

# Slimming Pills and Supplements. Are they safe?

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Why would you take slimming pills/supplements? – Quick fix and easy fix?

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# Orlistat

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Proven to reduce weight 2-3 kg/year (WITH lifestyle intervention)

Mechanism of action: Lipase inhibitor

Blocks breakdown of triglycerides to Free Fatty Acids

so that triglyceride (fat) is not absorbed... expelled through faeces

Side effects:

Deficiency of fat-soluble vitamins(A,D,E and K)

increase risk of renal injury – due to ?Increase oxalate absorption

Oily Spotting, Flatus with Discharge, Fecal Urgency, Fatty/Oily Stool, Increased Defecation, Fecal Incontinence

# Phentermine

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Appetite suppressant (and a stimulant)

Its parent compound is amphetamine

May help in first 4 weeks of treatment

CI -Pregnancy or nursing, advanced cardiovascular disease, uncontrolled hypertension, hyperthyroidism, glaucoma, agitated states, history of drug abuse, MAOIs

Side effects: Insomnia, elevation in heart rate, dry mouth, taste alterations, dizziness, tremors, headache, diarrhea, constipation, vomiting, gastro-intestinal distress, anxiety, and restlessness.

# Sibutramine

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Side effects: dry mouth, paradoxical increased appetite, constipation, dizziness, drowsiness

Increase risk of heart attacks and strokes

Substantially increase blood pressure and heart rate (Cochrane systemic Review, 2004)

Mental symptoms – excitement, restlessness, confusion, depression

# metformin

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Decreased perceived hunger

But, mainly used in diabetes with obesity

Side effects – gastric discomfort, vit B12 malabsorption, lactic acidosis

A meta-analysis supported safety and efficacy of metformin on weight loss reduction for diabetic patients age above 60 (Solymar et al, 2018)

# Review on pharmacotherapy for weight loss

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Long-term Drug Treatment for Obesity: A Systematic and Clinical Review. (Yanovski & Yanovski, 2014)

- Orlistat, lorcaserine (serotonin agonist receptor) and phentermine/topiramate-ER – 3 to 9% weight loss
- Phenteramine – appetite depressant; topiramite – anti-epileptic a/w weight loss
- Stressed on “with lifestyle intervention”

# Guideline on pharmacotherapy in obesity

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The Endocrine Society recommends that diet, exercise and behavioral modifications be part of all obesity management approaches.

Other tools such as weight loss medications and bariatric surgery can be combined with behavioral changes to reduce food intake and increase physical activity.

Patients who have been unable to successfully lose weight and maintain a goal weight may be candidates for prescription medication if they meet the criteria on the drug's label.

(Apovian et al,2016)



# Selective slimming supplements

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1. chromium may help to reduce a person's weight by decreasing the amount of fat in the body. Chromium is also said to suppress the appetite and stimulate the production of heat by the body, thus increasing energy expenditure. This may contribute to weight loss.

2. Caffein – increase metabolism by 3-11%

increase fat burning by 29%

Caffein may help weight loss. The effects of caffeine intake on weight loss: a systematic review and dos-response meta-analysis of randomized controlled trials. (Tabriz et al, 2018)

Side effects: In some people, high amounts of caffeine can cause anxiety, insomnia, jitteriness, irritability, nausea, diarrhea and other symptoms. Caffeine is also addictive and can reduce the quality of your sleep.

# Selective slimming supplements

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## 3. Green tea

induces a small, statistically non-significant weight loss in overweight or obese adults.

Weight loss not likely to be clinically important.

Green tea had no significant effect on the maintenance of weight loss. Cochrane Review – Jurgens et al, 2012

Green tea extract tend to cause an acute hepatitis-like injury – Navaro et al, 2017

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#### 4. Glucomannan

a type of fiber found in the roots of the elephant yam, also called konjac.

Absorbs water and retain in gut – makes you feel full

Side effects: It can cause bloating, flatulence and soft stools, and can interfere with some oral medications if taken at the same time.

well tolerated but did not promote weight loss or significantly alter body composition, hunger/fullness, or lipid and glucose parameters (Keithley et al, 2013)

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## 5. Garcinia cambogia

a small, green fruit, shaped like a pumpkin.

contains hydroxycitric acid (HCA)

? Serotonin → reduce craving

Effectiveness - ? Mixed result

Even though garcinia cambogia may cause weight loss, the effects are so small that they probably won't even be noticeable.

# Review on supplements

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Pittler and Ernst, 2004 - chitosan, chromium picolinate, *Ephedra sinica*, *Garcinia cambogia*, glucomannan, guar gum, hydroxy-methylbutyrate, plantago psyllium, pyruvate, yerba maté, and yohimbe.

- encouraging data but no strong evidence of effectiveness
- Maybe e.sinica? but increased risk of adverse event
- **Conclusions:** The evidence is not convincing. None of the reviewed dietary supplements can be recommended for over-the-counter use.

# Supplements being 'herbal'

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Categorised as food product.. Less stringent control by the authority

Over-the-counter items

No need to inform their doctor

And the doctor seldom enquire the patients

Possible contamination during preparation?

# Reported cases of...

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Death due to cardiac and cerebrovascular accidents in young, otherwise healthy patients probably due to ephedra

nephrolithiasis

Hepatotoxic/acute liver injury

Supplements containing aristolochic acid – uroethial carcinoma abd renal injury

Acute kidney failure/acute tubular necrosis

Hepatic fibrosis

Ansari & Omar, 2017

# summary

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Some slimming pills are safe, some are not

But generally, no strong evidence to recommend use; and adverse effect may be really bad

Not an alternative to lifestyle changes



Slimming pills are not alternatives to lifestyle changes

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# Supplements vs Natural - Eat rainbow

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Thank You

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