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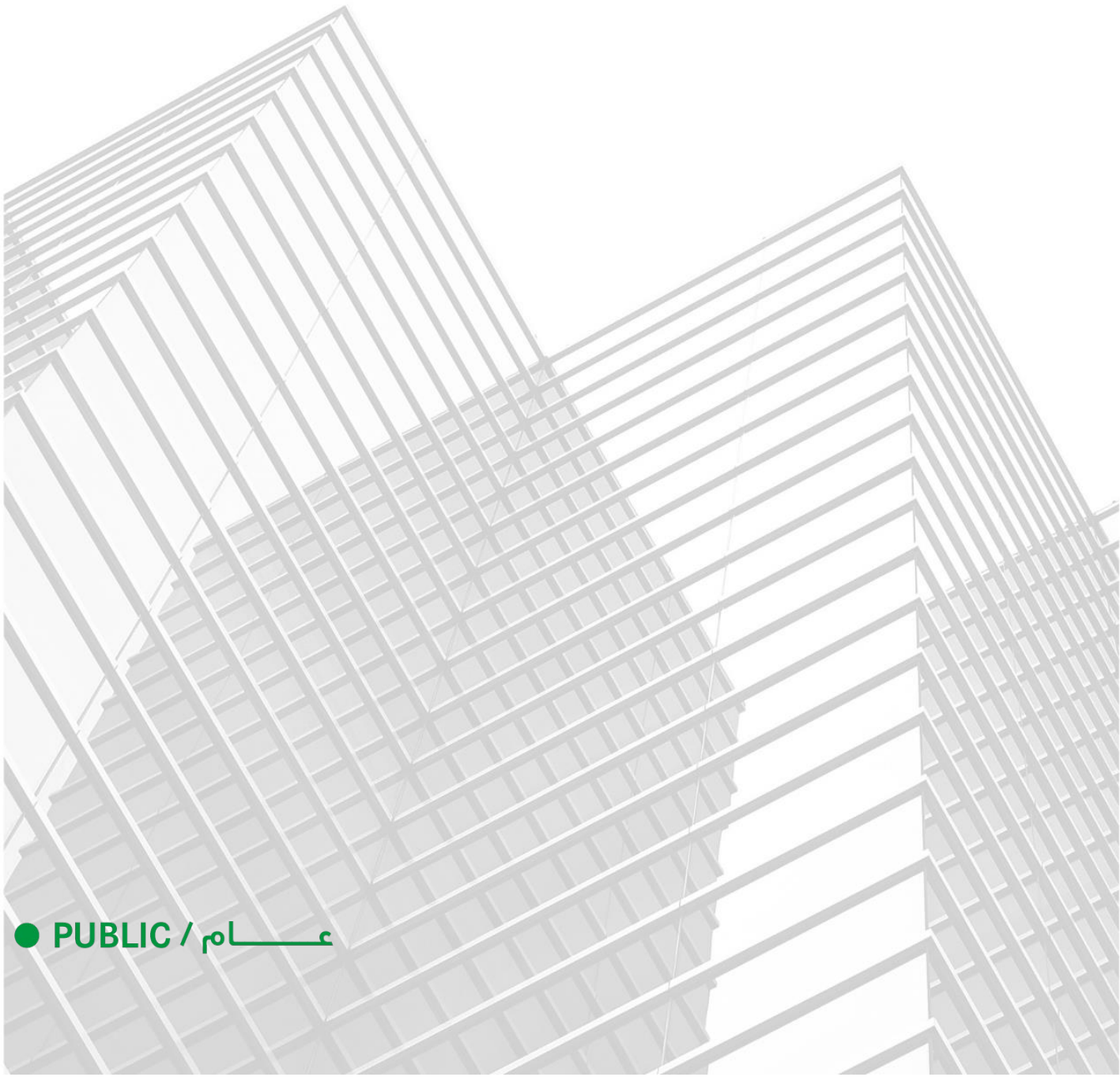
DEPARTMENT OF HEALTH

Standard for Non-surgical Management of Obesity



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1. Standard Scope

The purpose of this standard is to set the requirements for prevention, screening, diagnosis and management of obesity in adults. This standard applies to all healthcare facilities and healthcare professionals licensed to provide obesity management services by Department of Health Abu Dhabi.

This standard should be read in alignment with the following documents:

- *Standard for Obesity and Weight Diagnosis, Pharmacological and Surgical Management Interventions*
- *Thiqa Reimbursement Policy for Obesity Management Medications*

2. Definitions and Abbreviations

No.	Term / Abbreviation	Definition
2.1	BMI	Body Mass Index is numerical value calculated from a person's weight and height, used to categorize underweight, normal weight, overweight, and obesity.
2.2	DoH	Department of Health – Abu Dhabi
2.3	HbA1c	Hemoglobin A1C is a blood test that measures the average blood sugar levels over the past 3 months, used to diagnose and monitor diabetes.
2.4	MDT	The multidisciplinary team for weight management includes but not limited to licensed physician, dietitian/nutritionist, exercise physiologist, behavioral therapist/psychologist, nurse/nurse practitioner and other allied healthcare professional to comprehensively address the complex nature of obesity.
2.5	Metabolic Syndrome	Metabolic syndrome is a cluster of common abnormalities, including insulin resistance, impaired glucose tolerance, abdominal obesity, reduced high-density lipoprotein (HDL)-cholesterol levels, elevated triglycerides, and hypertension.
2.6	Overweight and Obesity	Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health.
2.7	Sahatna App	A mobile app by the Department of Health - Abu Dhabi that allows residents to manage their health with features like appointment booking, teleconsultations, and access to health.

3.Standard Requirements and Specifications

3.1 Health Risks of Obesity

3.1.1 Obesity is characterized by an abnormal or excessive accumulation of body fat. Obesity is a multi-faceted and chronic relapsing disease that has detrimental effects on health and overall well-being.

3.1.2 It increases the likelihood of experiencing long-term medical complications, diminishes quality of life, and reduces life expectancy. Consequently, patients with obesity face a heightened risk of developing severe chronic illnesses like heart disease, cancer, stroke, diabetes, and non-alcoholic fatty liver disease.

3.1.3 Additionally, weight bias, stigma, and discrimination are prevalent in both healthcare settings and society, resulting in unfair treatment of individuals living with obesity.

3.1.4 Obesity is a risk factor for several chronic diseases, and a positive association exists between obesity and mortality risk, irrespective of sex and ethnicity, with advanced stages of obesity being associated with elevated risk of mortality.

3.1.5 Obesity increases the risk of diabetes mellitus type 2, gallbladder disease, and gout, as well as contributing to the development of various complications that are key drivers of morbidity and mortality, such as cardiovascular disease and cancer.

3.1.6 Obesity also contributes to functional limitations. It is associated with a higher risk of conditions such as osteoarthritis, which can cause gait changes, reduced mobility, and chronic pain. This pain often leads to avoidance of physical activity, exacerbating functional limitations and increasing the risk of developing depression and anxiety.

3.1.7 Obesity also contributes to psychological symptoms. It is a risk factor for various mental health conditions, including mood disorders.

3.2 Risk Factors for Developing Obesity

Risk factors for obesity include individual non-modifiable risk factors and individual modifiable risk factors as well as societal and environmental factors, which often overlap and influence one another.

3.2.1 Individual, non-modifiable, risk factors

- Demographic factors:
  - Female gender.
  - Increasing age.
- Genetic factors:
  - Individual genetic makeup.
  - Ethnicity.
  - Family history of overweight, obesity, obesity complications, and comorbidities.
- Developmental factors:
  - Physical or learning disability.
  - Enduring mental health difficulties.
  - Childhood psychological trauma.

- Intrauterine, antenatal, and post-natal factors:
    - Low or high birth weight.
    - Maternal obesity.
    - Maternal gestational weight gain.
    - Maternal gestational diabetes mellitus or maternal diabetes mellitus.
    - Maternal smoking in pregnancy.
    - Absence of breastfeeding.

3.2.2 Individual potentially modifiable microenvironmental risk factors

- Dietary factors:
    - High intake of energy-dense food or drinks, including alcohol, confectionary, sugar-sweetened beverages and highly processed food.
    - Unhealthy nutrient composition of foods consumed (e.g., low on dietary fiber).
    - Poor hydration/inadequate water intake <2-3litres a day in adults
- Other lifestyle factors:
    - Sedentary lifestyle with low levels of physical activity.
    - Choice of hobbies that promote a sedentary lifestyle (e.g., television, gaming).
    - Lack of sufficient good quality uninterrupted sleep.
    - Sedentary work or night-shift work.
- Other modifiable factors:
    - Maternal obesity.
    - Multiple pregnancies with post-partum weight retention.
    - Psychological factors (e.g., stress, depression, comfort-eating).
    - Epigenetic factors resulting from microenvironmental/lifestyle factors and affecting future offspring.

3.2.3 Societal and environmental (macroenvironmental) cofactors

Examples include:

- Low public health awareness.
- High outdoors temperature limited outdoors activities and exercise options.
- Low walkability and high dependence on cars.
- Wide and easy availability of affordable, but unhealthy food, whilst healthier wholesome, unprocessed, natural foods are more expensive
- Lack of or insufficient nutritional labeling.
- Endocrine disruptors e.g. microplastics, or antibiotics and hormones in food e.g. chicken.

3.3 Diagnosis

3.3.1 Clinical presentation

3.3.1.1 Self-presentation requesting advice on how to lose weight, or with concern that they have an underlying medical problem causing weight gain.

3.3.1.2 Opportunistic identification of obesity during a consultation or surgery (e.g., organ transplantation, orthopedic intervention, abdominal hernia repair), or when attending primary care for routine visits or minor ailments.

3.3.1.3 Advised to lose weight for management of underlying conditions (e.g. diabetes mellitus, neuropathy, obstructive sleep apnea syndrome, or fatty liver disease), or required for a specific intervention (e.g., fertility treatment).

3.3.2 Screening

3.3.2.1 All adult patients should be screened for overweight and obesity by measuring body mass index (BMI) as part of their routine physical examination.

3.3.2.1.1 Measuring BMI is the generally accepted first step to determine the degree of overweight. BMI is easy to measure, reliable, and correlated with percentage of body fat and body fat mass.

3.3.2.1.2 Interpret BMI with caution in adults with high muscle mass because it may be a less accurate measure of central adiposity in this group.

3.3.2.1.3 Interpret BMI with caution in people aged 65 and over, considering comorbidities, conditions that may affect functional capacity and the possible protective effect of having a slightly higher BMI when older.

3.3.2.2 Overweight and obesity are classified, in adults, as follows:

- Underweight: BMI below 18.5 kg/m2.
- Normal weight: BMI 18.5 kg/m2 to 24.9 kg/m2.
- Overweight: BMI 25.0 kg/m2 to 29.9 kg/m2.
- Obesity class 1: BMI 30.0 kg/m2 to 34.9 kg/m2.
- Obesity class 2: BMI 35.0 kg/m2 to 39.9 kg/m2.
- Obesity class 3: BMI 40.0 kg/m2 or more.

3.3.2.3 Consider using bio-electrical impedance as well as BMI to quantify fat and muscle mass.

3.3.2.4 A frequently cited barrier to screening is the potential risk of stigma associated with a diagnosis of obesity. Use of sensitive language around obesity (such as "unhealthy" or "excess" weight) and education about the increasing number of treatment options can improve patient engagement in their care. Using language such as "person with obesity" rather than "obese person" emphasizes that obesity is a disease and may reduce stigma.

3.3.3 Initial assessment

3.3.3.1 Take measurements to determine the degree of overweight or obesity (weight, height, BMI, waist circumference, hip circumference).

3.3.3.2 Assess current medical state:

- Family history of overweight, obesity and complications.
- Presenting symptoms.
- Medical problems and current medication.
- Comorbidities (e.g. type 2 diabetes, hypertension, cardiovascular disease, osteoarthritis, dyslipidemia and sleep apnea).
- Risk factors (e.g. lipid profile (preferably done when fasting), blood pressure measurement, HbA1c measurement, waist circumference).
- Potential weight loss is required to improve health.

3.3.3.3 Assess other underlying causes of overweight or obesity, including, but not limited to:

- History of obesity, when it started, rate of progression, precipitants (e.g. medication), attempts at obesity management and the response to them.

- Eating behaviors and dietary habits.
- Activity level (physical exercise and non-exercise activity).
- Psychosocial distress and problems.

3.3.3.4 Assess psychological, environmental and social factors:

- The patient's willingness and motivation to change lifestyle.
- Employment status and working conditions (e.g. night shift work).
- Role of family and care workers in supporting lifestyle changes (particularly for individuals with disabilities).

3.3.3.5 Patients with BMI and/or waist circumference above the recommended thresholds may require additional assessment and diagnosis (Appendix 1).

3.3.3.6 Measure waist circumference in those with BMI between 25.0 and 35.0 kg/m2. Abdominal adiposity (and associated risk) may not be otherwise captured in this BMI range.

3.3.3.7 Measure waist-to-height ratio in those with BMI between 25.0 and 35.0 kg/m2. This serves as a practical estimate of central adiposity and can help assess and predict health risks (e.g. type 2 diabetes, hypertension or cardiovascular disease).

3.3.3.7.1 Waist-to-height ratio of 0.4 to 0.49 indicates a healthy level of central adiposity, and no increased health risks.

3.3.3.7.2 Waist-to-height ratio of 0.5 to 0.59 indicates increased central adiposity, with increased health risks.

3.3.3.7.3 Waist-to-height ratio of 0.6 or more indicates high central adiposity, with further increased health risks.

3.3.3.8 The Edmonton Obesity Staging System should be used to grade the severity of obesity in those with a BMI ≥ 30.0 kg/m2 to assess the severity of obesity and guide appropriate weight management (Appendix 2).

3.3.4 Risk Assessment

3.3.4.1 Because BMI is associated with the risk for weight-related health complications, use BMI-based classifications taking into account obesity complications to identify the candidates for specific weight loss interventions.

3.3.4.1.1 **Little or no risk**: A BMI of 20.0 to 25 kg/m2 is associated with little or no increased risk unless the waist circumference is high (a marker of increased cardiometabolic risk) or the person has gained more than 10 kg since age 18 years. Some ethnic groups such as those of Asian origin start to incur risk, even in this low range (i.e., BMI >23 kg/m2).

3.3.4.1.2 **Low risk:** Some individuals with a BMI of 25.0 to 29.9 kg/m2, who do not have risk factors for cardiovascular disease or other weight-related comorbidities, may be described as having low risk, particularly if they are older. They should receive counselling on weight loss and prevention of weight gain, including advice on dietary habits, sleep hygiene, stress management, hydration and physical activity.

3.3.4.1.3 **Moderate risk**: Some individuals with a BMI between 25.0 and 29.9 kg/m2 and with one or more risk factors for cardiovascular disease (e.g., diabetes, hypertension, dyslipidemia). or with a BMI of 30.0 to 34.9 kg/m2, are at moderate risk. Such patients should be offered or referred to intensive, multicomponent behavioral intervention. This includes tools and strategies to make dietary changes, increase

physical activity, support and maintain weight loss, along with pharmacological therapy.

3.3.4.1.4 **High risk**: Individuals with a BMI of 35.0 kg/m2 and above are at high risk, especially those ages 20 to 39, as well as those with a BMI above 40 kg/m^2. Individuals in the highest-risk categories should receive the most aggressive treatment (intensive, multicomponent behavioral intervention, pharmacologic therapy, bariatric surgery).

3.4 Treatment

3.4.1 Goals of treatment: The goal of treatment is to prevent, treat, or reverse the complications of obesity and improve quality of life. Clinicians should elicit the patient's weight loss goals, convey the expected magnitude of weight loss with specific interventions, and align planned interventions with the patient's goals.

3.4.1.1.1 **Multicomponent intervention:** Multicomponent interventions are the treatment of choice, and combine diet, exercise, behavioral modification and pharmacological therapy when required.

3.4.1.1.2 The behavioral modification component facilitates adherence to diet and exercise regimens, and includes regular self-monitoring of food intake, physical activity, and weight.

3.4.1.1.3 Ensure weight management programs include behavior change strategies to increase people's physical activity levels or decrease inactivity, improve eating behavior and the quality of the patient's diet, and reduce energy intake. When choosing treatments, consider:

- Patient’s preference and social circumstance, and the experience and outcome of previous treatments (including whether there were any barriers)
- Degree of overweight and obesity or increased health risk based on their waist-to-height ratio
- Any complications of obesity

3.4.1.1.4 Lifestyle management apps that support monitoring, measuring and maintaining progress, such as Sahatna, are recommended to be considered.

3.4.1.1.5 Document the results of any discussion. Keep a copy of the agreed goals and actions (ensure the patient also does this) or put this in the patient’s records.

3.4.1.1.6 Offer support depending on the patient's needs and be responsive to changes over time.

3.4.1.1.7 Ensure any healthcare professionals who deliver interventions for weight management have relevant competencies and have completed required training(s).

3.4.1.1.8 Provide information in formats and languages that are suited to the patient. Use every day, jargon-free language and explain any technical terms when talking to the patient and their family or carers. Consider the patient’s:

- Age and stage of life.
- Gender.
- Cultural needs and sensitivities.
- Ethnicity.
- Social and economic circumstances.
- Specific communication needs (for example, because of learning disabilities, physical disabilities or cognitive impairments due to neurological conditions).

3.4.1.1.9 Praise successes – however small – at every opportunity to encourage the patient through the difficult process of changing established behavior.

3.4.1.1.10 Give people who are living as overweight or obese, and their families and/or carers, relevant information on:

- Being overweight, and obese in general, including related health risks.
- Realistic targets for weight loss.
- The distinction between losing weight and maintaining weight loss, and the importance of developing skills for both; to achieve health gains. Advise them that the change from losing weight to maintenance typically happens after 6 to 9 months of treatment.
- Realistic targets for outcomes other than weight loss, such as increased physical activity and healthier eating.

3.4.1.2 Behavioral interventions

3.4.1.2.1 MDT should include the following strategies in behavioral interventions for adults, as appropriate (Appendix 3):

- self-monitoring of behavior and progress
- stimulus control
- goal setting
- mindful eating, and to avoid eating when distracted eg watching TV
- slowing rate of eating, and chewing food well, as well as taking small breaks between mouthfuls
- Ensuring social support
- problem solving
- assertiveness
- cognitive restructuring (modifying thoughts)
- reinforcement of changes
- relapse prevention
- strategies for dealing with weight regain

3.4.1.3 Physical activity

3.4.1.3.1 Encourage adults to increase their level of physical activity, even if they do not lose weight as a result, because of the other health benefits it can bring (e.g., reduced risk of type 2 diabetes and cardiovascular disease).

3.4.1.3.2 Advise that to prevent obesity, most people may need to do 45 to 60 minutes of moderate-intensity activity a day, particularly if they do not reduce their energy intake. Advise people who have been living with obesity and have lost weight that they may need to do 60 to 90 minutes of activity a day to avoid regaining weight.

3.4.1.3.3 Encourage adults to build up to the recommended activity levels for weight maintenance, using a managed approach with agreed goals.

3.4.1.3.4 Recommend types of physical activity, including:

- activities that can be incorporated into everyday life, such as brisk walking, gardening or cycling.
- supervised exercise programs.

- other activities, such as swimming, aiming to walk a certain number of steps each day, or stair climbing.

3.4.1.3.4.1 Consider the patient's current physical fitness and ability for all activities. Encourage people to also reduce the amount of time they spend inactive, such as watching television, using a computer or playing video games.

3.4.1.4 Dietary approaches

3.4.1.4.1 Dietary interventions should be personalized and meet patient's values, preferences, and treatment goals to promote long term adherence and administered by a dietitian to improve weight-related and health outcomes.

3.4.1.4.2 The main requirement of a dietary approach to weight loss is that the total energy intake should be less than energy expenditure.

3.4.1.4.3 Diets that have a 500-1000 kcal/day deficit (that is, they contain 500-1000 kcal less than the patient needs to stay the same weight) or that reduce calories by lowering the fat content (low-fat diets), in combination with expert support and intensive follow up, are recommended for helping with weight loss .Use of very-low-calorie diets (deficit of 1000 kcal/day or more) is not recommended for long-term management of obesity.

3.4.1.4.4 Consider very-low-calorie diets as part of a multicomponent weight management strategy, for people who are living with obesity and who have a clinically assessed need to rapidly lose weight (for example, people who need joint replacement surgery or who are seeking fertility services). Be aware that higher calorie deficit diets are less likely to be nutritionally complete. Ensure that:

- The diet is nutritionally complete.
- The diet is followed for a maximum of 12 weeks (continuously or intermittently).
- The patient following the diet is given ongoing clinical support.

3.4.1.4.5 Before starting someone on a very low-calorie diet as part of a multicomponent weight management strategy:

- Consider counselling and assess for eating disorders or other psychopathology to make sure the diet is appropriate for them.
- Discuss the risks and benefits with them.
- Tell them that this is not a long-term weight management strategy, and that regaining weight may happen and is not because of their own or their clinician's failure.
- Discuss the reintroduction of food following a liquid diet with them.
- Provide a long-term multicomponent strategy to help the patient maintain their weight after the use of a very low-calorie diet.
- Encourage people to eat a balanced diet in the long term, consistent with other healthy eating advice.

3.4.2 Pharmacological intervention: For patients with advanced stages of obesity (EOSS > 2, and those with stage 0 or stage 1 who are unable to achieve weight loss goals through a comprehensive lifestyle intervention alone as initial attempt, pharmacological intervention can be considered for people who have not achieved remission of

complications, or reached their target weight loss or have reached a plateau on dietary, activity and behavioral changes.

3.4.2.1 The obesity certified physician determines the initiation time of pharmacological treatment after discussing the potential benefits and limitations with the patient, including mode of action, adverse effects and monitoring requirements, whilst encouraging them to view this as an adjunct to healthful lifestyle choices including improved diet, and increased activity including resistance exercises.

3.4.2.2 Obesity management medications approved as of November 2024:

3.4.2.2.1 **GLP-1 receptor agonists (e.g., liraglutide, semaglutide, tirzepatide)**

- Starting criteria: Has a BMI of at least 30.0 kg/m2, **AND** one or more weight-related comorbidities (Appendix 4).), or BMI >40kg/m2.
- Stopping criteria: Continue beyond 6 months only if the patient has lost at least 5% of their initial body weight since starting the drug. For those who have already been using GLP1 agonist therapy, assess weight loss from weight pre-treatment to 3months following maximum tolerated dose.

3.4.2.2.2 **Lipase inhibitors (e.g., tetrahydrolipstatin - orlistat)**

- Starting criteria: Has a BMI of at least 30.0 kg/m2, **OR** a BMI of at least 28.0 kg/m2 with associated risk factors.
- Stopping criteria: Continue beyond 3 months only if the patient has lost at least 5% of their initial body weight since starting the drug.
- Considerations: Use with other drugs aimed at weight reduction is not recommended.

3.4.2.2.3 **Combination anorectic medication (e.g., phentermine and topiramate extended release)**

- Starting criteria: Has a BMI of at least 35.0 kg/m2, **AND** one or more weight-related comorbidities (Appendix 4).
- Stopping criteria: Continue beyond 3 months only if the patient has lost at least 5% of their initial body weight since starting the drug.

3.4.2.3 Make arrangements for appropriate healthcare professionals to offer information, support and counselling on additional diet, physical activity and behavioral strategies when drug treatment is prescribed.

4.Key stakeholder Roles and Responsibilities

4. General Duties for Healthcare Providers

4.1 Licensed Healthcare Professional:

4.1.1 All DoH licensed healthcare professionals certified in Weight management must provide clinical services in accordance with the requirements of this Standard, and the relevant DoH Standards.

4.1.2 A multidisciplinary team for weight management includes:

4.1.2.1 Physician: who has training in obesity management and certification approved by DoH, oversees medical aspects, prescribes medications, and monitors overall health.

4.1.2.2 Dietitian/Nutritionist: Develops personalized meal plans and educates patients on healthy eating habits.

4.1.2.3 Exercise Physiologist: Creates tailored exercise programs to improve physical activity levels.
4.1.2.4 Behavioral Therapist/Psychologist: Addresses psychological barriers to weight loss and promotes mental well-being.
4.1.2.5 Nurse/Nurse Practitioner: Provides ongoing support, monitors progress, and assists with medical management.

4.2 Licensed Healthcare Facilities

4.2.1 All DoH licensed healthcare facilities should comply with the requirement of this standard, and the relevant DoH Standards and UAE laws.

4.2.2 Ensure that only Healthcare Licensed professionals provide clinical services.

4.2.3 Submit data to DoH via e-claims and in accordance with the DoH Reporting of Health Statistics Chapter, Health Regulator Manual, Version 1.0 and as set out in the DoH Data Management Policy Standards and Procedures (available from www.doh.gov.ae).

4.3 Reimbursement Mechanism

4.3.1 All DoH licensed healthcare facilities providing weight management services & obesity care must:

4.3.2 Comply with the healthcare insurance pre-authorization requirements, where applicable for payment in accordance with the patients' health insurance product and requirements of this Standard.

4.3.3 Billing and reimbursement of weight management services & obesity care shall be in accordance with DoH Standard for Medical Billing Services in the Emirate of Abu Dhabi[6], Standard Provider Contract, DoH Mandatory Tariff and Associated Claims and Adjudication Rules, and the Claims and Adjudication Standard.

4.4 Patient responsibilities:

4.4.1 It is the goal of the DoH to assure that the Patient receive the best possible healthcare. The health care facility reserves the right to expect the Patient will do their best to meet the following responsibilities during their stay at the hospital or during visit at a clinic[7] .

4.5 Duties for Payers and Payer Third Party Administrators

All payers and TPAs must:

4.5.1 Comply with the health insurance pre-authorization requirement (where applicable) for payment for weight management services & obesity care in accordance with the patients' health insurance product and the provisions as detailed in this Standard.

5.Monitoring and Evaluation

5.1 Ensure the quality-of-service delivery in obesity and weight management programs, healthcare providers should focus on monitoring and evaluating key performance indicators (KPIs) that reflect patient enrollment and retention, weight loss outcomes, clinical measurements, improvement or resolution of obesity related complications and patient engagement and satisfaction. By systematically tracking these KPIs, providers can identify areas for improvement, enhance patient care and achieve better health outcomes. Regular assessment of these factors will help maintain the effectiveness and efficiency of the program, ensuring that patients receive comprehensive and supportive care tailored to their needs.

Note: Detailed KPIs shall be requested through DOH & their partners for reporting purposes.

6.Enforcement and Sanctions

6.1 Healthcare providers, payers and third-party administrators must comply with the terms and requirements of this Standard, the DoH Standard Contract and the DoH Data Standards and Procedures.

6.2 DoH may impose sanctions in relation to any breach of requirements under this standard in accordance with the healthcare sector disciplinary regulation.

7. Relevant Reference Documents

No.	Reference Date	Reference Name	Relation Explanation / Coding / Publication Links
1	**May 03, 2024**	Obesity in adults: Prevalence, screening, and evaluation	Obesity in adults: Prevalence, screening, and evaluation - UpToDate
2	July 2023	Obesity: identification, assessment and management	Obesity: identification, assessment and management (nice.org.uk)
3	June 2024	Obesity National clinical management guidelines	Obesity National clinical management guidelines
4	Sep 2024	Obesity in adults: Overview of management	Obesity in adults: Overview of management - UpToDate
5	2023	Standard for the Principles and Procedures Governing the Recovery of Payment for Healthcare Services under the Health Insurance Scheme	DoH Standard for the Principles and Procedures Governing the Recovery of Payment for Healthcare Services under the Health Insurance Scheme
6	2011	HAAD Standard for Medical Billing Services in the Emirate of Abu Dhabi	HAAD Standard for Medical Billing Services in the Emirate of Abu Dhabi
7	2008	Patient rights and responsibilities	Patient rights and responsibilities

9. Appendices

Appendix 1: Further investigation

Key components of an obesity-centered physical exam:

- Vital signs
  - Blood pressure (using an appropriately sized cuff).
  - Heart rate**.**
- Anthropometric measurement
  - Weight
  - Height
  - BMI.
  - Waist circumference.
  - Hip circumference
- Head and neck
  - Neck circumference, Mallam Pati score.
  - Thyroid exam.
  - Cushing's features (moon faces, prominent supraclavicular and dorsocervical fat pad).
  - Polycystic ovary syndrome (acanthosis nigricans, hirsutism, acne).
  - Hypothyroidism (puffy face, hair loss, enlarged thyroid, eyebrow hair loss).
- Cardiorespiratory
  - Heart rate and rhythm.
  - Signs of heart failure (added heart sounds, pedal edema, pulmonary rales).
- Gastrointestinal
  - Liver span.
  - Umbilical, incisional hernias.
  - Screening for stigmata of chronic liver disease (encephalopathy, ascites, jaundice, palmar erythema, etc.).
- Musculoskeletal
  - Osteoarthritis (Heberden's/Bouchard's nodes, weight-bearing joints).
  - Gout.
  - Gait exam.
- Skin
  - Candida, intertrigo, tinea, skin tags, psoriasis, acanthosis nigricans.
  - Nutritional deficiencies (pallor of conjunctiva, palmar crease rubor, atrophic glossitis, neuropathy).
  - Abdominal striae (violaceous striae wider than 1 cm).
  - Periorbital edema (hypothyroidism).
- Lower limbs
  - Lymphedema (non-painful, pitting edema, typically arms/legs).
  - Lipedema (often painful fat deposition, non-pitting edema, typically in arms and legs with sparing of the hands and feet).
  - Venous insufficiency, ulcers, stasis, thrombophlebitis.

- Laboratory testing
  - Consider the following for most patients
  - HbA1c.
  - Complete (full) blood count.
  - Thyroid stimulating hormone/thyroid function tests (thyroid hormone levels).
  - Electrolytes renal function tests (creatinine, estimated glomerular filtration rate) .
  - Urine for micro-proteinuria.
  - Total cholesterol, HDL-C and LDL-C, triglycerides.
  - Liver function test.
  - Age-appropriate cancer screening
  - Consider the following only if clinically indicated
  - Uric acid.
  - Assessment of iron (total iron binding capacity, % saturation, serum ferritin, serum iron).
  - Vitamin B12 and vitamin D levels If evidence of malnutrition
  - Urinalysis.
  - Urine for micro-proteinuria.
  - Other specialized tests if indicated (e.g., dexamethasone suppression test for Cushing's)
  - Women with obesity and symptoms of polycystic ovary syndrome
  - Luteinizing hormone, follicle-stimulating hormone, total testosterone, SHBG, dehydroepiandrosterone, prolactin, and 17 hydroxyprogesterone levels.

Appendix 2: Edmonton Obesity Staging System

Stage	Description	Management Principles	Refer to

0	No apparent obesity-related risk factors (e.g., blood pressure, serum lipids, fasting glucose, etc. within normal range), no physical symptoms, no psychopathology, no functional limitations and/ or impairment of well-being.	• Identification of factors contributing to increased body weight.
		• Counseling to prevent further weight gain through behavioral measures, including:
		  ○ Healthy eating.
		  ○ Increased physical activity.	

1	Presence of:
	• Obesity-related subclinical risk factors, for example:
	  ○ Borderline hypertension.
	  ○ Impaired fasting glucose.
	  ○ Elevated liver enzymes.
	• Mild physical symptoms, for example:
	  ○ Dyspnea on moderate exertion.
	  ○ Occasional aches and pains.
	  ○ Fatigue.
	• Mild psychopathology.
	• Mild functional limitation.
	• Mild impairment of well-being.
		• Investigation of other (non-weight related) contributors to risk factors.
		• More intense behavioral interventions, including nutrition therapy, exercise, and psychological treatments to prevent further weight gain.
		• Monitoring risk factors and health status.
			Primary care

2	Presence of:
	• Established obesity-related chronic disease, for example:
	  ○ Hypertension
	  ○ T2DM
	  ○ Obstructive sleep apnea
	  ○ Osteoarthritis
	  ○ Anxiety disorder
		• Initiation of obesity treatments, including consideration of all psychological interventions, pharmacological and surgical treatment options
		• Close monitoring and management of comorbidities as indicated.	

	• Moderate limitations in activities of daily living. • Moderate impairment of well-being.		Specialist care

3	Presence of:
	• Established end-organ damage, for example:
	  ○ Myocardial infarction.
	  ○ Heart failure.
	  ○ Diabetic complications.
	  ○ Incapacitating osteoarthritis.
	• Significant psychopathology.
	• Significant impairment of well-being.
		• More intensive obesity treatment, including considerations of all psychological interventions, pharmacological and surgical treatment options
		• Aggressive management comorbidities as indicated.	

4	Presence of severe (potentially end-stage): • Disabilities from obesity-related chronic diseases (potentially end-stage). • Disabling psychopathology. • Functional limitations. • Impairment of well-being.	• Aggressive obesity management as deemed feasible	

Appendix 3: Cognitive behavioral therapy and mindfulness strategies

Strategy	Recommendations
General	• Manage sleep, time, and stress. • Find social support in the surrounding community.
Goal setting	• Set small achievable goals. • Set weekly behavioral goals (e.g., dietary and physical activity goals). • Use technology/applications to set goals and reminders. • Use a goal achievement reward system.
Self-monitoring	• Keep a daily record of the food consumed. • Keep a daily record of physical exercise. • Track weight status and changes.
Mindfulness	• Mindful eating: o Eat slowly and without distractions, such as watching TV or driving. o Listen to physical hunger cues. o Distinguish between true hunger and non-hunger (emotional) triggers for eating. o Experience the food/enjoy eating healthy food. • Mindful activities and exercising: o Choose any activity you enjoy (e.g., walking, yoga, stretching, folding clothes, washing dishes). Pay attention to all aspects of the activity and notice sensory aspects such as sight, sound, and physical sensation. o Perform the exercise properly for a specific muscle or group of muscles. o Perform the right amount of exercise.
Stimulus control	• Plan your meals. • Recognize and avoid triggers that prompt unplanned eating. • Carry appropriate food in portable containers. • Restrict places where eating is allowed. • Don’t skip meals.
Cognitive restructuring	• Identify and modify unhelpful thoughts or thinking patterns about body image, self-esteem, life, and future. • Accept that mistakes and relapses are part of the change process. • Learn problem-solving skills. • Join assertiveness training courses.

Appendix 4: Common obesity-related complications and comorbidities in adults, and criteria to qualify for Thiqa reimbursement.

	Requirement for reimbursement		
Comorbidity	**BMI 30.0-34.9**	**BMI 35.0-39.9**	**Comments**
Asthma	Only severe cases qualify	All cases qualify	Must be confirmed by pulmonologist
Arthropathy	Qualifies only if disabling	Qualifies only if disabling	
Cardiovascular & ischemic heart disease	All cases qualify	All cases qualify	
Chronic kidney disease	Does not qualify	Does not qualify	
Dyslipidaemia	Only severe cases qualify, as demonstrated by high lipid levels	All cases qualify	
Gastro-oesophageal reflux with or without esophagitis	Does not qualify	Does not qualify	
Hypertension	All cases qualify	All cases qualify	
Non-alcoholic fatty liver disease and steatohepatitis	All cases qualify	All cases qualify	
Obesity syndrome hypoventilation (Pickwickian syndrome)	All cases qualify	All cases qualify	
Obstructive sleep apnoea	Only severe cases qualify, as demonstrated by AHI > 30	All cases qualify	
PCOS with infertility	All cases qualify	All cases qualify	Must be confirmed by gynecologist
Urinary incontinence	Only severe cases qualify	Only severe cases qualify	Must be confirmed by urologist
Vascular disease	Only severe cases, e.g., cerebrovascular events, thrombosis, embolism or portal hypertension	All cases qualify	