

## Mini-Review of Obesity, Etiology Progresses and Different Therapeutics

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Received: April 26, 2019; Published: May 29, 2019

### Abstract

Obesity (body mass index BMI > 30 Kg/m) prevalence has been a major health-care problem globally (30 - 35% adults worldwide). Although many different types of therapeutic measurements have been developed, long-term body-weight control is still un-predicable. This article gives us different information of biomedical pathology and treatments for human obesity-including pathological, genetics, pharmacological, environmental, dietary control and life-style.

**Keywords:** Obesity; Diabetes; Endocrinology; Drug Develop; Surgery; Clinical Trial

### Backgrounds

Obesity is an undesired phenotypic feature that causes a lot of troubles among susceptible population [1-4]. However, the outcome of long-term body-weight control is still un-predicable. It is difficult to quickly take effects by existing health-care efforts and short-length of targeted programs due to insufficiency of therapeutic knowledge of genomic, epigenomic, proteomic, metabolomic interactions and mechanisms. Many different types of therapeutic measures have been developed for this metabolic syndrome-some of these measures are even very expensive (like gastric surgery) or harmful for patients (like dietary control or excretion accelerating) [1-22]. Overall, advancing understanding of human pathology and therapy for obesity will improve clinical trials in the future.

### Disease situation

Approximately 30 - 35% global adult population is obesity (body mass index > 30 Kg/m) [5]. The co-morbidity of obese persons with many other diseases, such as depression, diabetes, cardiovascular risks and osteoporosis is frequent in the clinic [1-23]. In addition, obese youngsters often meet with many episodes of embarrassments in their life-times-visible or invisible [1,2]. From common obese sufferers, losing weight is their first choice and addictive with.

Generally speaking, purposed weight loss is a great deal of uncomfortable and economic burden [5]. Only a small proportion of obese population achieves long-term of effectiveness in the clinic. Many people, especially without seeking formal medication regain their weight after therapeutic discontinuation. As a result, most obese people struggle with this problem in a long period of times. To solve with this therapeutic setback, pathological or therapeutic study and knowledge accumulation is indispensable.

**Morbidity factors**

Human obesity is caused by a series of environmental-host interactions-including:

**They are behavior factors**

- Overfeed
- Sedentary (less physical exercises)
- Alcoholic
- Laziness

**Etiopathology factors**

- Gastro-intestinal abnormal [1-4].
- Psychiatric burden [1-4].
- Hormonal or blood glucose level escalations [10].
- Chemical or drug-induced [11].
- Tumor-induced (endocranial tumors).
- Physiological change (neural-appetite axis) [12,13].
- Inheritance (genetic/epigenetic) [18-21].

**Major counteractive measures**

Options for human obese managements are multiple and complex. Different categories of obese managements are enlisted and referenced [22-29]; they include

- Diet-control.
- Consumption of more fresh fruits, vegetable and seafood [2-4]-promotion of healthy food and reduce consumption of fast-food and high sweet drinks.
- Life-style adjustments (exercises, Yoga, athletics, ball-games and meditation) [2-4]-different modality and intensity.
- Surgery (gastric bariatric surgery) [22,23]-mixture with benefits and side-effective.
- Chemical drugs [24]-a lot of drugs.
- Biotherapy [25]-promising yet imperfect.
- Herbal drugs [26-28].
- Psychiatric intervention (cognitive, behavior and emotional).
- Therapeutic combinations [29-32]-different options and ways of thinking.

Therapeutic categories	Specific options
Surgery	Gastric bariatric surgery Brain surgery (if available) And so on
Dietary	Higher-content of fibers in foods Fresh vegetable Reduce sweet and dessert consumptions Beverage selections and control Sea food consumptions And so on

Drug developments	Chemical drugs Bio-agents Herbal therapy And so on
Clinical therapy	Drug utility Gene therapy Drug combination Personalized medicine Precision medicines And so on
Others	Life-style/behavior adjustment Biotherapy (genomic editing, genetic circuits and others) Community supports Modern diagnostics Psychoanalysis and interventions And so on

Table 1: Major patterns of clinical therapeutics [3].

**Patho-therapeutic relations**

Obese therapeutics and managements should target on human inflammatory, glucose homeostasis, etio-pathological pathways and energy disturbance/imbalance. Commonest therapeutics includes life-style, energy homeostasis and lipo-dystrophy adjustments and targets. Different therapeutics should be targeted against different obese origins (etio-patho-therapeutic associations). This ultimate goal of pharmaceutical company and clinical doctors will be widely pursuit.

Therapeutic combinations are also very useful for many refractory and chronic diseases, including obese patients. These kinds of therapeutic paradigms are very useful for many other diseases [29-32]. Similar work in clinical study and validity is inevitable for human obese treatments in the future. Certainly, life-style adjustments are good assistance to chemical drugs, natural drugs, surgery, physical devises and many other therapeutic targets, such as leptin, insulin and many others.

Generally, patients in different pathological conditions need different types of therapy (Table 2). Our recommendation is based on previous articles and general pharmacological and medical knowledge.

Body mass index	Blood glucose level (mM/L)	Therapeutic options (proposed)
28 < BMI < 30	Normal	Less sedentary work
> 30	Normal	Food and life-style adjustment
35 > BMI > 30	6.2 - 8.0	First-line chemical drug + life-style
35 > BMI > 30	8.0 - 12.0	Drug (chemical or insulin) + life-style
> 35	> 8.0	Gastric surgery + Drugs

Table 2: Suggestion for therapeutics against different categories of obese and diabetic conditions [4].

**Conclusion**

Many therapeutics are helpful for managing overweight and even obesity in the clinic. We need to promote these researches in the near future. Some medical breakthroughs for weight-control and complications will be future trends.

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**Volume 3 Issue 3 June 2019**

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