

Lifestyle prescriptions for obesity treatment in primary care: a narrative review

Ji-Hye Jung¹, YangIm Hur^{2*}

¹Department of Family Medicine, Chung-Ang University College of Medicine, Seoul, Korea

²Department of Family Medicine, CHA University Bundang CHA Hospital, Seongnam, Korea

Purpose: This review aims to synthesize the most up-to-date evidence on effective lifestyle prescriptions for managing patients with obesity in the primary care setting.

Methods: A comprehensive literature search was conducted through June 2025 using major domestic and international databases, including PubMed, Google Scholar, and RISS, as well as the websites of relevant academic societies. The search strategy employed keywords such as “obesity,” “primary care,” “lifestyle intervention,” “diet,” “exercise,” and “behavioral therapy” in both English and Korean.

Results: Effective obesity management should be grounded in the new paradigm of adiposity-based chronic disease, which focuses on preventing and treating the medical complications associated with excessive fat accumulation. The essential components of a successful lifestyle prescription comprise 3 pillars: diet, exercise, and behavioral therapy. An individualized dietary plan that achieves an energy deficit of 500–750 kcal is fundamental. Exercise prescriptions should recommend a combination of aerobic and resistance training, along with strategies to minimize sedentary time. In behavioral therapy, high-intensity behavioral counseling, the 6A model (ask, assess, advise, agree, assist, arrange), self-monitoring, and cognitive-behavioral therapy techniques have all demonstrated efficacy.

Conclusion: Primary care physicians are not only capable but also uniquely positioned to lead long-term, patient-centered obesity management. Their comprehensive and integrative perspective makes them one of the most efficient and scalable resources in addressing the obesity epidemic.

Keywords: Behavioral therapy; Dietary therapy; Exercise therapy; Obesity; Primary care

Introduction

Obesity has emerged as a global public health crisis that extends far beyond issues of individual willpower. Projections suggest that by 2030, over half of the world’s adult population will be either overweight or obese [1]. South Korea mirrors this global trend, with the prevalence of adult obesity continuing to rise at an alarming rate [2]. Data from the 2019–2021 Korea National Health and Nutrition Examination Survey indicate a particularly high prevalence among young adults aged 19 to 39 (45.4% in men and 20.5% in women), serving as a critical warning for a likely future increase in the burden of cardiometabolic diseases [3].

Within this context, the medical understanding of obesity is undergoing a fundamental paradigm shift. Moving away from the

outdated notion of obesity as merely excess body weight, it is now recognized as a complex, multifactorial adiposity-based chronic disease (ABCD)—a classification officially endorsed by leading medical organizations, including the American Medical Association [4]. This conceptual shift reframes the management goal from short-term weight loss to long-term disease control, paralleling chronic conditions such as hypertension and diabetes [5,6].

Primary care physicians are uniquely positioned to drive this transformation. Their holistic understanding of the patient, continuity of care, and familiarity with medical and psychosocial histories allow them to view obesity not in isolation but as part of a broader network of cardiometabolic, behavioral, environmental, and psychosocial determinants [7]. Unlike subspecialists, who typically address obesity-related complications within their own

*Corresponding email: yangim.hur@gmail.com

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fields (e.g., endocrinology, cardiology, or orthopedics), primary care physicians can coordinate, assess, and tailor lifestyle interventions using a systems-based approach [8].

Furthermore, primary care offers the optimal environment for lifestyle counseling, sustained behavioral change, and early detection of weight-related comorbidities. The longitudinal therapeutic alliance between physician and patient enhances the feasibility of staged, patient-centered management strategies, including motivational interviewing, goal setting, progress monitoring, and, when indicated, pharmacologic escalation [9]. Thus, the integrative and comprehensive role of primary care in obesity management is not only complementary to specialist involvement but also forms the foundation for achieving sustainable long-term outcomes.

Objectives

The objective of this review is to systematically present an evidence-based framework for lifestyle interventions in managing patients with obesity in primary care settings. To achieve this, we analyze international guidelines and the most recent research on dietary therapy, physical activity, and behavioral modification. By integrating findings from studies conducted in Korean populations, this review aims to offer a practical, evidence-based framework tailored for clinical application in Korea.

Methods

Ethics statement

As this study is based entirely on a review of existing literature, neither institutional review board approval nor informed consent was required.

Study design

This work is a narrative review grounded in a comprehensive search of academic databases and relevant scholarly sources.

Information sources and search strategy

A literature search was performed through June 2025 across major domestic and international databases, including PubMed, Google Scholar, and RISS, as well as the official websites of relevant academic societies. The search strategy incorporated keywords such as “obesity,” “primary care,” “lifestyle intervention,” “diet,” “exercise,” and “behavioral therapy.”

Selection process

Inclusion criteria were restricted to KCI- or SCI(E)-indexed re-

view articles, randomized controlled trials, and major clinical practice guidelines addressing lifestyle interventions (diet, exercise, and behavioral therapy) for patients with obesity in the primary care setting. Studies limited to pharmacological or surgical interventions, case reports, and non-peer-reviewed materials were excluded.

Two independent researchers conducted the selection process, beginning with screening of titles and abstracts, followed by full-text review of eligible articles. Data extraction focused on diagnostic criteria, intervention components, treatment efficacy, considerations for specific populations, and barriers to implementation in clinical settings. To minimize bias, the review prioritized high-level evidence—such as systematic reviews and clinical practice guidelines from recognized academic societies—to ensure methodological rigor and qualitative validity.

Diagnosis and evaluation of obesity in primary care

Effective obesity management begins with accurate diagnosis and thorough clinical evaluation. Primary care physicians must employ standardized metrics to screen for and diagnose obesity while simultaneously assessing a patient’s overall health status and comorbid risk to establish the foundation for a personalized treatment plan.

The body mass index (BMI) remains the most fundamental screening tool and is recommended for all adults [10]. According to the World Health Organization, a BMI of 25.0–29.9 kg/m² is classified as overweight, and a BMI of 30.0 kg/m² or higher indicates obesity [5]. However, it is well recognized that East Asian populations, including Koreans, experience metabolic and cardiovascular complications at lower BMI thresholds than Western populations [6]. Accordingly, the Korean Society for the Study of Obesity (KSSO) adapted these standards for the domestic population, defining a BMI of 23.0–24.9 kg/m² as pre-obesity (overweight) and 25.0 kg/m² or higher as obesity, recommending earlier and more proactive management [6].

Waist circumference (WC) is another essential measure that should complement BMI assessment. For individuals with a BMI between 25 and 35 kg/m², WC measurement is particularly important for detecting abdominal obesity and cardiometabolic risk, which BMI alone may not adequately capture [5,6]. Abdominal obesity reflects visceral fat accumulation and is more closely associated with insulin resistance and related metabolic complications. The KSSO defines abdominal obesity as a WC ≥90 cm in men and ≥85 cm in women [6,11].

Recently, obesity care has shifted from a focus on BMI reduc-

tion toward evaluating the actual health impact of excessive adiposity. This shift is embodied in the ABCD model, which redefines treatment goals: rather than pursuing weight loss as an end in itself, the aim is to prevent and manage complications resulting from excess adiposity [4]. This reconceptualization has significant clinical implications. It reframes physician–patient communication from a superficial or judgmental directive (“You need to lose weight”) to a medically grounded, collaborative discussion (“Your excess weight has contributed to prediabetes and hypertension. Let’s work together to manage these conditions through lifestyle improvements”). Such reframing strengthens patient engagement and motivation [12].

Accordingly, primary care physicians should complement the diagnosis of obesity with a comprehensive evaluation for weight-related comorbidities, including prediabetes, type 2 diabetes, dyslipidemia, hypertension, nonalcoholic fatty liver disease, osteoarthritis, sleep apnea, and depression [5].

To formulate a personalized treatment plan, a comprehensive patient history is essential [5,12,13]: (1) Weight history: Age of obesity onset, maximum and minimum body weight, and patterns of weight change. History of weight loss attempts: Methods used, amount and duration of weight loss, and factors contributing to success or failure. (2) Dietary patterns: Current eating habits, frequency of problematic food intake, and alcohol consumption. (3) Physical activity patterns: Level of physical activity, duration of sedentary time, and methods and frequency of exercise. (4) Psychosocial factors: Stress levels, sleep duration and quality, quality of life, depressive symptoms, and social support systems. (5) Medication history: Use of medications that may affect body weight (e.g., certain antidepressants, steroids). (6) Patient’s perceptions and motivation: Perception of their own weight, readiness for change, and level of motivation.

This multidimensional assessment enables physicians to identify the root causes of obesity, recognize both barriers and facilitators to lifestyle change, and design an individualized, evidence-based intervention strategy optimized for long-term adherence and effectiveness.

Core elements of a successful lifestyle prescription in primary care

Dietary prescription

Dietary therapy is a fundamental component of obesity management [14]. In the primary care setting, an effective dietary prescription should focus on helping patients establish realistic, sustainable, and healthy eating habits rather than enforcing complex or trend-based diets. The foundational principle of all weight-loss

diets is to achieve a negative energy balance—where energy expenditure exceeds energy intake. Clinical guidelines generally recommend reducing energy intake by 500–750 kcal per day, leading to a gradual weight loss of approximately 0.5–0.7 kg per week [14–16]. This steady and moderate approach minimizes the risk of weight regain (the “yo-yo effect”) and increases the likelihood of long-term maintenance [16].

Numerous dietary models, such as low-fat, low-carbohydrate (<45% of total energy per day), high-protein (25%–35% of total energy per day, 1.2–1.9 g/kg) and Mediterranean diets, have been claimed to show efficacy for weight loss [16]. However, long-term, large-scale studies reveal minimal evidence that any single macronutrient composition is superior to others for sustained weight loss when total caloric intake is equally restricted [16,17]. Therefore, the most effective diet is the one that the patient can consistently adhere to, customized to their lifestyle, preferences, and cultural background. Nevertheless, certain dietary patterns may provide distinct advantages. For instance, the Mediterranean diet not only promotes weight loss but also confers additional cardiovascular benefits, including improved blood pressure and lipid profiles [18]. A low-carbohydrate diet may lead to more rapid initial weight loss, which can boost early patient motivation, though this difference typically diminishes after 1 year [16]. In a meta-analysis comparing low-fat (<30% of total energy intake) and low-carbohydrate diets, weight loss was significantly greater with the low-carbohydrate diet at 6–12 months (by about 1.3 kg), but after 12 months, the results between the 2 diets were comparable [16]. Ultra-low-carbohydrate diets (<10% of total energy per day) should only be implemented for short durations under medical supervision. Since carbohydrate restriction increases protein and fat intake, careful attention must be paid to fatty acid composition and the sources of dietary fats [16]. Thus, the role of primary care physicians is not to uniformly prescribe a single diet but to present evidence-based options and collaborate with patients to determine the most suitable, sustainable approach.

Realistic dietary prescription strategies for primary care

Given the constraints of limited consultation time and varying nutritional expertise, the primary care physician’s role more closely resembles that of a “health coach” than a “weight-loss specialist.” Accordingly, it is more effective to guide patients toward specific, actionable, and sustainable dietary modifications. Practical strategies include:

Improving meal quality: Encourage patients to reduce consumption of processed and fried foods, sugar-sweetened beverages, and refined carbohydrates (e.g., white bread, pastries), while increasing intake of vegetables, fruits, whole grains, low-fat dairy

products, and lean proteins [14,15].

Ensuring adequate protein intake: To prevent muscle loss commonly associated with weight reduction, advise adequate intake of high-quality protein (e.g., 1.2–1.6 g per kg of ideal body weight per day or 20–30 g of protein per meal) [16]. This helps preserve the basal metabolic rate and improve body composition [14,15]. For practical guidance, a 70-kg adult requiring 1.2 g/kg/day would need approximately 84 g of protein, equivalent to 4 cups of milk, 1.5 chicken breasts (100 g each), or 10 eggs. Protein-containing food portions providing 20 g of protein include: 100 g lean meat, 100 g skinned poultry (e.g., chicken or duck), 130 g fish (about 2 medium pieces), 140 g eggs (2 eggs), 200 g tofu (2/3 block), or 50 g black or soy beans (about 5 tablespoons) [16].

Portion control: Teach patients to regulate intake through smaller plates or visual cues for portion size estimation [19]. This is particularly important in the Korean context, where cultural practices such as company dinners or large-portion food delivery can contribute to excessive caloric intake.

Meal replacements: Calorie-controlled products, such as shakes, bars, or pre-packaged meals, can be helpful—especially during the initial treatment phase—by simplifying calorie tracking and improving adherence [20].

Time-restricted eating: Although the long-term efficacy of intermittent fasting beyond 1 year remains uncertain [16], time-restricted eating—which aligns food intake with the body’s circadian rhythm—has shown significant short-term benefits in reducing body weight and fat mass compared to traditional low-calorie diets, especially when combined with caloric restriction. The most effective regimen appears to be an 8-hour eating window beginning before 8 AM, emphasizing breakfast and minimizing late-night meals [16].

Recent studies have also highlighted the importance of hydration as a simple but potent adjunctive strategy. Kang et al. [21] in 2024, analyzing Korean adult data, found a significant inverse association between sufficient water intake and abdominal obesity, particularly among young adults aged 19–39 years. Therefore, practical recommendations such as “Drink a glass of water before each meal” can serve as cost-free, easily adoptable, and universally applicable behavioral reinforcements to any dietary plan [22].

Exercise and physical activity prescription

Exercise, together with diet, forms the twin pillars of obesity management. The goal of an exercise prescription should extend beyond calorie expenditure to include improving body composition, enhancing metabolic health, and actively counteracting the modern epidemic of sedentary behavior [23].

A key development in obesity research is the clear distinction

between physical inactivity and sedentarism [24,25]. It is now well established that even individuals who meet recommended physical activity levels may remain at risk for adverse health outcomes if they spend most of their day sitting [26]. Park et al. [2] in 2020 reported that the average daily sitting time among Koreans is approximately 8.3 hours—an alarming statistic. Importantly, sedentary behavior has been identified as an independent risk factor for all-cause mortality, cardiovascular disease, type 2 diabetes, and certain cancers, regardless of overall physical activity. Even individuals engaging in 60–75 minutes of moderate-intensity exercise per day remain at elevated risk if they sit for more than 8 hours daily [27]. These findings necessitate a paradigm shift in exercise prescription, which must now be structured along 2 complementary axes: (1) promoting regular physical activity and (2) reducing total sedentary time. Advice such as, “At work, stand and move for at least 5 minutes every hour,” has become as essential as “Go to the gym 3 times a week.” This integrated 24-hour approach better reflects the realities of modern health behavior and enhances preventive care in primary care practice [28].

Realistic exercise prescription strategies in primary care

Synergy with diet: Exercise alone is often insufficient to achieve clinically significant weight loss; however, when combined with dietary modification, it produces strong synergistic effects [29].

Aerobic exercise: Aerobic activity forms the foundation of any exercise prescription. Current guidelines recommend at least 150–300 minutes per week of moderate-intensity aerobic exercise (e.g., brisk walking, cycling) or 75 minutes per week of vigorous-intensity activity (e.g., running, spinning) [5].

Resistance training: Resistance exercise is essential for preserving muscle mass, maintaining basal metabolic rate, and improving body composition during weight reduction. Training targeting all major muscle groups should be performed 2 to 3 times per week [5]. The combination of aerobic and resistance training represents the optimal strategy for reducing body fat while maintaining lean mass [29,30].

In addition to structured exercise, modifying everyday movement patterns is equally critical. Reducing sedentary behavior yields substantial independent health benefits.

Breaking up sitting time: Advise patients to stand up, stretch, or walk briefly every 30 to 60 minutes [27]. This is particularly relevant in the Korean context, where prolonged working hours and heavy reliance on food delivery can contribute to extended sedentary periods.

Increasing daily activity: Encourage patients to integrate movement into daily routines, such as taking stairs instead of elevators, walking short distances, or standing while on the phone [31].

Environmental changes: Suggest environmental modifications that reduce sitting time, such as using height-adjustable desks, performing light stretches while watching television, or placing printers farther from desks to encourage movement [32].

Studies show that replacing just 30 minutes of sitting time per day with light physical activity can lower mortality risk, demonstrating how powerful this intervention can be [2,27].

Behavioral modification therapy prescription

If diet and exercise answer the question of what to do, behavioral therapy provides the answer to how to maintain it. Behavioral modification is a critical pillar of comprehensive obesity management, functioning as the bridge between knowledge and sustained action [10]. Numerous studies have shown that the effectiveness of behavioral therapy is directly proportional to its intensity—that is, the frequency and continuity of patient contact [33]. This counseling can be delivered through various effective modalities, including in-person, telephone, or digital platforms [8]. This reinforces the understanding that behavior change is not achieved through a single intervention but through continuous skill development, motivation, feedback, and accountability [34].

Realistic behavioral modification strategies for primary care

While providing intensive behavioral counseling may be challenging in busy primary care environments, its key principles can be effectively applied using concise, structured approaches.

The 6A's model: This evidence-based framework helps structure obesity counseling [5,12]: (1) Ask: for permission to discuss weight and explore the patient's concerns. (2) Assess: health risks, readiness for change, and barriers. (3) Advise: on clear, personalized behavior changes. (4) Agree: on realistic, achievable goals collaboratively with the patient. (5) Assist: in achieving goals by addressing barriers and building skills and confidence. (6) Arrange: for follow-up to provide ongoing support and adjust the plan.

Core behavioral strategies [33]: (1) Self-monitoring: Daily recording of food intake and physical activity, along with weekly weighing, is a strong predictor of success. A food logging app or a digital tool with a smartphone/wearable step count function can make this easier. (2) Goal-setting: Collaboratively set SMART goals (small, measurable, achievable, relevant, time-bound). (3) Stimulus control: Remove cues for unhealthy behaviors from the environment (e.g., not keeping processed snacks at home). (4) Problem-solving: Proactively identify potential barriers and brainstorm specific solutions.

Cognitive behavioral therapy: This therapeutic modality focuses on reshaping distorted cognitions about food, body image, and

self-worth, thereby facilitating healthier behaviors. Meta-analyses indicate that cognitive behavioral therapy is more effective than standard behavioral therapy for individuals with simple obesity, while behavioral therapy may be superior in cases of obesity accompanied by binge-eating disorder [35,36].

These strategies reaffirm that obesity management extends far beyond information delivery. It represents a process of behavioral skill acquisition—one that takes into account the patient's psychological state, environmental context, and habitual behaviors.

To enhance the clinical applicability of the preceding sections, Table 1 provides a concise summary of practical, evidence-based strategies for dietary, exercise, and behavioral prescriptions in the primary care setting.

The synergistic effect of a comprehensive approach

A strong consensus from clinical guidelines and systematic reviews indicates that a comprehensive, multi-component lifestyle program integrating diet, physical activity, and behavioral therapy is the most effective first-line treatment for obesity [5,6,12,14,15]. These components interact synergistically: dietary therapy induces weight loss through calorie deficit, physical activity sustains weight reduction while improving metabolic parameters, and behavioral therapy provides the psychological and environmental framework necessary for long-term adherence.

In obesity management, patient-centered care is not merely a slogan but a clinical imperative. Recent studies targeting specific Korean populations have provided clinical insights into why a 1-size-fits-all lifestyle prescription is prone to failure, underscoring the importance of a tailored approach [1,3,37]. Key related studies are summarized in Table 2.

Barriers in the primary care setting and future directions

Despite the robust evidence supporting lifestyle interventions, numerous practical barriers impede their implementation in real-world primary care settings. These challenges operate at multiple levels—physician, patient, and healthcare system—and collectively complicate the delivery of effective obesity management [5,7,36,37].

Physician-level barriers

Time constraints

Comprehensive obesity counseling is difficult to conduct

Table 1. Summary of key studies on lifestyle interventions in specific Korean populations

Component	Foundational principle	Specific guidelines	Evidence and clinical considerations
1. Diet	Creating an energy deficit and establishing long-term eating habits	• Calorie restriction: Recommend reducing energy intake by 500–750 kcal per day. • Improving meal quality: Encourage reducing processed foods, sugary drinks, refined carbohydrates, and increasing intake of vegetables, whole grains, and lean proteins. • Protein intake: Ensure sufficient intake of high-quality protein to prevent muscle loss. • Portion control: Use visual cues such as smaller plates (especially considering Korean cultural practices including company dinners and food delivery). • Adjunctive strategy: Recommend drinking a glass of water before each meal to increase satiety.	• Best diet: The one the patient can adhere to long-term. • Low-carbohydrate diet: May lead to faster initial weight loss, but the long-term effect is similar to that of a low-fat diet.
2. Exercise and physical activity	A 2-pronged approach: promoting physical activity and reducing sedentary time	• Aerobic exercise: At least 150–300 minutes of moderate-intensity activity or 75 minutes of vigorous-intensity activity per week. • Resistance training: Perform exercises targeting all major muscle groups 2–3 times per week. • Breaking up sitting time: Stand up and walk or stretch for at least 5 minutes every 30–60 minutes. • Increasing daily activity: Encourage using stairs, walking short distances, and increasing overall daily movement.	• Weight loss: Exercise alone is insufficient; it has a synergistic effect when combined with diet. • Sedentary time: Is an independent risk factor that must be managed separately from total exercise volume.
3. Behavioral therapy	Providing continuous skill training, motivation, feedback, and accountability for sustained change	• 6A's model: Utilize the framework: ask, assess, advise, agree, assist, arrange (for follow-up). • Self-monitoring: Daily recording of food logs and physical activity, along with weekly weighing. • Goal-setting: Collaboratively set SMART goals (specific, measurable, achievable, relevant, time-bound) with the patient. • Stimulus control: Remove cues for unhealthy behaviors from the environment.	• Intensity: Treatment effectiveness is proportional to the frequency of counseling. • Cognitive behavioral therapy: Helps in modifying distorted thoughts about food/weight and should be tailored based on the patient's psychological state.

during brief consultations that must also address other pressing medical issues.

Lack of training

Many physicians report insufficient education in nutrition, exercise prescription, and behavioral counseling, which undermines their confidence in managing obesity effectively.

Weight bias and stigma

Both implicit and explicit biases toward patients with obesity can negatively influence physician–patient communication and

treatment engagement.

Patient-level barriers

Low motivation and unrealistic expectations

Patients frequently experience low motivation due to repeated past failures or frustration when rapid weight loss does not occur.

Cost and accessibility

Healthy foods, fitness facilities, and structured weight-management programs can impose significant financial burdens.

Table 2. Summary of key studies on lifestyle interventions in specific Korean populations

Study journal	Study population	Key findings	Clinical implications
Song [1] (2025), Korean J Fam Med	Older adults with sarcopenic obesity	Sarcopenic obesity was more strongly associated with reduced stair-climbing ability and increased pain than simple obesity or sarcopenia alone, severely impairing quality of life.	A dual-goal approach is essential: reducing fat while preserving or strengthening muscle. Simple calorie restriction should be avoided. The prescription must include resistance training alongside aerobic exercise and a diet ensuring sufficient intake of high-quality protein.
Lee et al. [3] (2024), Korean J Fam Pract	Young adults (aged 19–39)	Common risk factors for both sexes included lower education and high stress. For men, marital status, low income, alcohol, and smoking were additional factors. For women, manual labor jobs or unemployment were additional risks.	Counseling must address underlying socioeconomic and lifestyle factors. The prescription should include education on stress management, the caloric impact of alcohol, and empathetic support that acknowledges the unique challenges young adults face in the Korean context.
Nah et al. [37] (2024), PLoS One	Patients with metabolic dysfunction-associated steatotic liver disease	Compared to a control group receiving generic information, the group with a tailored intervention showed significant reductions in liver fat and improvements in metabolic markers.	This demonstrates that a “personalized solution” considering individual habits, capabilities, and preferences increases treatment adherence and success. It highlights the importance of a multidisciplinary team approach involving dietitians and nurses.

Psychosocial factors

Chronic stress, emotional distress, and unsupportive social environments can hinder the adoption and maintenance of healthy habits.

Healthcare system-level barriers

Inadequate reimbursement

The lack of reimbursement for time-intensive obesity counseling discourages physicians from providing comprehensive care.

Fragmented care

The absence of coordinated referral systems linking physicians with dietitians, exercise physiologists, and psychologists limits access to integrated, holistic management.

These obstacles collectively illustrate a substantial “implementation gap” between evidence-based guidelines—which emphasize high-intensity, longitudinal interventions—and the practical constraints of routine primary care characterized by limited time and resources. Bridging this gap represents the foremost challenge to effective obesity management in real-world settings.

Leveraging digital health

Smartphone apps, wearable devices, and telehealth platforms can overcome time and space limitations to deliver scalable and cost-effective high-intensity behavioral therapy [6,34]. For instance, digital health models can use self-monitoring tools (e.g., food logs, step counters) to collect data, provide automated personalized feedback, and support hybrid care systems where patients receive ongoing remote guidance from dietitians or health

coaches between physician visits.

Enhancing education and training

Comprehensive obesity medicine education must be integrated into medical school curricula and residency training to ensure that future physicians are equipped with the necessary confidence and skills [38,39].

Policy and reimbursement reform

Establishing proper reimbursement systems for obesity counseling and team-based care is essential. In addition, public policies aimed at transforming obesogenic environments, such as urban designs that encourage physical activity, are vital for achieving sustained population-level impact [38,39].

In conclusion, the future of primary care-based obesity management should not involve asking physicians to “do more with less,” but rather a fundamental redesign of the care model itself. Physicians should serve not merely as treatment providers but as coordinators or quarterbacks who orchestrate multidisciplinary human and technological resources. Realizing this vision requires systemic reform across clinical workflows, education, and reimbursement structures.

Conclusion

Obesity is a multifactorial chronic disease that extends far beyond individual responsibility, and its growing prevalence represents a global public health emergency. Nevertheless, it remains a manageable condition within primary care when approached through systematic, evidence-based strategies. The most effective

management model is a sustained, multi-component intervention integrating dietary modification with appropriate caloric restriction, exercise combining aerobic and resistance training, and intensive behavioral counseling to promote long-term adherence. Importantly, reducing sedentary time should be recognized as an independent therapeutic objective, distinct from total exercise duration.

Within this framework, primary care physicians play an indispensable role in the long-term management of obesity and related chronic diseases. Their continuous, enduring relationships with patients enable early detection of weight-related comorbidities, consistent counseling, and individualized interventions that address both medical and psychosocial determinants of health. Through an integrated, patient-centered approach, primary care facilitates coordinated management of obesity alongside conditions such as diabetes, hypertension, and dyslipidemia. This continuity and comprehensiveness make primary care not only the most accessible but also the most efficient and sustainable foundation for effective obesity treatment.

ORCID

Ji-Hye Jung: <https://orcid.org/0000-0002-4436-1671>
YangIm Hur: <https://orcid.org/0000-0002-2633-9980>

Authors' contribution

Conceptualization: JHJ, YIH. Methodology: JHJ, YIH. Formal analysis/validation: JHJ, YIH. Project administration: JHJ, YIH. Writing—original draft: JHJ. Writing—review & editing: JHJ, YIH.

Conflict of interest

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Data availability

This study did not generate any new data. All sources for the information presented are cited and listed in the references.

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Supplementary materials

None.

References

1. Song GY. Health-related quality of life in older Koreans: a HINT-8-based cross-sectional analysis of obesity, sarcopenia, and sarcopenic obesity using the 2023 Korea National Health and Nutrition Examination Survey. *Korean J Fam Med* 2025; 46:195-203. <https://doi.org/10.4082/kjfm.25.0085>
2. Park JH, Moon JH, Kim HJ, Kong MH, Oh YH. Sedentary lifestyle: overview of updated evidence of potential health risks. *Korean J Fam Med* 2020;41:365-373. <https://doi.org/10.4082/kjfm.20.0165>
3. Lee YH, Kim SH. Prevalence of obesity, its comorbidities, and related risk factors among young Korean adults: using the Korea National Health and Nutrition Examination Survey (2019–2021). *Korean J Fam Pract* 2024;14:211-219. <https://doi.org/10.21215/kjfp.2024.14.4.211>
4. Mechanick JL, Hurley DL, Garvey WT. Adiposity-based chronic disease as a new diagnostic term: the American Association of Clinical Endocrinologists and American College of Endocrinology position statement. *Endocr Pract* 2017;23:372-378. <https://doi.org/10.4158/EP161688.PS>
5. Fitzpatrick SL, Wischenka D, Appelhans BM, Pbert L, Wang M, Wilson DK, Pagoto SL. An evidence-based guide for obesity treatment in primary care. *Am J Med* 2016;129:115. <https://doi.org/10.1016/j.amjmed.2015.07.015>
6. Haam JH, Kim BT, Kim EM, Kwon H, Kang JH, Park JH, Kim KK, Rhee SY, Kim YH, Lee KY. Diagnosis of obesity: 2022 update of Clinical Practice Guidelines for Obesity by the Korean Society for the Study of Obesity. *J Obes Metab Syndr* 2023;32:121-129. <https://doi.org/10.7570/jomes23031>
7. Kahan S, Manson JE. Obesity treatment, beyond the guidelines: practical suggestions for clinical practice. *JAMA* 2019;321:1349-1350. <https://doi.org/10.1001/jama.2019.2352>
8. Kushner RF, Ryan DH. Assessment and lifestyle management of patients with obesity: clinical recommendations from systematic reviews. *JAMA* 2014;312:943-952. <https://doi.org/10.1001/jama.2014.10432>
9. Tsai AG, Wadden TA. Treatment of obesity in primary care practice in the United States: a systematic review. *J Gen Intern Med* 2009;24:1073-1079. <https://doi.org/10.1007/s11606-009-1042-5>
10. Moyer VA. Screening for and management of obesity in adults: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med* 2012;157:373-378. <https://doi.org/10.7326/0003-4819-157-5-201209040-00475>
11. Kim JA, Choi CJ, Yum KS. Cut-off values of visceral fat area and

- waist circumference: diagnostic criteria for abdominal obesity in a Korean population. *J Korean Med Sci* 2006;21:1048-1053. <https://doi.org/10.3346/jkms.2006.21.6.1048>
12. Gallagher C, Corl A, Dietz WH. Weight can't wait: a guide to discussing obesity and organizing treatment in the primary care setting. *Obesity (Silver Spring)* 2021;29:821-824. <https://doi.org/10.1002/oby.23154>
13. Gormally J, Black S, Daston S, Rardin D. The assessment of binge eating severity among obese persons. *Addict Behav* 1982;7:47-55. [https://doi.org/10.1016/0306-4603\(82\)90024-7](https://doi.org/10.1016/0306-4603(82)90024-7)
14. Jensen MD, Ryan DH, Apovian CM, Ard JD, Comuzzie AG, Donato KA, Hu FB, Hubbard VS, Jakicic JM, Kushner RF, Loria CM, Millen BE, Nonas CA, Pi-Sunyer FX, Stevens J, Stevens VJ, Wadden TA, Wolfe BM, Yanovski SZ, Jordan HS, Kendall KA, Lux LJ, Mentor-Marcel R, Morgan LC, Trisolini MG, Wnek J, Anderson JL, Halperin JL, Albert NM, Bozkurt B, Brindis RG, Curtis LH, DeMets D, Hochman JS, Kovacs RJ, Ohman EM, Pressler SJ, Sellke FW, Shen WK, Smith SC, Tomaselli GF. 2013 AHA/ACC/TOS guideline for the management of overweight and obesity in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society. *Circulation* 2014;129:S102-S138. <https://doi.org/10.1161/01.cir.0000437739.71477.ee>
15. Jensen MD, Ryan DH, Apovian CM, Ard JD, Comuzzie AG, Donato KA, Hu FB, Hubbard VS, Jakicic JM, Kushner RF, Loria CM, Millen BE, Nonas CA, Pi-Sunyer FX, Stevens J, Stevens VJ, Wadden TA, Wolfe BM, Yanovski SZ. 2013 AHA/ACC/TOS guideline for the management of overweight and obesity in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society. *J Am Coll Cardiol* 2014;63:2985-3023. <https://doi.org/10.1016/j.jacc.2013.11.004>
16. Korean Society for the Study of Obesity. Obesity Clinical Treatment Guidelines 2024. Korean Society for the Study of Obesity; 2024.
17. Johnston BC, Kanters S, Bandayrel K, Wu P, Naji F, Siemieniuk RA, Ball GD, Busse JW, Thorlund K, Guyatt G, Jansen JP, Mills EJ. Comparison of weight loss among named diet programs in overweight and obese adults: a meta-analysis. *JAMA* 2014;312:923-933. <https://doi.org/10.1001/jama.2014.10397>
18. Estruch R, Ros E, Salas-Salvado J, Covas MI, Corella D, Aros F, Gomez-Gracia E, Ruiz-Gutierrez V, Fiol M, Lapetra J, Lamuela-Raventos RM, Serra-Majem L, Pinto X, Basora J, Munoz MA, Sorli JV, Martinez JA, Fito M, Gea A, Hernan MA, Martinez-Gonzalez MA. Primary prevention of cardiovascular disease with a mediterranean diet supplemented with extra-virgin olive oil or nuts. *N Engl J Med* 2018;378:e34. <https://doi.org/10.1056/NEJMoa1800389>
19. Hollands GJ, Shemilt I, Marteau TM, Jebb SA, Lewis HB, Wei Y, Higgins JP, Ogilvie D. Portion, package or tableware size for changing selection and consumption of food, alcohol and tobacco. *Cochrane Database Syst Rev* 2015;2015:CD011045. <https://doi.org/10.1002/14651858.CD011045.pub2>
20. Astbury NM, Piernas C, Hartmann-Boyce J, Lapworth S, Averyard P, Jebb SA. A systematic review and meta-analysis of the effectiveness of meal replacements for weight loss. *Obes Rev* 2019;20:S69-S87. <https://doi.org/10.1111/obr.12816>
21. Kang HK, Sung NJ. Correlation between usual source of care and medication adherence in patients with hypertension. *Korean J Fam Med* 2024;45:82-88. <https://doi.org/10.4082/kjfm.23.0125>
22. Corney RA, Sunderland C, James LJ. Immediate pre-meal water ingestion decreases voluntary food intake in lean young males. *Eur J Nutr* 2016;55:815-819. <https://doi.org/10.1007/s00394-015-0903-4>
23. Higgins JP, Higgins CL. Prescribing exercise to help your patients lose weight. *Cleve Clin J Med* 2016;83:141-150. <https://doi.org/10.3949/ccjm.83a.14139>
24. Han Y, Sung H, Choi Y, Kim YS. Trends in obesity, leisure-time physical activity, and sedentary behavior in Korean adults: Korea National Health and Nutritional Examinations Survey from 2014 to 2021. *PLoS One* 2024;19:e0296042. <https://doi.org/10.1371/journal.pone.0296042>
25. Tremblay MS, Aubert S, Barnes JD, Saunders TJ, Carson V, Latimer-Cheung AE, Chastin SF, Altenburg TM, Chinapaw MJ. Sedentary Behavior Research Network (SBRN): Terminology Consensus Project process and outcome. *Int J Behav Nutr Phys Act* 2017;14:75. <https://doi.org/10.1186/s12966-017-0525-8>
26. Hamilton MT, Healy GN, Dunstan DW, Zderic TW, Owen N. Too little exercise and too much sitting: inactivity physiology and the need for new recommendations on sedentary behavior. *Curr Cardiovasc Risk Rep* 2008;2:292-298. <https://doi.org/10.1007/s12170-008-0054-8>
27. Ekelund U, Steene-Johannessen J, Brown WJ, Fagerland MW, Owen N, Powell KE, Bauman A, Lee IM. Does physical activity attenuate, or even eliminate, the detrimental association of sitting time with mortality?: a harmonised meta-analysis of data from more than 1 million men and women. *Lancet* 2016;388:1302-1310. [https://doi.org/10.1016/S0140-6736\(16\)30370-1](https://doi.org/10.1016/S0140-6736(16)30370-1)
28. Ross R, Chaput JP, Giangregorio LM, Janssen I, Saunders TJ, Kho ME, Poitras VJ, Tomasone JR, El-Kotob R, McLaughlin EC, Duggan M, Carrier J, Carson V, Chastin SF, Latim-

- er-Cheung AE, Chulak-Bozzer T, Faulkner G, Flood SM, Gazendam MK, Healy GN, Katzmarzyk PT, Kennedy W, Lane KN, Lorbergs A, Maclaren K, Marr S, Powell KE, Rhodes RE, Ross-White A, Welsh F, Willumsen J, Tremblay MS. Canadian 24-hour movement guidelines for adults aged 18-64 years and adults aged 65 years or older: an integration of physical activity, sedentary behaviour, and sleep. *Appl Physiol Nutr Metab* 2020;45:S57-S102. <https://doi.org/10.1139/apnm-2020-0467>
29. Miller WC, Kocaja DM, Hamilton EJ. A meta-analysis of the past 25 years of weight loss research using diet, exercise or diet plus exercise intervention. *Int J Obes Relat Metab Disord* 1997;21:941-947. <https://doi.org/10.1038/sj.ijo.0800499>
30. Batrakoulis A, Jamurtas AZ, Metsios GS, Perivoliotis K, Liguori G, Feito Y, Riebe D, Thompson WR, Angelopoulos TJ, Krstrup P, Mohr M, Draganidis D, Poullos A, Fatouros IG. Comparative efficacy of 5 exercise types on cardiometabolic health in overweight and obese adults: a systematic review and network meta-analysis of 81 randomized controlled trials. *Circ Cardiovasc Qual Outcomes* 2022;15:e008243. <https://doi.org/10.1161/CIRCOUTCOMES.121.008243>
31. Ekblom-Bak E, Ekblom B, Vikstrom M, de Faire U, Hellenius ML. The importance of non-exercise physical activity for cardiovascular health and longevity. *Br J Sports Med* 2014;48:233-238. <https://doi.org/10.1136/bjsports-2012-092038>
32. Nguyen P, Le LK, Nguyen D, Gao L, Dunstan DW, Moodie M. The effectiveness of sedentary behaviour interventions on sitting time and screen time in children and adults: an umbrella review of systematic reviews. *Int J Behav Nutr Phys Act* 2020;17:117. <https://doi.org/10.1186/s12966-020-01009-3>
33. LeBlanc ES, Patnode CD, Webber EM, Redmond N, Rushkin M, O'Connor EA. Behavioral and pharmacotherapy weight loss interventions to prevent obesity-related morbidity and mortality in adults: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA* 2018;320:1172-1191. <https://doi.org/10.1001/jama.2018.7777>
34. Kouvari M, Karipidou M, Tsiampalis T, Mamalaki E, Poulime-neas D, Bathrellou E, Panagiotakos D, Yannakoulia M. Digital health interventions for weight management in children and adolescents: systematic review and meta-analysis. *J Med Internet Res* 2022;24:e30675. <https://doi.org/10.2196/30675>
35. Cha JY, Kim SY, Shin IS, Park YB, Lim YW. Comparison of the effects of cognitive behavioral therapy and behavioral treatment on obesity treatment by patient subtypes: a systematic review and meta-analysis. *J Korean Med Obes Res* 2020;20:178-192. <https://doi.org/10.15429/jkomor.2020.20.2.178>
36. Grilo CM, Masheb RM, Wilson GT, Gueorguieva R, White MA. Cognitive-behavioral therapy, behavioral weight loss, and sequential treatment for obese patients with binge-eating disorder: a randomized controlled trial. *J Consult Clin Psychol* 2011;79:675-685. <https://doi.org/10.1037/a0025049>
37. Nah EH, Choi YJ, Cho S, Park H, Kim S, Kwon E, Cho HI. Changes in nonalcoholic fatty liver disease and M2BPGi due to lifestyle intervention in primary healthcare. *PLoS One* 2024;19:e0298151. <https://doi.org/10.1371/journal.pone.0298151>
38. Bruggen F, Gellert P, Baer NR, Jodicke B, Brauchmann J, Wiegand S, Schenk L. Cooperation behaviour of primary care paediatricians: facilitators and barriers to multidisciplinary obesity management. *Eur J Public Health* 2020;30:484-491. <https://doi.org/10.1093/eurpub/ckz244>
39. Anand VV, Zhe EL, Chin YH, Lim WH, Goh RS, Lin C, Ng CH, Kong G, Tay PW, Devi K, Muthiah M, Singh V, Chu DT, Khoo CM, Chan MY, Dimitriadis GK, Foo R, Chew NW. Barriers and facilitators to engagement with a weight management intervention in Asian patients with overweight or obesity: a systematic review. *Endocr Pract* 2023;29:398-407. <https://doi.org/10.1016/j.eprac.2022.10.006>