Evidence Analysis Library
Adult Weight Management Systematic Review and Guideline (2022)

Relationship between Systematic Review PICO questions and AWM Recommendations

Relationships between Recommendation Statements and Evidence from the Supporting Systematic Review for the 2022 Academy of Nutrition and Dietetics Evidence-Based Practice Guideline of Overweight and Obesity Management Interventions Provided by an RDN[a] or International Equivalent[b]

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
MNT[d] Approach for Adults with Overweight or Obesity			
It is reasonable for RDNs or international equivalents to utilize the NCP[e] 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	RDN Standards and Scope of Practice, including for adult weight management.[1,2] Nutrition Care Process Model for People-Centered Care and Outcomes Management.[3]	Expert Opinion[f]
MNT provided by RDNs or international equivalents is recommended for adults with overweight or obesity to improve cardiometabolic outcomes, QoL[g], and weight outcomes, as appropriate for and desired by each client.	1B	In adults with overweight or obesity, weight management interventions provided by a dietitian reduced BMI[h] across a broad range of RCTs[i].[4-43] In adults with overweight or obesity, weight management interventions provided by a dietitian resulted in significantly greater percent weight loss compared to controls across a broad range of RCTs.[4,7,8,10,13,14,19,21,22,28-31,33,39,41,43-54] In adults with overweight or obesity, weight management interventions provided by a dietitian resulted in significantly greater percent weight loss and a likelihood of achieving 5%	MODERATE HIGH MODERATE

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		weight loss compared to controls across a broad range of RCTs.[9,12,16,20,21,24,25,30,33,36,38,43,45,47,50,55-58] In adults with overweight or obesity, weight management interventions provided by a dietitian reduced WC[j] across a broad range of RCTs.[4-8,10,12,13,15,19,20,22,24,25,27,28,31,33-36,38-43,45,49,55,56,58-62] In adults with overweight or obesity, interventions provided by a dietitian reduced BP[k] across a broad range of RCTs.[4-8,10,12,13,20,22,23,28,30,32-34,36-38,43,45,49,53,56,57,59,61] In adults with overweight or obesity, evidence suggests that weight management interventions provided by a dietitian may increase quality of QoL.[16,32,36,57,62-65]	HIGH MODERATE for SBP[l], LOW for DBP[m] MODERATE for mental QoL, LOW for physical QoL
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	RDN Standards and Scope of Practice, including for adult weight management.[1,2] Nutrition Care Process Model for People-Centered Care and Outcomes Management.[3] Intervention efficacy was no longer significant for BMI, percent weight loss and BP at 3 months after the intervention.[66]	Expert Opinion[f] LOW[o] Ungraded[p]

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
		Without extended care interventions during the follow-up period after weight loss interventions, weight lost during interventions is typically regained.[68]	
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	Experiencing weight stigma is associated with diabetes risk, depression, anxiety, self-esteem and C-reactive protein levels, among other outcomes.[69,70] Health care professionals, including dietitians, report both implicit and explicit weight-biased attitudes toward people with obesity.[71,72] Clients' engagement with health services can be negatively impacted when clients perceive weight bias from health care professionals.[73] Communicating About Weight in Dietetics Practice: Recommendations for Reduction of Weight Bias and Stigma[74]	Ungraded[p] VERY LOW Ungraded[p] Expert Opinion[f]
Coordination of Care			
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	Sub-group analysis of supporting systematic review: Effect sizes were similar for anthropometric outcomes whether interventions were delivered by a dietitian alone or by an interprofessional team. For SBP and FBG[n], effect sizes were greater with interventions from a dietitian alone, but heterogeneity was high. There was considerable overlap in confidence intervals for effect sizes between intervention types.[66,67]	LOW[o]

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
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 and support each client with resources in the environment that best suits individualized needs.	1B	In adults with overweight or obesity, weight management interventions provided by a dietitian in a primary care/outpatient setting may reduce BMI[4,7,8,10,12,15,16,18,20,21,23,27,29,31-34] and increase percent weight loss.[4,7,8,10,21,29,31,33,47,48]	LOW
		In adults with overweight or obesity, weight management interventions provided by a dietitian in a primary care/outpatient setting likely increase likelihood of achieving 5% weight loss.[4,20,21,29,31,33,47]	MODERATE
		In adults with overweight or obesity, weight management interventions provided by a dietitian in a primary care/outpatient setting reduce WC.[4,7,8,10,12,15,20,27,31,33,34,58,59,62]	HIGH
		In adults with overweight or obesity, weight management interventions provided by a dietitian in the community setting are likely to reduce BMI[6,24] and slightly increase percent weight loss.[24,45,56,57]	MODERATE
		In adults with overweight or obesity, weight management interventions provided by a dietitian in the community setting may reduce WC.[6,24,45,56,61]	LOW
		In adults with overweight or obesity, weight management interventions provided by a dietitian in a workplace setting may reduce BMI[37,43] and likely results in increased percent weight loss.[43]	LOW

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
		In adults with overweight or obesity, weight management interventions provided by a dietitian in a workplace setting likely result in increased the likelihood of achieving 5% weight loss[38,43,55] and reduced WC.[38,43,55]	MODERATE
MNT Amount			
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	Sub-group analysis of supporting systematic review: Interventions with ≤4 contacts did not result in significantly improved SBP or FBG. All outcomes examined were significantly improved, compared to controls, in interventions with at ≥5 contacts. However, for all outcomes, the magnitude of difference between intervention types may not be clinically or statistically significant. For all outcomes, there was overlap in confidence intervals between interventions with ≤4 contacts and ≥5 contacts. There were no clear dose-response patterns between frequency of contact with the dietitian and outcomes, except for FBG, for which greater frequency aligned with a greater effect size.[66,67]	LOW[o]
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	Sub-group analysis of supporting systematic review: Studies that were at least 12 months in duration resulted in a significant improvement for all outcomes examined, while studies less than 12 months did not result in significant improvement in SBP and FBG compared to controls. However, heterogeneity was high and confidence intervals overlapped, preventing definitive conclusions. Studies that were less than one year still impacted anthropometric outcomes.[66,67]	LOW[o]

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
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	Intervention efficacy was no longer significant for BMI, percent weight loss and BP at 3 months after the intervention.[66] Without extended care interventions during the follow-up period after weight loss interventions, weight lost during interventions is typically regained.[68]	LOW[o] Ungraded[p]
Delivery of MNT			
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	Sub-group analysis of supporting systematic review: For anthropometric outcomes and FBG, influence of in-person interventions and hybrid in-person/remote interventions were similar. For the outcome of SBP, in-person interventions resulted in significant improvement, while the effect of remote or hybrid interventions was not significantly different than the control group. Confidence intervals overlapped for all categories except for when comparing in-person to remote for the outcomes of BMI and SBP. Even interventions delivered exclusively remotely resulted in significantly reduced BMI, percent weight loss and WC compared to controls, and heterogeneity of results was high.[66,67]	LOW[o]
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	Sub-group analysis of supporting systematic review: Only interventions that included both individual and group contacts resulted in significant improvement in anthropometric outcomes, SBP and FBG. However, confidence intervals overlapped for different intervention types for all outcomes. It is important to note that even interventions delivered exclusively individually or in groups resulted in significantly	LOW[o]

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
		reduced BMI, percent weight loss and WC compared to controls, and heterogeneity of results was high.[66,67]	
Payment for Services			
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	MNT provided by an RDN resulted in improved cardiometabolic outcomes and decreased body weight outcomes (see evidence for 1.2 above).[66,67] Weight management interventions provided by a dietitian may be a cost-effective for adults with overweight or obesity.[63,75]	LOW-HIGH depending on outcome (see 1.2 above) LOW
Dietary and Lifestyle Intervention Approaches			
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	Intervention details, including prescribed dietary intake, were extracted for each study included in the supporting systematic review.[66,67] Dietary advice was described in 74% of included studies. Dietary intake was often individualized. Many different prescribed dietary patterns and macronutrient distributions, in tandem with calorie restriction, resulted in desired outcomes. Few studies reduced calories below 1200-1500 calories/day to maintain nutrient adequacy. Weight management interventions provided by dietitians resulted in meeting intervention goals, but there was heterogeneity between studies.	LOW
RDNs or international equivalents should advise the following components as part of a comprehensive adult overweight and obesity management intervention to improve	1C	Intervention details were extracted for each study included in the supporting systematic review, including prescribed dietary intake and if the intervention included behavior modifying	LOW[o]

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
cardiometabolic outcomes, QoL, and weight outcomes, as appropriate for and desired by each client: • 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).		therapy and physical activity.[66,67] Many different prescribed dietary patterns and macronutrient distributions resulted in desired outcomes and calorie restriction was advised in most studies, because target outcomes were typically weight loss. Most interventions encouraged physical activity or made it a prescribed component. Most successful interventions included behavior modifying strategies such as menu planning, self-monitoring of weight, diet or physical activity, and trouble-shooting barriers to adherence. Determinants of successful weight maintenance include physical activity, self-monitoring of diet, weight, and physical activity, eating behaviors such as portion control, increasing fruit and vegetable intake and reducing sugar-sweetened beverages.[76]	MODERATE-HIGH
Special Populations			
RDNs or international equivalents should collaborate with clients and healthcare teams to manage co-morbidities such as T2DM, CVD, 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	In adults with overweight or obesity and T2DM, weight management interventions provided by a dietitian may result in a significant reduction in BMI.[8,18,29] In adults with overweight or obesity and T2DM, weight management interventions provided by a dietitian may increase weight loss percentage.[8,25,49] In adults with overweight or obesity and T2DM, weight management interventions provided by a dietitian are likely to reduce WC and FBG.[8,29,49]	LOW VERY LOW MODERATE LOW

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
		In adults with overweight or obesity and CVD, weight management interventions provided by a dietitian are likely to reduce BMI.[10,12]	MODERATE
		In adults with overweight or obesity and CVD, weight management interventions provided by a dietitian increased percent weight loss, increased the likelihood of achieving 5% weight loss and reduced WC.[10,12,59]	LOW
		In adults with dyslipidemia, medical nutrition therapy improved lipid profile.[77-79]	MODERATE
		In adults with overweight or obesity and dyslipidemia, weight management interventions provided by a dietitian are likely to reduce BMI.[12,23]	LOW
		In adults with overweight or obesity and dyslipidemia, weight management interventions provided by a dietitian increased the likelihood of achieving 5% weight loss and reduce WC.[12,58]	LOW
		In adults with obesity, weight management interventions provided by a dietitian may reduce BMI.[5,6,9,10,12,17,19,21,23,25,28-30,32,40,80]	MODERATE
		In adults with obesity, weight management interventions from a dietitian likely reduced percent weight loss.[10,21,28-30,44-46,48,51,53,54]	HIGH
		In adults with obesity, weight management interventions from a dietitian resulted in higher likelihood of achieving 5% weight loss and reduced WC.[5,6,10,12,19,21,25,28,30,40,45,58,62]	LOW

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
		In adults with obesity, weight management interventions provided by a dietitian may increase physical QoL.[32,54,62,65] In adults with obesity, weight management interventions provided by a dietitian likely increased mental QoL. [32,54,62,65]	MODERATE
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	From Bariatric Surgery systematic review: "MNT from a registered dietitian nutritionist (RDN) for two to six visits during the first year post-surgery had a significant excess weight loss ranging from 60% to 80% and significant reduction in body mass index (BMI) ranging from 5% to 31% at 12 months".[81]	MODERATE
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.	1C	One non-randomized, controlled trial was included in the supporting systematic review that examined a culturally enhanced EatRight dietary intervention in a predominantly African American workplace; the evidence was uncertain in adults with overweight or obesity for the effect of weight management interventions provided by a RDN on BMI, WC, FBG and BP.[82] In adults with overweight or obesity and low SES, weight management interventions provided by a dietitian may result in little to no difference in BMI or WC, and the effect on FBG, percent weight loss, QoL and BP is unclear.[35,61,83,84]	VERY LOW LOW VERY LOW

Recommendation	Rating	Evidence from Supporting Systematic Review or Other Sources	Certainty of Evidence[c]
		In adults with overweight or obesity and physical disabilities, one RCT described no effect of a weight management intervention provided by a dietitian on adverse events.[85]	MODERATE
		In postmenopausal women ≥50 years of age with overweight or obesity, weight management interventions provided by a dietitian likely improved BMI, percent weight loss and WC.[19,41,45,46,54]	LOW
		In adults ≥50 years of age with overweight or obesity, weight management interventions provided by dietitian likely reduced FBG and systolic BP slightly, but had no effect on diastolic BP.[45]	LOW
		In adults ≥50 years of age with overweight or obesity, weight management interventions provided by a dietitian may increase physical and mental QoL.[54,64,65]	

[a]RDN, registered dietitian/nutritionist

[b]In this guideline and in the supporting systematic review, "registered dietitian/nutritionists and international equivalents" are referred to as "dietitians" except for in the recommendation statements themselves, in which "RDNs or international equivalents" is used. In this guideline, these terms are equivalent.

[c]Evidence grading was derived from summary of findings tables unless otherwise indicated.

[d]MNT, medical nutrition therapy

[e]NCP, nutrition care process

[f]Expert opinion was based on clinical expertise and standards of practice for the registered dietitian nutritionists

[g]QoL, quality of life

[h]BMI, body mass index

[i]RCT, randomized controlled trial

[j]WC, waist circumference

[k]BP, blood pressure

[l]SBP, systolic blood pressure

[m]DBP, diastolic blood pressure

[n]FBG, fasting blood glucose

[o]Recommendations based on sub-group analyses of the supporting systematic review were graded according to definitions described by GRADE handbook for grading quality of evidence and strength of recommendations.[86]

[p]Ungraded evidence is based on external systematic review(s) for which evidence was not graded.

[r]T2DM, type 2 diabetes mellitus

[s]CVD, cardiovascular disease

[t]SES, socioeconomic status

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