



## Obesity

### 1- Epidemiology and determinants of obesity in China

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Review

### Abstract

Obesity has become a major public health issue in China. Overweight and obesity have increased rapidly in the past four decades, and the latest national prevalence estimates for 2015-19, based on Chinese criteria, were 6.8% for overweight and 3.6% for obesity in children younger than 6 years, 11.1% for overweight and 7.9% for obesity in children and adolescents aged 6-17 years, and 34.3% for overweight and 16.4% for obesity in adults ( $\geq 18$  years). Prevalence differed by sex, age group, and geographical location, but was substantial in all subpopulations. Strong evidence from prospective cohort studies has linked overweight and obesity to increased risks of major non communicable diseases and premature mortality in Chinese populations. The growing burden of overweight and obesity could be driven by economic developments, sociocultural norms, and policies that have shaped individual level risk factors for obesity through urbanisation, urban planning and built environments, and food systems and environments. Substantial changes in dietary patterns have occurred in China, with increased consumption of animal-source foods, refined grains, and highly processed, high-sugar, and high-fat foods, while physical activity levels in all major domains have decreased with increasing sedentary behaviours. The effects of dietary factors and physical inactivity intersect with other individual-level risk factors such as genetic susceptibility, psychosocial factors, obesogens, and in-utero and early-life exposures. In view of the scarcity of research around the individual and collective roles of these upstream and downstream factors, multidisciplinary and transdisciplinary studies are urgently needed to identify systemic approaches that target both the population-level determinants and individual level risk factors for obesity in China.

**Keywords**



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### Keywords Plus

[BODY-MASS INDEX](#) [FAT DISTRIBUTION](#) [NONCOMMUNICABLE DISEASES](#) [WAIST CIRCUMFERENCE](#) [PROSPECTIVE COHORT](#) [PHYSICAL-ACTIVITY](#) [METABOLIC RISK](#) [OVERWEIGHT](#) [CHILDREN](#) [ADOLESCENTS](#)



## Obesity

### 2- Once-Weekly Semaglutide in Adults with Overweight or Obesity

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**Abstract**

**BACKGROUND**

Obesity is a global health challenge with few pharmacologic options. Whether adults with obesity can achieve weight loss with once-weekly semaglutide at a dose of 2.4 mg as an adjunct to lifestyle intervention has not been confirmed.

**METHODS**

In this double-blind trial, we enrolled 1961 adults with a body-mass index (the weight in kilograms divided by the square of the height in meters) of 30 or greater ( $\geq 27$  in persons with  $\geq 1$  weight-related coexisting condition), who did not have diabetes, and randomly assigned them, in a 2:1 ratio, to 68 weeks of treatment with once-weekly subcutaneous semaglutide (at a dose of 2.4 mg) or placebo, plus lifestyle intervention. The coprimary end points were the percentage change in body weight and weight reduction of at least 5%. The primary estimand (a precise description of the treatment effect reflecting the objective of the clinical trial) assessed effects regardless of treatment discontinuation or rescue interventions.

**RESULTS**



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The mean change in body weight from baseline to week 68 was -14.9% in the semaglutide group as compared with -2.4% with placebo, for an estimated treatment difference of -12.4 percentage points (95% confidence interval [CI], -13.4 to -11.5;  $P < 0.001$ ). More participants in the semaglutide group than in the placebo group achieved weight reductions of 5% or more (1047 participants [86.4%] vs. 182 [31.5%]), 10% or more (838 [69.1%] vs. 69 [12.0%]), and 15% or more (612 [50.5%] vs. 28 [4.9%]) at week 68 ( $P < 0.001$  for all three comparisons of odds). The change in body weight from baseline to week 68 was -15.3 kg in the semaglutide group as compared with -2.6 kg in the placebo group (estimated treatment difference, -12.7 kg; 95% CI, -13.7 to -11.7). Participants who received semaglutide had a greater improvement with respect to cardiometabolic risk factors and a greater increase in participant-reported physical functioning from baseline than those who received placebo. Nausea and diarrhea were the most common adverse events with semaglutide; they were typically transient and mild-to-moderate in severity and subsided with time. More participants in the semaglutide group than in the placebo group discontinued treatment owing to gastrointestinal events (59 [4.5%] vs. 5 [0.8%]).

### CONCLUSIONS

In participants with overweight or obesity, 2.4 mg of semaglutide once weekly plus lifestyle intervention was associated with sustained, clinically relevant reduction in body weight.

### Keywords

### Keywords Plus

[WEIGHT-LOSSBARIATRIC SURGERYCARDIOVASCULAR RISKINDIVIDUALSCHALLENGESGALLSTONESOUTCOMESTRIALSMSG](#)



## Obesity

### 3- Obesity and Cardiovascular Disease: A Scientific Statement From the American Heart Association

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#### Abstract

The global obesity epidemic is well established, with increases in obesity prevalence for most countries since the 1980s. Obesity contributes directly to incident cardiovascular risk factors, including dyslipidemia, type 2 diabetes, hypertension, and sleep disorders. Obesity also leads to the development of cardiovascular disease and cardiovascular disease mortality independently of other cardiovascular risk factors. More recent data highlight abdominal obesity, as determined by waist circumference, as a cardiovascular disease risk marker that is independent of body mass index. There have also been significant advances in imaging modalities for characterizing body composition, including visceral adiposity. Studies that quantify fat depots, including ectopic fat, support excess visceral adiposity as an independent indicator of poor cardiovascular outcomes. Lifestyle modification and subsequent weight loss improve both metabolic syndrome and associated systemic inflammation and endothelial dysfunction. However, clinical trials of medical weight loss have not demonstrated a reduction in coronary



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artery disease rates. In contrast, prospective studies comparing patients undergoing bariatric surgery with nonsurgical patients with obesity have shown reduced coronary artery disease risk with surgery. In this statement, we summarize the impact of obesity on the diagnosis, clinical management, and outcomes of atherosclerotic cardiovascular disease, heart failure, and arrhythmias, especially sudden cardiac death and atrial fibrillation. In particular, we examine the influence of obesity on noninvasive and invasive diagnostic procedures for coronary artery disease. Moreover, we review the impact of obesity on cardiac function and outcomes related to heart failure with reduced and preserved ejection fraction. Finally, we describe the effects of lifestyle and surgical weight loss interventions on outcomes related to coronary artery disease, heart failure, and atrial fibrillation.

### Keywords

#### Author Keywords

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## Obesity

### 4- Obesity, eating behavior and physical activity during COVID-19 lockdown: A study of UK adults

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#### Abstract

Eating, physical activity and other weight-related lifestyle behaviors may have been impacted by the COVID-19 crisis and people with obesity may be disproportionately affected. We examined weight-related behaviors and weight management barriers among UK adults during the COVID-19 social lockdown. During April-May of the 2020 COVID-19 social lockdown, UK adults (N = 2002) completed an online survey including measures relating to physical activity, diet quality, overeating and how mental/physical health had been affected by lockdown. Participants also reported on perceived changes in weight-related behaviors and whether they had experienced barriers to weight management, compared to before the lockdown. A large number of participants reported negative changes in eating and physical activity behavior (e.g. 56% reported snacking more frequently) and experiencing barriers to weight management (e.g. problems with motivation and control around food) compared to before lockdown. These trends were particularly pronounced among participants with higher BMI. During lockdown, higher BMI was associated with lower levels of physical activity and diet quality, and a greater re-ported frequency of overeating. Reporting a decline in mental health because of the COVID-19 crisis was not associated with higher BMI, but was predictive of greater overeating and lower physical activity in lockdown. The COVID-19 crisis may have had a disproportionately large and negative influence on weight-related behaviors among adults with higher BMI.

#### Keywords



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### Author Keywords

[COVID-19](#)[Physical activity](#)[Eating behavior](#)[Obesity](#)[Weight management](#)





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### 5- Anti-Inflammatory Nutrients and Obesity-Associated Metabolic-Inflammation: State of the Art and Future Direction

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**Abstract**

Growing evidence supports the hypothesis that dietary factors may play a role in systemic low-grade chronic inflammation. Summary evidence from randomized controlled trials has shown substantial effects on biomarkers of inflammation following the adoption of plant-based diets (including, but not limited to, the Mediterranean diet), while consistent findings have been reported for higher intakes of whole grains, fruits, and vegetables and positive trends observed for the consumption of legumes, pulses, nuts, and olive oil. Among animal food groups, dairy products have been shown to have the best benefits on biomarkers of inflammation, while red meat and egg have been shown to have neutral effects. The present review provides an overview of the mechanisms underlying the relation between dietary factors and immune system, with a focus on specific macronutrient and non-nutrient phytochemicals (polyphenols) and low-grade inflammation. Substantial differences within each macronutrient group may explain the conflicting results obtained regarding foods high in saturated fats and carbohydrates, underlying the role of specific subtypes of molecules (i.e., short-chain fatty acids or fiber vs. long chain fatty acids or free added sugars) when exploring the relation between diet and inflammation, as well as



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the importance of the food matrix and the commixture of foods in the context of whole dietary patterns. Dietary polyphenols and oligopeptides have been hypothesized to exert several functions, including the regulation of the inflammatory response and effects on the immune system. Overall, evidence suggests that dietary factors may affect the immune system regardless of obesity-related inflammation.

### Keywords

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[SATURATED FATTY-ACID](#)[SC-REACTIVE PROTEIN](#)[ADIPOSE-TISSUE INFLAMMATION](#)[FRUCTOSE CORN SYRUP](#)[CARDIOVASCULAR-DISEASE](#)[BIOACTIVE PEPTIDE](#)[ENERGY-METABOLISM](#)[LIPID RAFT](#)[DIETARY MARKERS](#)



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### 6- Individuals with obesity and COVID-19: A global perspective on the epidemiology and biological relationships

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#### Abstract

The linkage of individuals with obesity and COVID-19 is controversial and lacks systematic reviews. After a systematic search of the Chinese and English language literature on COVID-19, 75 studies were used to conduct a series of meta-analyses on the relationship of individuals with obesity-COVID-19 over the full spectrum from risk to mortality. A systematic review of the mechanistic pathways for COVID-19 and individuals with obesity is presented. Pooled analysis show individuals with obesity were more at risk for COVID-19 positive, >46.0% higher (OR = 1.46; 95% CI, 1.30-1.65;p< 0.0001); for hospitalization, 113% higher (OR = 2.13; 95% CI, 1.74-2.60;p< 0.0001); for ICU admission, 74% higher (OR = 1.74; 95% CI, 1.46-2.08); and for mortality, 48% increase in deaths (OR = 1.48; 95% CI, 1.22-1.80;p< 0.001). Mechanistic pathways for individuals with obesity are presented in depth for factors linked with COVID-19 risk, severity and their potential for diminished therapeutic and prophylactic treatments among these individuals. Individuals with obesity are linked with large significant increases in morbidity and mortality from COVID-19. There are many mechanisms that jointly explain this impact. A major concern is that vaccines will be less effective for the individuals with obesity.

#### Keywords



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## Obesity

### 7- The Multifunctional Role of Herbal Products in the Management of Diabetes and Obesity: A Comprehensive Review

By:

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**Abstract**

Obesity and diabetes are the most demanding health problems today, and their prevalence, as well as comorbidities, is on the rise all over the world. As time goes on, both are becoming big issues that have a big impact on people's lives. Diabetes is a metabolic and endocrine illness set apart by hyperglycemia and glucose narrow-mindedness because of insulin opposition. Heftiness is a typical, complex, and developing overall wellbeing worry that has for quite some time been connected to significant medical issues in individuals, all things considered. Because of the wide variety and low adverse effects, herbal products are an important hotspot for drug development. Synthetic compounds are not structurally diverse and lack drug-likeness properties. Thus, it is basic to keep on exploring herbal products as possible wellsprings of novel drugs. We conducted this review of the literature by searching Scopus, Science Direct, Elsevier, PubMed, and Web of Science databases. From 1990 until October 2021, research reports, review articles, and original research articles in English are presented. It provides top to bottom data and an examination of plant-inferred compounds that might be utilized against heftiness or potentially hostile to diabetes treatments. Our expanded comprehension of the systems of activity of phytogetic compounds, as an extra examination, could prompt the advancement of remedial methodologies for metabolic diseases. In



## Obesity

clinical trials, a huge number of these food kinds or restorative plants, as well as their bioactive compounds, have been shown to be beneficial in the treatment of obesity.

### Keywords

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## Obesity

### 8- The Multifunctional Role of Herbal Products in the Management of Diabetes and Obesity: A Comprehensive Review

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**Abstract**

Obesity and diabetes are the most demanding health problems today, and their prevalence, as well as comorbidities, is on the rise all over the world. As time goes on, both are becoming big issues that have a big impact on people's lives. Diabetes is a metabolic and endocrine illness set apart by hyperglycemia and glucose narrow-mindedness because of insulin opposition. Heftiness is a typical, complex, and developing overall wellbeing worry that has for quite some time been connected to significant medical issues in individuals, all things considered. Because of the wide variety and low adverse effects, herbal products are an important hotspot for drug development. Synthetic compounds are not structurally diverse and lack drug-likeness properties. Thus, it is basic to keep on exploring herbal products as possible wellsprings of novel drugs. We conducted this review of the literature by searching Scopus, Science Direct, Elsevier, PubMed, and Web of Science databases. From 1990 until October 2021, research reports, review articles, and original research articles in English are presented. It provides top to bottom data and an examination of plant-inferred compounds that might be utilized against heftiness or potentially hostile to diabetes treatments. Our expanded comprehension of the systems of activity of phyto-genic compounds, as an extra examination, could prompt the advancement of remedial methodologies for metabolic diseases. In



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### 9- Effects of COVID-19 Lockdown on Lifestyle Behaviors in Children with Obesity Living in Verona, Italy: A Longitudinal Study

By:

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**Abstract**

**Objective** The aim of this study was to test the hypothesis that youths with obesity, when removed from structured school activities and confined to their homes during the coronavirus disease 2019 pandemic, will display unfavorable trends in lifestyle behaviors. **Methods** The sample included 41 children and adolescents with obesity participating in a longitudinal observational study located in Verona, Italy. Lifestyle information including diet, activity, and sleep behaviors was collected at baseline and 3 weeks into the national lockdown during which home confinement was mandatory. Changes in outcomes over the two study time points were evaluated for significance using paired t tests. **Results** There were no changes in reported vegetable intake; fruit intake increased ( $P = 0.055$ ) during the lockdown. By contrast, potato chip, red meat, and sugary drink intakes increased significantly during the lockdown ( $P$  value range, 0.005 to  $< 0.001$ ). Time spent in sports activities decreased by 2.30 (SD 4.60) h/wk ( $P = 0.003$ ), and sleep time increased by 0.65 (SD 1.29) h/d ( $P = 0.003$ ). Screen time increased by 4.85 (SD 2.40) h/d ( $P < 0.001$ ). **Conclusions** Recognizing these adverse collateral effects of the coronavirus disease 2019 pandemic lockdown is critical in avoiding depreciation of weight control efforts among youths afflicted with excess



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adiposity. Depending on duration, these untoward lockdown effects may have a lasting impact on a child's or adolescent's adult adiposity level.

### Keywords

### Keywords Plus

[SCHOOL](#)



## Obesity

### 10- The Role of Diet Quality in Mediating the Association between Ultra-Processed Food Intake, Obesity and Health-Related Outcomes: A Review of Prospective Cohort Studies

**By:**

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**Abstract**

Prospective cohort studies show that higher intakes of ultra-processed food (UPF) increase the risk of obesity and obesity-related outcomes, including cardiovascular disease, cancer and type 2 diabetes. Whether ultra-processing itself is detrimental, or whether UPFs just have a lower nutritional quality, is debated. Higher UPF intakes are inversely associated with fruit, vegetables, legumes and seafood consumption. Therefore, the association between UPFs and poor health could simply be from excess nutrient intake or from a less healthful dietary pattern. If so, adjustment for dietary quality or pattern should explain or greatly reduce the size of the significant associations between UPFs and health-related outcomes. Here, we provide an overview of the literature and by using a novel approach, review the relative impact of adjusting for diet quality/patterns on the reported associations between UPF intake and health-related outcomes in prospective cohort studies. We find that the majority of the associations between UPFs, obesity and health-related outcomes remain significant and unchanged in magnitude after adjustment for diet quality or pattern. Our findings suggest that the adverse consequences of UPFs are independent of dietary quality or pattern, questioning the utility of reformulation to mitigate against the obesity pandemic and wider negative health outcomes of UPFs.

**Keywords**

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[obesity](#)[diet](#)[ultra-processed food](#)[NOVA classification](#)[diet quality](#)[dietary pattern](#)[non-communicable disease](#)



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## Obesity

### 11- Effect of Subcutaneous Semaglutide vs Placebo as an Adjunct to Intensive Behavioral Therapy on Body Weight in Adults With Overweight or Obesity The STEP 3 Randomized Clinical Trial

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**Abstract**

**IMPORTANCE**

Weight loss improves cardiometabolic risk factors in people with overweight or obesity. Intensive lifestyle intervention and pharmacotherapy are the most effective noninvasive weight loss approaches.

**OBJECTIVE**

To compare the effects of once-weekly subcutaneous semaglutide, 2.4 mg vs placebo for weight management as an adjunct to intensive behavioral therapy with initial low-calorie diet in adults with overweight or obesity.

**DESIGN, SETTING, AND PARTICIPANTS** Randomized, double-blind, parallel-group, 68-week, phase 3a study (STEP 3) conducted at 41 sites in the US from August 2018 to April 2020 in adults without diabetes (N = 611) and with either overweight (body mass index  $\geq 27$ ) plus at least 1 comorbidity or obesity (body mass index  $\geq 30$ ).



## Obesity

**INTERVENTIONS** Participants were randomized (2:1) to semaglutide, 2.4 mg (n = 407) or placebo (n = 204), both combined with a low-calorie diet for the first 8 weeks and intensive behavioral therapy (ie, 30 counseling visits) during 68 weeks.

**MAIN OUTCOMES AND MEASURES** The co-primary end points were percentage change in body weight and the loss of 5% or more of baseline weight by week 68. Confirmatory secondary end points included losses of at least 10% or 15% of baseline weight.

**RESULTS** Of 611 randomized participants (495 women [81.0%], mean age 46 years [SD, 13], body weight 105.8 kg [SD, 22.9], and body mass index 38.0 [SD, 6.7]), 567 (92.8%) completed the trial, and 505 (82.7%) were receiving treatment at trial end. At week 68, the estimated mean body weight change from baseline was -16.0% for semaglutide vs -5.7% for placebo (difference, -10.3 percentage points [95% CI, -12.0 to -8.6];  $P < .001$ ). More participants treated with semaglutide vs placebo lost at least 5% of baseline body weight (86.6% vs 47.6%, respectively;  $P < .001$ ). A higher proportion of participants in the semaglutide vs placebo group achieved weight losses of at least 10% or 15% (75.3% vs 27.0% and 55.8% vs 13.2%, respectively;  $P < .001$ ). Gastrointestinal adverse events were more frequent with semaglutide (82.8%) vs placebo (63.2%). Treatment was discontinued owing to these events in 3.4% of semaglutide participants vs 0% of placebo participants.

**CONCLUSIONS AND RELEVANCE** Among adults with overweight or obesity, once-weekly subcutaneous semaglutide compared with placebo, used as an adjunct to intensive behavioral therapy and initial low-calorie diet, resulted in significantly greater weight loss during 68 weeks. Further research is needed to assess the durability of these findings.

### Keywords

### Keywords Plus

[LIFE-STYLE INTERVENTIONONCE-WEEKLY SEMAGLUTIDELIRAGLUTIDE 3.0 MGPRACTICE GUIDELINESAMERICAN-COLLEGEASSOCIATIONMANAGEMENTEFFICACY56-WEEKSAFETY](#)