settings, including primary care/outpatient, community and workplace settings, to access	1B

and support each client with resources in the environment that best suits individualized needs.	
2.7 It is reasonable and necessary for RDNs or international equivalents to be aware of and utilize existing channels of payment for services for adults with overweight or obesity to improve client access to care.	Consensus
3.0 Dietary and Lifestyle Intervention Approaches	
3.1 RDNs or international equivalents should advise adult clients with overweight or obesity that many different dietary patterns can be individualized to support client-centered goals. Prescribed dietary approaches should achieve and maintain nutrient adequacy and be realistic for client adherence. Prescribed calorie levels should be tailored based on estimated or measured needs and should be adjusted to improve weight outcomes, as appropriate for and desired by each client.	1C
3.2 RDNs or international equivalents should advise the following components as part of a comprehensive adult overweight and obesity management intervention to improve cardiometabolic outcomes, QoL, and weight outcomes, as appropriate for and desired by each client:	1C

• Nutritionally adequate diet with adjusted calories to improve weight outcomes or a nutritionally adequate, energy-balanced diet for weight maintenance; • Behavioral strategies, including self-monitoring (diet, physical activity, weight); • Appropriate physical activity to meet client goals (within the RDN's scope of practice or referral to an exercise practitioner).	
4.0 Special Populations	
4.1 RDNs or international equivalents should collaborate with clients and healthcare teams to manage co-morbidities such as T2DM[f], CVD[g], dyslipidemia and other potential complications associated with overweight or obesity by tailoring MNT to each client's specific health care needs, including medications, while supporting weight loss.	1B
4.2 Adults with obesity who receive pharmacotherapy or metabolic and bariatric surgery should collaborate with RDNs or international equivalents, as part of an interprofessional healthcare team, to improve and maintain a healthy diet that meets nutritional needs and advances weight loss efforts to improve cardiometabolic outcomes.	1B
	1C

4.3 For adults who are members of groups disproportionately affected by overweight or obesity, or under-resourced communities (e.g., adults with low socioeconomic status, adults from racial or ethnic minority groups, older adults, adults with disabilities), RDNs or international equivalents should provide culturally appropriate interventions that are tailored to each client's values, beliefs and barriers regarding excess weight, and food and physical activity behaviors.	

[a]RDNs, registered dietitian nutritionists

[b]Recommendations are rated according to the GRADE method. Recommendations are rated as Strong (1), Weak (2) or Consensus. Letters indicate certainty of supporting evidence and ranges from High (A) to Very Low (D).

[c]NCP, nutrition care process

[d]MNT, medical nutrition therapy

[e]QoL, quality of life

[f]T2DM, type 2 diabetes mellitus

[g]CVD, cardiovascular disease