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http://www.move.va.gov

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Screening for Overweight and Obesity

Introduction

The <u>VA National Center for Health Promotion and Disease Prevention (NCP)</u>, <u>Veterans Health Administration (VHA) Office of Patient Care Services</u> with input from the field, developed a <u>Weight Management Program for Veterans (MOVE!</u>[®]). The Program is based on the <u>NIH Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report (1998)¹ and the United States Preventive Services Task Force (USPSTF) <u>Screening and Interventions for Obesity in Adults: Summary of the Evidence for the US Preventive Services Task Force</u> (2003)² and <u>Screening for Obesity in Adults</u> (2003)³.</u>

The following resources provide guidance to VHA clinicians for implementation/maintenance of weight management programs:

- Handbook 1120.01 MOVE! Weight Management Program for Veterans (MOVE!)⁴
- Veterans Affairs (VA)/Department of Defense (DoD) Clinical Practice Guideline (CPG) for Screening and Management of Overweight and Obesity (2006)⁵

The MOVE!® Reference Manual addresses the full spectrum of weight management care/practice. The Manual consists of topic-specific chapters, but each topic should be considered in relation to others.

General Information

This chapter explores weight management screening. The VA/DoD Clinical Practice Guideline for Screening and Management of Overweight and Obesity provides the foundation for how this is conducted in VHA. Weight management program benefits and risks are also reviewed.

A population-based clinical approach to disease is one in which patients with a target condition are systematically identified and offered treatment. In order to justify screening, a target condition should meet the following criteria:

 The disease (or other health problem) must cause a substantial burden of suffering, must be relatively common, and its natural history must include a

- pre-symptomatic phase during which the disease can be detected by a screening test.
- Treatment for the disease must work better if initiated in the presymptomatic phase as opposed to the period after symptoms develop.
- An acceptable test must accurately detect the disease in the presymptomatic phase.
- Application of the test itself, or the work up of those with a positive test, must not cause more harm than the benefit from treating the disease early.

Screening for overweight and obesity meets these criteria. Overweight and obesity are increasingly common and have a high burden of suffering. Overweight and obesity can be identified and treated at an early stage, before a patient begins to develop symptoms that may hinder their weight loss efforts. Accurate, safe, and feasible screening tests are available to identify overweight and obesity at early stages. The benefits of early identification and treatment of overweight and obesity far outweigh the harms of screening.

Screening Methods for Overweight and Obesity

Based on a careful review of the available evidence, the USPSTF recommended Body Mass Index (BMI) as the best screening test for the identification of overweight/obesity^{2,3} (see Appendix 3-1). The National Institutes of Health (NIH) Guidelines also recommend the use of BMI.¹ Substitution of another tool or the requirement for additional measurement(s) may not enhance care and will likely increase staff burden. In this chapter, screening methods that are not recommended will be discussed first. Then, recommended approaches to weight screening will be presented.

Available Methods Not Recommended for Screening

"Obesity" is defined as an excess of body fat (adiposity). For women, the normal body fat range is 21-35 percent of mass; for men, this range is 8-24 percent. When body fat exceeds these ranges, a patient is said to have excess adiposity. The most technically accurate measures for body fat include total body water displacement, bioelectrical impedance, magnetic resonance imaging (MRI), neutron activation analysis, and dual-energy X-ray absorptiometry (including computed tomography [CT]), all of which are impractical for routine use in primary care. Some portable electronic devices for measuring body fat are available, but may not be as accurate or as reliable as some of the gold standards. Body fat measurement using skin fold calipers is generally inaccurate if not calculated as an average of measurements from at least three of the following sites: thigh, hip, upper arm, and sub-scapular. This method also requires that the patient disrobes and that measurements are taken by trained, well-practiced staff.

The measures discussed above are impractical, inaccurate, unreliable, or costly; thus, they are not recommended for general use.

Available Methods Recommended for Screening:

Body Mass Index (BMI)

BMI is a practical, reliable measure that is highly correlated with body fat percentage $(R^2 = 0.95 \text{ in men}, 0.98 \text{ in women}).^3$ Furthermore, it can be used in addition to weight to monitor progress within a treatment program. **BMI adjusts weight for height using the following formula:**

height: 5 feet, 7 inches = 1.70 m

BMI =
$$\frac{100 \text{ kg}}{(1.70 \text{ m})^2}$$
 = 34.5 kg/m²

To ensure accuracy, actual height and weight, without shoes, should be measured using appropriately calibrated scales. BMI can be calculated using the formula above or alternatively by using a BMI chart such as the one provided in Appendix 3-1. When height and weight are entered in the Vital Signs function of the Computerized Patient Record System (CPRS), BMI is automatically calculated and displayed on the CPRS cover page. Note that heights and weights documented in the Progress Note text, rather than Vital Signs, will not compute BMI and these data would not be available for evaluation.

Patients are classified with respect to BMI according to the following categories:

BMI	Classification
< 18.5	Underweight
18.5 - 24.9	Normal weight
25 - 29.9	Overweight
≥ 30	Obese

BMI thresholds are age-dependent and the above classifications apply to ages ≥ 18. Patients with BMI ≥ 30 can be further classified as follows:

BMI	Classification
30 - 34.9	Mildly obese (also called class I obesity)
35 - 39.9	Moderately obese (also called class II obesity)
≥ 40	Extremely obese (also called class III obesity)

Veterans with a BMI ≥ 30 are considered to screen "positive" for obesity, and if medically appropriate, should be offered weight management intervention. Veterans

with a BMI ≥ 25 and < 30 screen positive for overweight and require further evaluation. The Obesity CPG recommends intervention with overweight patients when weight-related disorders (diabetes mellitus, hypertension, dyslipidemia, degenerative joint disease, sleep apnea, or metabolic syndrome) are present.⁵

Patients will commonly ask why there are not gender-specific BMI criteria. The health risks increase at about the same BMI for both genders. Thus, gender-specific criteria for BMI are not needed. As discussed below, there are gender-specific criteria for abdominal girth.

In most cases, BMI accurately estimates total body fat, but one should remember that as a screening test, BMI has limitations. Since BMI cannot distinguish lean versus fat tissue, some individuals may have elevated BMI when, in fact, they do not have excess total body fat. Examples include professional athletes, body-builders, very large-framed individuals, or very short individuals. In these cases, BMI classification would label these individuals as overweight or obese when their total body fat percentages are in the normal range. These are considered "false positive" results.

With age, the ratio of fat mass to lean mass increases: older adults carry more fat for a given BMI than a younger person. Therefore, BMI classification may label some older adults as "normal weight" when in fact they have excess adiposity. These are considered "false negative" results. Table 3-1 illustrates the concept of "false negatives" and "false positives" when using BMI for screening.

Table 3-1.

Distribution of Patients Classified Using BMI Against a Gold
Standard Measure of Body Fat Percentage

	High Body Fat %	Normal Body Fat %
Elevated BMI	True Positive	False Positive
Normal BMI	False Negative	True Negative

BMI is not accurate for screening Veterans with amputations. It is possible to compute estimated BMI from an estimated total weight by accounting for the proportion of lost tissue. The most widely cited formula to estimate BMI following amputations was developed by L.K. Ostenkamp. The following are proportions of body weight lost for some types of amputation: all four limbs amputated -0.50, entire arm -0.05, forearm and hand -0.023, one hand -0.007, entire leg -0.16, lower leg and foot -0.059, one foot -0.015. To calculate estimated total weight, subtract the missing portion from 1.0, then divide the measured weight by the calculated value. For example, to compute estimated total weight for a Veteran who is 5 feet, 8 inches tall, weighs 180 pounds, and has a below-the-knee amputation of one leg, first subtract the proportion from 1.0 (1.0-0.059=0.941). To compute estimated total weight, take the measured weight

and divide it by 0.941 (180.0 lbs ÷ 0.941 = 191 lbs). The estimated BMI for this individual is 29.0, according to Appendix 3-1.

Alternative methods for assessing body fat may be considered for amputees or paraplegics. For patients who are unable to stand due to spinal cord injury (or other reason), a height can be measured while lying down. Alternatively, arm span can be used to approximate height. This method works best for patients of European descent, but it underestimates height in Asians and overestimates height in African-Americans. When a question about the accuracy of an individual's BMI classification arises, consider referral to a specialty provider (e.g., dietitian, endocrinologist) qualified to perform further diagnostic testing for adiposity.

Waist Circumference

BMI does not take body fat distribution into account. Whereas BMI approximates the amount of total body fat, abdominal girth approximates the amount of centrally deposited fat. Additional risk stratification can be determined during the physical examination by assessing the measure of abdominal girth or centrally deposited fat. Excess abdominal fat distribution carries a higher metabolic and cardiovascular risk than peripherally deposited fat.

Waist circumference is a measurement that can assess abdominal girth and provides an independent prediction of risk over and above that given by BMI alone. Waist circumference is the measure around the abdomen at the level of the iliac crest (see Appendix 3-2). Patients who are obese or are overweight with weight-related conditions may be referred to MOVE![®] based on BMI and do not require additional abdominal girth assessment. Measurement of waist circumference is most useful in identifying higher-risk patients with excess abdominal adiposity who are of normal weight (BMI < 25) or overweight (BMI 25 - 29.9).²

For patients with a BMI < 30, waist circumference can be used to:

- Identify patients at higher risk who may benefit from more intensive weight management efforts and/or clinical management of co-morbid conditions; or
- Monitor progress in a weight management program. Decreases in waist circumference, even in the absence of changes in weight or BMI, indicate progress.

Epidemiologic studies suggest that the predictive power of waist circumference varies by race (particularly in men), and is less predictive in African-American populations. The Patient Assessment and Medical Evaluation chapter of this manual discusses the measurement of waist circumference in further detail.²

Abdominal girth is more difficult to measure than height and weight and requires patients to disrobe. Although recommended, waist circumference assessment has not come into common use in primary care settings. Presently, VA Performance Measures primarily rely upon BMI in screening for obesity.

VA Clinical Practice Guidelines for Recommendations for Offering Patients Weight Management Care⁷

The VA/DoD Clinical Practice Guideline for the Management of Overweight and Obesity recommends that the following individuals should be offered weight management:

- Patients with BMI > 30
- Patients with a BMI between 25 and 29.9 who have one of the following weightrelated disorders: diabetes mellitus, hypertension, dyslipidemia, degenerative joint disease, sleep apnea, or metabolic syndrome
- Patients with an increased waist circumference (> 35 inches for women, > 40 inches for men) independent of BMI

Note that the VA/DoD clinical practice guidelines are updated as needed. Refer to the Web site (http://www.healthquality.va.gov/) for the most current recommendations.

Screening Interval

Current VA/DoD Obesity Guidelines recommend annual obesity screening. Few studies have assessed the impact of different intervals for obesity screening. The NIH Guidelines suggest 2 years as an appropriate screening interval. While this interval is not evidence-based, it represents a reasonable balance between early weight gain recognition and the burden of repeated measurements. The USPSTF recommendations do not address screening intervals. In general, when there is inconclusive evidence regarding screening, the VA/DoD Evidenced-based Practice Workgroup tends to lean towards a higher level of surveillance. Thus, the VA/DoD Obesity Guidelines (and the primary guideline for VA/DoD health care) recommend that all patients should receive annual weight monitoring. In all patients, even those not identified as overweight or obese, an annual discussion of the importance of maintaining a healthy weight by eating wisely, being physically active, and monitoring weight is recommended by the CPG. 5

Furthermore, the Obesity CPG recommends to providers that patients identified as obese or overweight with weight-related disease should receive a medical evaluation. The Obesity CPG recommends screening for diabetes, hyperlipidemia, and non-alcoholic fatty liver disease. Finally, patients who are identified as at-risk should be offered weight management care.⁵

Screening Process

The screening process is depicted in Appendix 3-3 (Patient Flow Through MOVE!®):

- Screening
- Multi-factorial Assessment, Goal Setting, and Option of Care
- Self-Management and Additional Treatment Options

Maintenance

The process is described below. The arrows (\rightarrow) indicate an action step to be taken by staff, unless specified for the Veteran. Although there is no national clinical reminder for weight screening, most facilities utilize a locally developed or shared clinical reminder.

The typical clinical reminder prompts the annual assessment of BMI.

- → The clinician measures height and weight, enters this in the Vital Signs section of CPRS, and the BMI is calculated in CPRS.
 - BMI greater than or equal to 25 with a weight-related disorder or BMI greater than or equal to 30 indicates possible weight-related health risk.
- → Using a motivational interviewing approach, the clinician should ask for permission to talk about weight management, explore motivation and interest in making healthy lifestyle change(s), and offer participation in MOVE![®]. This discussion should result in the selection of one of two choices:
 - Veteran is ready to work on weight invite Veteran to complete the MOVE!23
 Patient Questionnaire.
 - Veteran is not ready very few individuals want to carry excess weight and the associated health risks. Readiness is often a function of importance and confidence. Although most individuals see weight loss as important, it may be less important than immediate life demands. Because most overweight individuals have tried to lose weight on their own with limited success, patients often lack confidence in the effectiveness of a weight management program. Thus, while the patient may not be ready for MOVE![®] now, the clinician should address confidence issues and assist the Veteran in identifying a future time when they will be able to commit to work on their weight. At the very least, this discussion should occur annually.
- → After reviewing the MOVE!23 Patient Report with the Veteran, the clinician should assist him/her in establishing weight loss goals (total weight loss and weekly weight loss) and one to three weekly goals for lifestyle change (e.g., cutting out sweetened drinks, increasing steps per day, decreasing trips to fast food restaurants).
- → The clinician should then discuss MOVE!® follow-up options (e.g., TeleMOVE!, MOVE!® groups).
- → The clinician documents in CPRS:
 - Veteran's weight and height in the Vital Signs section
 - Weekly and total weight loss goals
 - Current plans for lifestyle change to support weight loss
 - Patient's selection for follow-up

Determination of Benefit of Weight Management Treatment

Appendix 3-4 presents the MOVE![®] Benefit Chart (Determination of Benefit from Weight Management Services), a tool that can help staff decide whether or not to offer MOVE![®] to individual patients with overweight/obesity.

Who Will Benefit Most (Offer MOVE!®)

The evidence shows that certain patients will benefit from weight loss more than others. Those who benefit the most include younger patients, patients with higher BMIs (≥ 30), and patients with obesity-associated conditions.

Overweight is clearly a precursor to obesity, but the evidence is insufficient with regard to the benefits of counseling-based interventions in overweight patients (BMI 25 - 29.9) without obesity-related conditions.

Overweight/obesity may not impact health in older adults (≥ age 70) as much as in younger adults, but age alone should not preclude full MOVE! participation for interested patients. Adults ≥ 70 years old will generally require medical clearance prior to beginning new programs of physical activity. Furthermore, older adults are at higher risk of nutritional deficiencies, so dietary changes should be closely supervised. Increasing physical activity, at any age, is often beneficial to overall health. For patients over the age of 70, interventions should primarily focus on enhancing physical activity, including enhancing balance, flexibility, and strength training in addition to building metabolic capacity.

Because resources may be limited and not everyone will benefit equally from weight management, focusing resources on the patients at highest risk who are most likely to benefit is one strategy to allocate limited resources. Some facilities may choose to limit enrollment to patients with BMI > 30 or to patients with obesity-associated conditions.

Once a patient has received risk counseling and is not interested, offer support and advise to consider treatment options when ready to work on weight.

Potential Benefit (Offer MOVE!® - Optional)

MOVE![®] is for overweight and obese Veterans and participation should not be routinely offered to Veterans with a BMI < 25. Exceptions can be made, for example, for Veterans with a prior history of overweight/obesity who've successfully lost weight and want assistance with maintenance or Veterans with significant recent weight gain even if BMI is < 25.

Participants with a BMI 25 - 29.9 without co-morbid conditions are advised to consider treatment, if medically appropriate. If a patient has received risk counseling and is not interested, offer support and advise them to consider treatment options when ready to work on weight. Those over age 70 require medical evaluation prior to beginning new physical activity and need closer nutritional supervision to minimize protein, vitamin, and mineral deficiencies. Goals of treatment in the elderly should focus on improvement or preservation of functional status.

Small, Absent, or Negative Net Benefit (Do Not Offer MOVE!®)

MOVE![®] should not be offered to Veterans when the benefit from weight loss is likely to be small, absent, or negative relative to other current conditions. Not everyone with a BMI ≥ 25 will benefit from weight loss and some may even be harmed.

Veterans with the following medical diagnosis most likely would not benefit from weight management services; however, each participant may be offered the choice and the individualized plan should reflect the goals set by the participant:

- Active cancer other than non-melanoma skin cancer
- End-stage Chronic Obstructive Pulmonary Disease (COPD)
- Congestive heart failure
- End-stage neurologic disorders (e.g., Parkinson's Disease, Amyotrophic lateral sclerosis (ALS), Multiple Sclerosis (MS))
- End-stage renal disease
- Moderate to severe cognitive impairment (dementia) that would prevent the participant from being able to benefit from self-management of weight
- Acute psychosis that would prevent the participant from being able to benefit from self-management of weight
- Acute substance abuse that would prevent the participant from being able to benefit from self-management of weight
- Acute Acquired Immune Deficiency Syndrome (AIDS)-related complex
- Anorexia

Many of these conditions present competing demands for the Veteran and the health care staff who care for them. Others prevent full active participation by the Veteran, which is a requirement for successful weight management. Some of these conditions

are associated with poor life expectancies and the Veteran is unlikely to realize any health benefit from a moderate weight loss.

Clinicians may offer each Veteran a choice and the individualized plan should reflect the goals set by the Veteran. For these groups, it is reasonable to focus on maintaining current weight or stopping weight gain and encouraging Veterans to continue a healthy lifestyle. The clinician may also refer Veterans to the Nine Healthy Living Messages.

Offer MOVE!® to Those Who Would Benefit and Who Are Interested

The final step in the screening process is to offer MOVE![®] to those would benefit and who are interested. After advising Veterans of the health risks, assess their interest in losing weight. When discussing weight and offering enrollment, individualize your message to the Veteran.

Below is a sample dialogue:

Clinician: (With BMI chart in hand and pointing to the patient's index) "According to the body mass index chart, you are carrying excess weight that places your health at risk. Would it be ok if we talked about that?...I'll bet you have had some concerns about your weight?"

Veteran: "Yes, I have trouble breathing sometimes when walking upstairs."

Clinician: "Are you interested in losing some weight?"

Veteran: "Well, I have been thinking about it."

Clinician: "We have a weight management program called MOVE![®]. Would you like to know more about it?"

Veteran: "Yes, my wife has been after me for a while to lose weight. Can she participate, too?"

Clinician: "Yes, your wife will be a great help to you and she is welcome to come with you. MOVE!® focuses on small changes in your diet and physical activity to help you lose weight at a slow steady rate. It's nothing drastic, just sensible, healthy things. We can work with you along the way to help you set goals and will follow-up frequently to see how you are doing. Does this sound like a program you might be interested in?"

Veteran: "Sign me up – I'm ready!"

Clinician: "Great! We have found that working with a MOVE![®] coach frequently, at least eight times over the next several months, is a key to success. If you do only

one or two MOVE!® visits, it may not produce results. We can talk about options for working together to reach your goals."

For additional examples on how to interact with Veterans, refer to the Facilitating Healthy Behavior chapter.

This chapter was reviewed and edited by the following VA clinical staff:

Michael Bonner, M.D., VISN 12, Westchester, IL.
Helen Brinkman, RRT, MS, VAMC Biloxi, Biloxi, MS.
Sarah Catanese, PhD, Jesse Brown VAMC, Chicago, IL
Norma Figueroa, R.N., James A. Haley VAMC, Tampa, FL.
Patricia Mossop, M.D., James A. Haley VAMC, Tampa, FL.
Jenny O'Donohue, M.S., A.R.N.P., A.C.N.P.-B.C., Jesse Brown VAMC, Chicago, IL

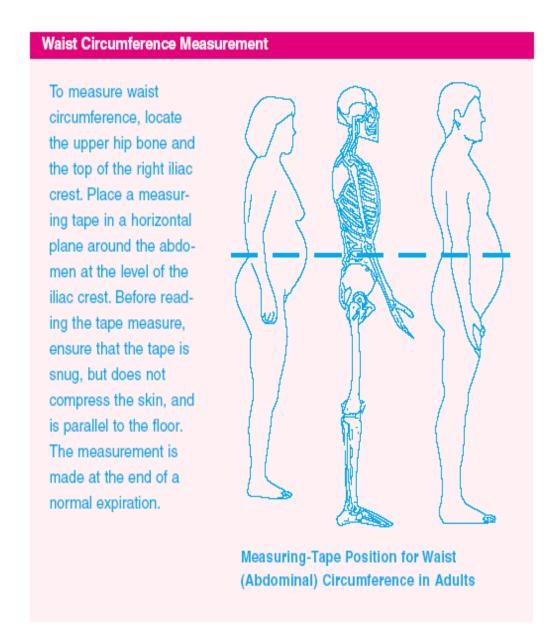
3 Appendix

Appendix 3-1

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	26	27	28	28	29	30	30	31	32	33	34	35	36	37	38	68	40		43	44	46	47	49	51	52	54	_				50 2
Obesity BMI = 30 to 39.9	27	28	29	29	30	31	32	33	33	34	35	36	37	38	40	41	42	43	45	46	48	49	51	53	54	56	58	61	63	65	60 2
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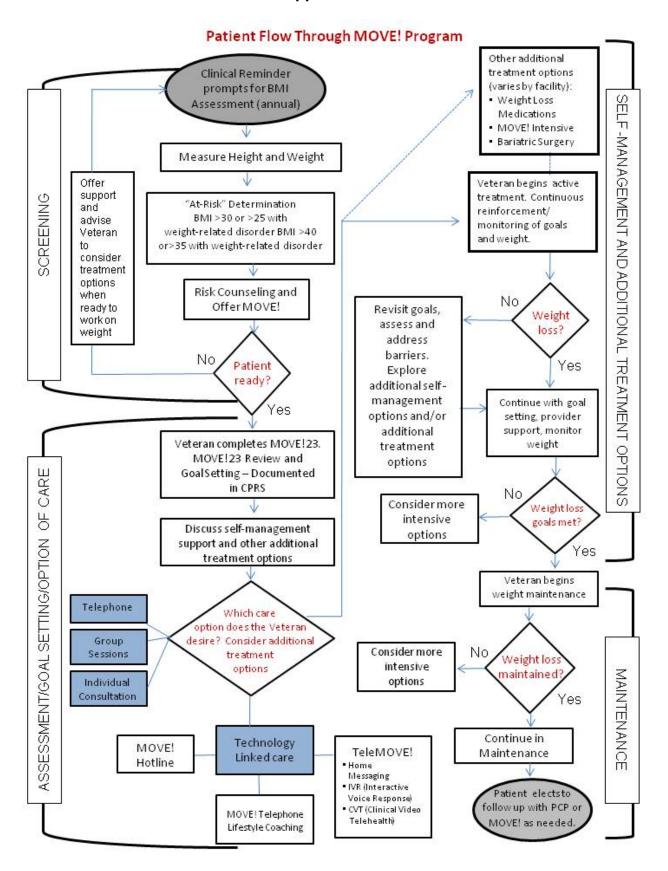
Appendix 3-2

Waist Circumference Measurement



Reproduced from the NIH Practical Guide (2000)¹

Appendix 3-3



Appendix 3-4

MOVE Benefits Chart- Determination of Benefit from Weight Management Services

Screening Criteria	Offer MOVE!	Offer MOVE! - Optional	Do Not Offer MOVE!	Comments
Age < 70 and BMI > 30 or ≥ 25 with co-morbid/weight related disorder*	Х			This is the main target group. If a patient has received risk counseling and is not interested, offer support and advise to consider treatment options when ready to work on weight.
				(*diabetes, hypertension, dyslipidemia, degenerative joint disease, sleep apnea, or metabolic syndrome)
Age < 70 and BMI 25-29.9 without co-morbid conditions*		Х		This group is advised to consider treatment. If a patient has received risk counseling and is not interested, offer support and advise to consider treatment options when ready to work on weight.
Age ≥ 70 and BMI ≥ 25		X		Veterans over age 70 require medical evaluation prior to beginning new physical activity and need closer nutritional supervision to minimize protein, vitamin, and mineral deficiencies. Goals of treatment in the elderly should focus on improvement or preservation of functional status.
Any age and BMI <25			x	Weight management (WM) treatment is not indicated for this group with normal weight. Focus should be on maintaining current weight or stopping weight gain. Encourage Veteran to continue healthy lifestyle practices and refer Veteran to 9 Healthy Living Messages. Patients who had prior weight loss and are struggling with maintenance may be referred to MOVE!.
Veterans deemed unlikely to benefit			Х	Veterans are unlikely to benefit from a weight management program because:
from weight management services				incremental benefit from weight loss is likely to be small relative to the current morbidity
				weight loss is contraindicated
				 Veteran's status limits self-management participation; long-term care facility resident (not a medical condition)
				Veterans with the following medical diagnoses are unlikely to benefit from weight management services; however, each Veteran may be offered the choice and the individualized plan should reflect the goals set by the Veteran:
				Active cancer other than non-melanoma skin cancer
				End-stage COPD
				Congestive heart failure
				End-stage neurologic disorders (e.g., Parkinson's, ALS, MS)
				End-stage renal disease
				 Moderate to severe cognitive impairment (dementia) that would prevent the Veteran from being able to benefit from self-management of weight
				 Acute psychosis that would prevent the Veteran from being able to benefit from self-management of weight
				 Acute substance abuse that would prevent the Veteran from being able to benefit from self- management of weight
				Acute AIDS-related complex
				Anorexia

3 Links

VHA National Center for Health Promotion and Disease Prevention http://www.prevention.va.gov/

Veterans Health Administration Office of Patient Care Services http://www.patientcare.va.gov/

Weight Management Program for Veterans (MOVE!®) http://www.move.va.gov/

NIH Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report (1998) http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.htm

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