

APPETITE SUPPRESSANTS

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Primary Disciplinary Field(s): Pharmacology, Medicine (Obesity Management), Psychology

1. Core Definition

Appetite suppressants, also formally recognized as **anorectants** or anorexigenic agents, constitute a specialized class of pharmacological agents utilized primarily to assist in the control of **body weight**. These drugs function by reducing the subjective sensation of hunger or by promoting early satiety (a feeling of fullness), thereby facilitating a necessary reduction in caloric intake. Their mechanism involves interaction with neurochemical pathways within the central nervous system, particularly those regulating appetite and energy balance in the hypothalamus. While they are a tool in the clinical management of obesity, their application is generally restricted to individuals for whom standard dietary and lifestyle interventions have proven insufficient, and they are typically prescribed for short-term use.

2. Classification and Mechanisms of Action

The category of appetite suppressants is heterogeneous, encompassing several chemical classes with varying mechanisms of action. Historically, these agents have fallen into two major groups: sympathomimetic amines and serotonergic agents. The sympathomimetic agents, which include amphetamines and related drugs like phentermine, function primarily as central nervous system **stimulants**. These compounds increase the release or inhibit the reuptake of catecholamines (such as norepinephrine and dopamine), leading to increased energy expenditure and a potent suppression of appetite.

Another significant group, although largely withdrawn due to safety concerns, comprised the serotonergic agonists, notably fenfluramine and dexfenfluramine. These drugs modulated the activity of serotonin, a neurotransmitter deeply implicated in satiety signaling. Additionally, compounds like sibutramine, which acted as a combined serotonin and norepinephrine reuptake inhibitor, represented a distinct pharmacological pathway for achieving appetite suppression. The choice of agent depends heavily on the patient's specific health profile and the relative safety data associated with the drug's long-term use.

3. Historical Use and Key Examples

The use of pharmacological appetite control agents gained significant traction in the latter half of the 20th century. Early reliance on basic amphetamines demonstrated their efficacy in promoting rapid weight loss, though this was often accompanied by issues related to tolerance, dependence, and cardiovascular side effects. A critical period in the history of these drugs involved the

widespread prescription of combination therapy, specifically the co-administration of phentermine with either fenfluramine or dexfenfluramine, a regimen colloquially known as "**phen-fen.**"

The "phen-fen" combination was initially lauded for its potent effect on short-term weight reduction, capitalizing on the separate mechanisms of the stimulant (phentermine) and the satiety agent (fenfluramine/dexfenfluramine). However, the subsequent revelation of severe, life-threatening side effects associated with the serotonergic component led to major regulatory upheaval. This combination serves as a stark example of the inherent risks when complex neurological systems are targeted for weight management.

4. Efficacy and Behavioral Context

Empirical evidence consistently demonstrates that appetite suppressants can facilitate meaningful **short-term weight loss** when used appropriately. By easing the discomfort of hunger and making adherence to a hypocaloric diet more manageable, these agents provide a crucial initial boost for patients struggling with morbid obesity. This initial weight reduction often provides the motivation necessary for patients to commit to more profound lifestyle changes.

Crucially, however, there is a lack of robust empirical evidence confirming that these agents, when administered alone, produce durable **long-term weight reduction**. The pharmacological intervention addresses a physiological symptom (hunger) but fails to resolve the underlying behavioral, psychological, and environmental determinants of obesity. Therefore, medical guidelines strictly emphasize that for weight loss to be maintained over extended periods, appetite suppressants must be employed in conjunction with a structured and comprehensive **behavioral management program**. This typically includes nutritional education, increased physical activity, and cognitive-behavioral strategies aimed at modifying eating habits.

5. Health Risks and Regulatory Actions

The most severe challenge and criticism leveled against certain classes of appetite suppressants revolve around serious associated health risks. Most notably, the use of fenfluramine and dexfenfluramine--particularly when combined with phentermine--was definitively associated with severe and potentially fatal **heart-valve defects**, known medically as cardiac valvulopathy. This condition results from damage to the heart valves, severely compromising cardiac function.

Due to the overwhelming evidence of this risk, regulatory agencies worldwide, including the U.S. Food and Drug Administration (FDA), mandated the immediate removal of fenfluramine and dexfenfluramine from the pharmaceutical market in the late 1990s. This event profoundly influenced the subsequent development and regulatory oversight of all new pharmacological treatments for obesity, emphasizing the necessity for meticulous investigation of long-term cardiovascular safety before market authorization is granted. While some suppressants remain in

use (like phentermine, typically restricted to short durations), their prescription requires careful risk assessment and monitoring.

Further Reading

[Phentermine \(Wikipedia\)](#)

[Appetite Suppressant \(Wikipedia\)](#)

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