



REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH

**CLINICAL MANAGEMENT PROTOCOLS
FOR THE MOST COMMON HEALTH CONDITIONS
IN PRIMARY HEALTH CARE**

ممول من الإتحاد الأوروبي
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تم إنتاج هذا الدليل بدعم من الاتحاد الأوروبي وتمت طباعته من قبل منظمة الصحة العالمية بالشراكة مع مفوضية الأمم المتحدة العليا لشؤون اللاجئين وذلك في إطار مشروع بإدارة وزارة الصحة العامة. إن وزارة الصحة العامة هي الجهة الوحيدة المسؤولة عن محتوى هذا الدليل ولا يمكن اعتباره بأي حال من الأحوال على أنه يعكس وجهة نظر الاتحاد الأوروبي.

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نقذ هذا الدليل بالتعاون مع الجمعية اللبنانية لطب العائلة:

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V. OBESITY

Antoine Aoun, MD

EPIDEMIOLOGY

1. It is a substantial public health crisis with the prevalence increasing rapidly worldwide.
2. The prevalence of obesity in Lebanon is around 26%, according to study conducted on a representative sample of 3500 participants in 2012.

DEFINITION

1. Defined as abnormal or excessive fat accumulation that may impair health.

CAUSES

1. Hypothyroidism.
2. Cushing's Syndrome.
3. Insulinoma.
4. Hypothalamic obesity.
5. Polycystic ovary syndrome.
6. Family history.
7. G syndromes such as Pader Willi, Alstroms, Bardet Biedl, Cohens, Borjeson Forsmsman Lehmann and Frohlich's syndrome.
8. Growth hormone deficiency.
9. Medication related: including phenothiazines, sodium valproate, carbamazepine, tricyclic antidepressants, lithium, glucocorticoids, megestrol acetate, the thiazolidinediones, the sulphonylureas, insulin, adrenergic antagonists, serotonin antagonists, and oral contraceptives.
10. Eating disorders: especially binge eating disorder, bulimia nervosa and night eating disorder.
11. Hypogonadism.
12. Pseudohypoparathyroidism.
13. Environmental: sedentary behaviors, culture and dietary habits etc. e.g., television-video-computer games, consumption of sweetened soft drinks.

DIAGNOSIS

1. Body Mass Index (BMI) is calculated as Weight in kg/Height in m². Commonly used to classify obesity as:
 - a. Grade 1 overweight (commonly called overweight) - BMI of 25-29.9 kg/m²
 - b. Grade 2 overweight (commonly called obesity) - BMI of 30-39.9 kg/m²
 - c. Grade 3 overweight (commonly called severe or morbid obesity) - BMI \geq 40 kg/m²
2. Waist circumference: considered high, in the Middle Eastern region, if above 94 cm in men and 80 cm in women.
3. Waist to hip ratio above 0.90 for males and 0.85 for females reflects central obesity characterized by an "android" or "apple" shape. It is more common in men and considered a strong risk factor for several diseases, whereas the "gynoid" or "pear" shaped obesity is more frequent in women.

CO-MORBIDITIES

1. Respiratory: obstructive sleep apnea, greater predisposition to respiratory infections, increased incidence of bronchial asthma, and Pickwickian syndrome (obesity hypoventilation syndrome).
2. Malignancy : endometrial, prostate, colon, breast, gall bladder, and possibly lung cancer.
3. Psychological: social stigmatization and depression.
4. Cardiovascular: coronary artery disease, essential hypertension, left ventricular hypertrophy, cor pulmonale, obesity-associated cardiomyopathy, accelerated atherosclerosis, and pulmonary hypertension of obesity.
5. Central nervous system: stroke, idiopathic intracranial hypertension, and meralgia paresthetica.
6. Obstetric and perinatal: pregnancy-related hypertension, fetal macrosomia, and pelvic dystocia.
7. Surgical: Increased surgical risk and postoperative complications, including wound infection, postoperative pneumonia, deep venous thrombosis, and pulmonary embolism.
8. Urinary stress incontinence.
9. Gastrointestinal: gall bladder disease (cholecystitis, cholelithiasis), nonalcoholic steatohepatitis (NASH), fatty liver infiltration, and reflux esophagitis.
10. Orthopedic : osteoarthritis, coxa vera, slipped capital femoral epiphyses, Blount disease and Legg-Calvé-Perthes disease, and chronic lumbago.
11. Metabolic: type 2 diabetes mellitus, prediabetes, metabolic syndrome, and dyslipidemia.
12. Reproductive:
 - a. in women: anovulation, early puberty, infertility, hyperandrogenism, and polycystic ovaries
 - b. in men: hypogonadotropic hypogonadism
13. Cutaneous: Intertrigo (bacterial and/or fungal), acanthosis nigricans, hirsutism, and increased risk for cellulitis and carbuncles.
14. Extremity: venous varicosities, lower extremity venous and/or lymphatic edema.
15. Miscellaneous: reduced mobility and difficulty maintaining personal hygiene.

PHYSICAL EXAMINATION

1. Anthropometric measurements: height, weight, waist and hip circumference.
2. Skin: intertriginous rashes reflects skin friction; hirsutism in women, acanthosis nigricans, and skin tags are common with insulin resistance state.
3. Neck : goiter may denote thyroid abnormalities.
4. Abdomen: tender large liver may suggest hepatic fatty infiltration or NASH (non alcoholic steatohepatitis) and pink broad striae that suggest cortisol excess.
5. Extremities: joint deformities (e.g. coxa vara), crepitations suggestive of osteoarthritis, pressure ulcers. Localized and lipodystrophic fat distribution should also be identified, because of their common association with insulin resistance.

LABORATORY TESTING

1. Fasting lipid panel.
2. Liver function studies.
3. Thyroid function tests.
4. Fasting glucose and hemoglobin A1c (HbA1c).
5. Insulin level is *not recommended*.

MANAGEMENT (please check algorithm 2.V.1)

1. Highlight the relationship between eating behavior and stressors.
2. Consistent low-calorie and small portion eating patterns.
3. Avoid skipping meals especially breakfast.
4. Weigh once/week.
5. 1 hour physical activity/day and less than 10 hours television (TV) per week.
6. Family support and involvement.

Clinical Practice Recommendations for management of obesity are included in table 2.V.1.

TABLE 2.V.1: CLINICAL PRACTICE RECOMMENDATIONS FOR OBESITY

Clinical Practice Guideline Recommendations	GRADE
Screening and Assessment	
1. Screen adult patients to establish a diagnosis of overweight or obesity by calculating body mass index (BMI), and document the presence of overweight or obesity in the medical record.	B
Normal Weight Patients	
2. Consider providing normal weight patients with information and behavioral counseling regarding healthy diet and physical activity behaviors, in order to maintain a healthy weight.	C
Overweight Patients Without Obesity-Associated Condition(s)	
3. Consider providing overweight patients without obesity-associated conditions with information and behavioral counseling regarding healthy diet and physical activity behaviors, in order to pursue a healthy weight.	C
Overweight Patients With Obesity-Associated Condition(s)	
4. Offer comprehensive lifestyle intervention to achieve weight loss and to improve blood pressure and/or glucose control in overweight patients.	A
5. Offer comprehensive lifestyle intervention to overweight patients with dyslipidemia for weight loss and to improve lipid levels.	B
Obese Patients	
6. Offer obese patients comprehensive lifestyle intervention for weight loss to improve lipid levels, blood pressure, and/or glucose control.	A
7. Offer obese patients comprehensive lifestyle intervention for weight loss to reduce harms of obstructive sleep apnea.	B

8. Consider offering obese patients comprehensive lifestyle intervention for weight loss to reduce harms of degenerative joint disease.	C
General Treatment Principles of Weight Loss	
9. Offer patients at least 12 contacts within 12 months of a comprehensive lifestyle intervention that combines dietary, physical activity and behavioral strategies.	B
10. Plan a net deficit of 500 to 1,000 kcal/day addressing both diet and physical activity to achieve a weight loss of 0.3-1 kg per week, resulting in a 5-10% reduction in body weight over 6 months.	A
11. Offer patients who have met their weight loss goals a comprehensive maintenance program consisting of behavioral components and ongoing support.	B
Behavioral and Lifestyle Approaches	
12. Offer comprehensive lifestyle interventions for weight loss, in either individual or group setting.	B
13. Offer telephone-based comprehensive lifestyle intervention for weight loss, either as an alternative or an adjunct to face-to-face intervention.	B
14. There is insufficient evidence for or against offering internet-based comprehensive lifestyle intervention for weight loss, as an alternate or adjunct to face-to-face intervention.	I
Dietary Approaches	
15. Offer any of several diets that produce a caloric deficit and have evidence for weight loss efficacy and safety (e.g., low-carbohydrate, Dietary Approaches to Stop Hypertension (DASH), low-fat).	A
16. Offer very-low-calorie diets for weight loss, but only for short durations (12-16 weeks) and under close medical supervision.	B
17. Offer meal replacements to achieve low-calorie or very low-calorie diets.	A
Physical Activity Approaches	
18. Offer physical activity options that include short intermittent bursts (at least 10 minutes) as well as longer continuous exercise.	A
19. Offer, as part of a comprehensive lifestyle intervention, moderate-intensity physical activity performed for at least 150 minutes/week to result in weight loss.	A
Pharmacotherapy	
20. Offer pharmacotherapy with the combination phentermine/topiramate extended-release to patients with a BMI ≥ 30 kg/m ² and to those with a BMI ≥ 27 kg/m ² who also have obesity-associated conditions, as an adjunct to comprehensive lifestyle intervention, when lifestyle interventions alone do not produce the desired weight loss.	A
21. Offer pharmacotherapy with orlistat or lorcaserin to patients with a BMI ≥ 30 kg/m ² and to those with a BMI ≥ 27 kg/m ² who also have obesity-associated conditions, as an adjunct to comprehensive lifestyle intervention, when lifestyle interventions alone do not produce the desired weight loss.	B
22. Offer patients who achieve their weight loss goal a program that includes continued use of medication for weight maintenance.	B
Bariatric Surgery	
23. Offer bariatric surgery, as an adjunct to comprehensive lifestyle intervention, for weight loss in adult patients with a BMI > 40 kg/m ² or those with BMI 35.0-39.9 kg/m ² with one or more obesity-associated conditions.	A

MEDICATIONS

Currently, the major drugs approved by the FDA and used to manage obesity are included in table 2.V.2:

TABLE 2.V.2: RECOMMENDED DOSES FOR OBESITY PHARMACOTHERAPY

Recommended Dosage for Selected Obesity Drug Therapy		
Drug	Recommended Dosage and Administration	Contraindications and Cautions
Orlistat 120 mg capsule [Gastrointestinal lipaseinhibior]	120 mg, three times a day - Taken with or within 1 hour of each meal containing fat - Take daily multivitamin (containing fat soluble vitamins A, D, E, and K at least two hours prior to orlistat)	- Contraindicated during pregnancy (FDA category X) - Not recommended for mothers who are nursing - Increased gastrointestinal adverse effects when taken with diets high in fat
Lorcaserin 10 mg tablet [Serotonin receptor agonist]	10 mg two times a day - Maximum 20 mg/day - May be taken without regard to food - Consider stopping after 12 weeks if lorcaserin has not been effective in reducing weight more than 5% of initial body weight	- Contraindicated during pregnancy (FDA category X) - Not recommended for mothers who are breastfeeding - Use with caution in patients with valvular heart disease, bradycardia, congestive heart failure, or those using serotonergic or antidopaminergic drugs - Potential for cognitive impairment and psychiatric reactions including sedation, euphoria and suicidal thoughts - Potential risk of hypoglycemia inpatients being treated for diabetes, anemia, neutropenia, hyperprolactinemia
Phentermine / topiramate 3.75 mg/23 mg, 7.5 mg/46 mg, 11.25 mg/69 mg, 15 mg/92 mg Extended-release capsules (ER caps) [Appetite suppressant / Anticonvulsant]	Dose Titration - One 3.75 mg/23 mg ER cap each morning for 14 days; then increase to 7.5 mg/46 mg each morning for an additional 12 weeks. - If a weight loss of 3% of baseline body weight is not achieved discontinue or increase the dose to 11.25 mg/69 mg each morning for 14 days; then increased to 15 mg/92 mg (maximum dose) daily. - If after 12 weeks on 15 mg/92 mg the patient has not lost at least 5% of baseline body weight, discontinue treatment using every other day weaning over one week thereby decreasing risk of seizure	- Contraindicated during pregnancy (FDA category X) and use not recommended in breast feedin mothers - Avoid use in glaucoma, hyperthyroidism, or within 14 days following use of a MAOI - Not recommended in patients with unstable cardiac or cerebrovascular disease - Potential for metabolic acidosis, elevated creatinine, hypotension, CNS depression, hypokalemia, kidney stones, withdrawal seizures, and hypoglycemia in patients being treated for diabetes

SURGERY

A summary of surgical procedures for obesity treatment is included in table 2.V.3.




SELECTION CRITERIA:

1. Able to adhere to postoperative care
2. BMI ≥ 40 kg/m²
3. BMI ≥ 35 kg/m² with obesity-related comorbidity
4. Previous failed nonsurgical attempts at weight reduction, including nonprofessional programs

EXCLUSION CRITERIA:

1. Cardiopulmonary disease that would make the risk prohibitive
2. Current drug or alcohol abuse
3. Lack of comprehension of risks, benefits, expected outcomes, alternatives, and required lifestyle changes
4. Reversible endocrine or other disorders that can cause obesity
5. Uncontrolled severe psychiatric illness

TABLE 2.V.3: SUMMARY OF SURGICAL PROCEDURES FOR OBESITY TREATMENT

		Gastric Bypass 	Gastric Banding 	Sleeve Gastrectomy 
What's involved?		Staples partition the stomach below the esophagus to make a small pouch. This pouch connects to the lower small intestine, bypassing the upper segment.	An adjustable band constricts the stomach just below the esophagus, creating a small pouch with a narrow outlet to the larger part of the stomach.	A thin vertical sleeve of stomach is created using a stapling device. The sleeve is about the size of a banana. The rest of the stomach is removed.
Type		Combination	Restrictive	Restrictive
Excess weight loss	in 1 year	38%	21%	26%
	in 2 years	62%	47%	68%
Long term weight loss		10 years, 25%	10 years, 13%	10 years, 17%
Surgery risk of death		Laparo-scopic	Laparo-scopic	Laparo-scopic
		Open	Open	Open
		< 1%	< 0.1%	< 1%
		< 1%	< 1%	< 1%
Percentage of people having gastrointestinal side effects after surgery		17%	7%	18%
Nutrient or vitamin deficiency		17%	NA	3%
Average hospital stay after surgery	Laparo-scopic	2 days	1 day	1 day
	Open	3 days	4 days	4 days

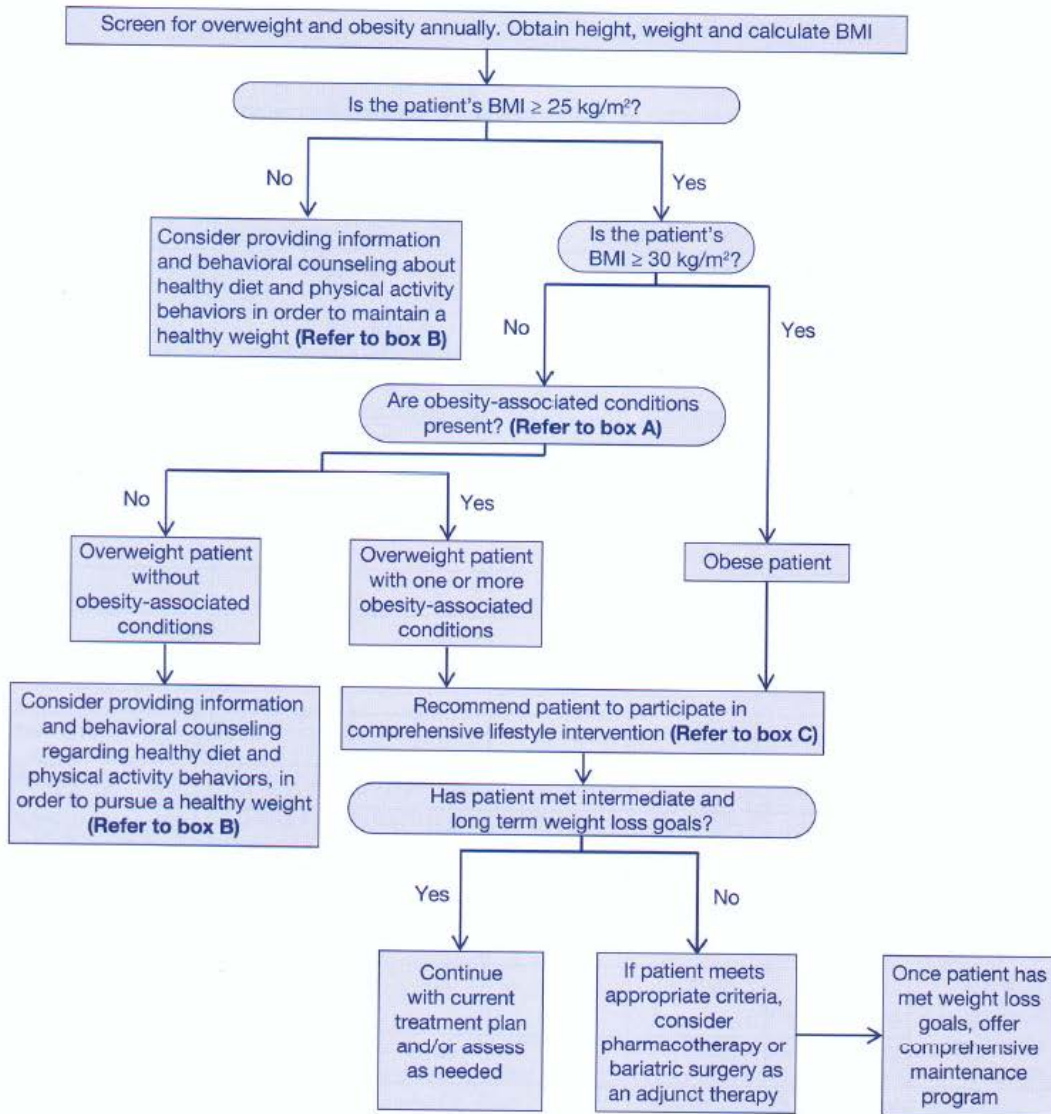
REFERRAL

1. Refer all to registered dietician for implementation of prescribed diet
2. Refer to "obesity treatment center" or endocrinologist if uncertain about diagnosis or patient desires multidisciplinary treatment or if BMI > 40 or BMI > 35 with significant co-morbidity

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ALGORITHM 2.V.1: MANAGEMENT OF OBESITY



Box A: Common Obesity-Associated

1. Hypertension
2. Type 2 diabetes and prediabetes
3. Dyslipidemia
4. Metabolic syndrome
5. Obstructive sleep apnea
6. Degenerative joint disease
7. Non alcoholic fatty liver disease

Box B: Behavioral Counseling

Healthcare staff-delivered activities to assist patients adopt change or maintain healthy dietary and physical activity behaviors.

Box C: Comprehensive Lifestyle Intervention

An intervention that combines dietary, physical activity and behavioral components; and it includes at least 12 intervention sessions over a 12 month period.