

One of the primary benefits of Synephrine HCL in pre-workout supplements is its ability to increase metabolic rate. By boosting your metabolism, your body can efficiently burn more calories during your workout, helping you achieve your fitness goals faster. In addition to its metabolic effects, Synephrine HCL also acts as an appetite suppressant.



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## Make Your Own Homemade Pre-Workout Supplement - Muscle & Strength



It is mainly used in dietary supplements such as pre workouts or burners, but it also has medicinal properties. Today it is a popular alternative to the forbidden product Ephedrine. They both have the same properties and they act in the same way, except that Synephrine is less powerful than Ephedrine.

### Synephrine HCL Dosage and Benefits | Pre-Workout Buzz



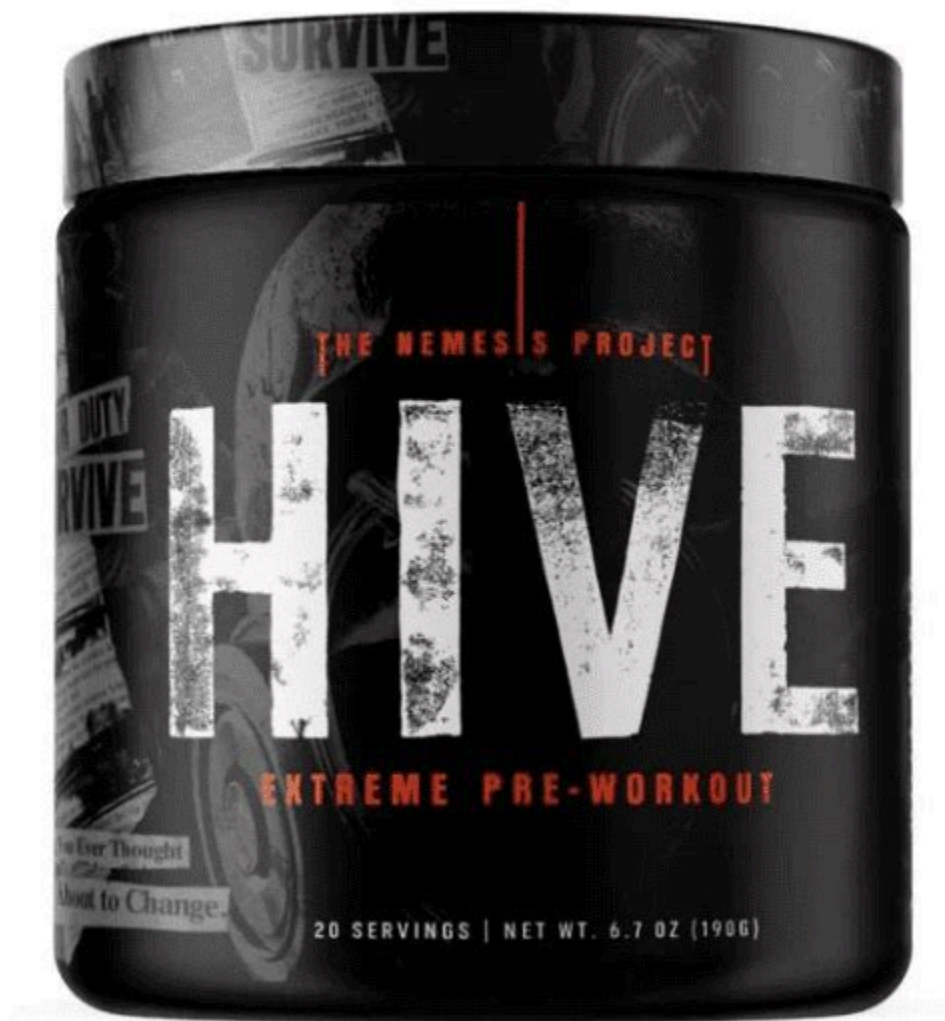
Pre Workout Reviews. Best Pre Workout 2023; Strongest Pre Workout; Best Stim Free Pre Workout; Best Pre-Workout for Weight Loss; . Synephrine HCl - 65 mg. Synephrine is a well-researched ingredient that has been shown to aid in weight loss. "In general, bitter orange extract alone .

## Best Pre-Workouts Of 2024: Expert Reviewed - Forbes Health



SYNEPHRINE HCl 25mg \*\* 50mg \*\* PARADOXINE® GRAINS OF PARADISE (STD. TO 12. 5% 6-PARADOL) 12. 5mg \*\* 25mg \*\* "PRO GBB™ (GAMMA-BUTYROBETAINE ETHYL ESTER HCl)" . We recommend taking no more than 2 scoops of la madrina pre-workout per day. You should test your tolerance to stimulants by starting with ½ a scoop of La Madrina and building up from .

## Hive V2 Pre Workout Review (2023) - Lift Vault



These supplements are designed to provide you with the energy, focus and endurance you need to maximize your workout potential, burn more calories and pursue your weight loss goals. When choosing.



## LA MADRINA - Fat Burning Pre Workout - Swole AF Nutrition



Here is my pre-workout: 1. 25mgs of yohimbine hcl 2. 50 mgs of synephrine 3. 6 grams of citrulline malate 4. 4 grams beta alanine 5. 200gms caffeine 6. 2 grams of betaine 7. 2 grams of l-carnitine l-tartrate 8. 750mgs of agmatine 9. 10mgs of biperine 10 900mgs of turmeric extract

## Synephrine: Uses, Side Effects, Interactions, Dosage and Supplements



1. Pre-Kaged - Kaged The Best Pre-Workout with Creatine

# Review of Case Reports on Adverse Events Related to Pre-workout .

Cardiovascular Toxicology (2023) 23:1–9  
https://doi.org/10.1007/s12012-022-09777-z



## Review of Case Reports on Adverse Events Related to Pre-workout Supplements Containing Synephrine

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### Abstract

The use of pre-workout supplements has become increasingly popular, including the use of supplements containing synephrine. Synephrine might stimulate weight loss and improve sports performance by its proposed adrenergic properties. However, with its increasing popularity, numerous cases of adverse events related to synephrine use have been reported. This study provides a comprehensive overview and analysis of current case reports related to the supplemental use of synephrine. The scientific literature on cases of adverse events related to synephrine intake was collected through August 2021 using Pubmed and Google Scholar and subsequently reviewed and analysed. We obtained 30 case reports describing a total of 35 patients who suffered from medical complaints following use of synephrine-containing supplements. The patients most often presented with chest pain, palpitations, syncope and dizziness. Commonly raised diagnoses were ischaemic heart disease, cardiac arrhythmias and cerebrovascular disease. Five patients were left disabled or remained on medication at last follow-up. We here show an association between the use of pre-workout supplements containing synephrine and adverse events, mainly related to the cardiovascular system. However, we cannot exclude a role of possible confounding factors such as caffeine. Thus, the use of pre-workout supplements containing synephrine may lead to serious adverse health events, and therefore, caution is needed.

**Keywords** Synephrine · Pre-workout · Ischaemic heart disease · Arrhythmias · Caffeine · Case reports

### Introduction

Over the past two decades, the use of pre-workout supplements has increased, mainly for the purpose of weight loss and/or improved sports performance. However, this use is not without risk, with supplements containing ephedrine alkaloids, also called ephedra, as an important example [1]. In 2004, the Food and Drug Administration

(FDA) prohibited the sale of products containing ephedra in response to hundreds of cases of adverse health effects related to its use, including severe cardiovascular and neurologic events [1, 2]. Since then, the use of alternatives for ephedra increased, mainly by substituting ephedra for synephrine, which has a similar structure to ephedrine [3].

Synephrine is a sympathetic stimulator and its isomer p-synephrine (Fig. 1) is present in high concentrations in *Citrus aurantium* (bitter orange) and other citrus fruits [4]. M-synephrine, a more potent isomer of synephrine, does not naturally occur in *C. aurantium*, but is sometimes added to *C. aurantium* supplements [5]. The desired effect of synephrine is caused by stimulation of beta-3 adrenoceptors and thereby increasing lipolysis and metabolic rate [6]. However, synephrine intake might also lead to cardiovascular effects by the stimulation of additional adrenergic receptors (beta-1 and beta-2) [5]. It is thought that the combination of synephrine and caffeine may lead to synergistic effects in fat burning, but might also increase the risk of cardiovascular adverse effects [7].

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M. L. L. de Jonge, L. C. Kieviet, M. Sierts and L. B. Egberink have contributed equally.

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By Cory Kessler Updated On January 04, 2023. A pre-workout is a supplement you take 15-30 minutes before a workout to boost your energy, muscular endurance, and decrease your muscle recovery time. Pre-workouts come in many forms and flavors, but in general, they share common ingredients like high amounts of stimulants, vitamins, amino acids .

### 3 Potential Benefits of Synephrine + Safety & New Research



Studies show that Synephrine, when taken pre-workout can increase fat oxidation. That is most likely why you'll find Synephrine in many thermogenics. . Caffeine and Yohimbine HCl. Side Effects of Synephrine. Synephrine when combined with Caffeine might increase the risk for high blood pressure, fainting, heart attack, stroke, and other .



# Effects of *p*-Synephrine during Exercise: A Brief Narrative Review



Communication

## Effects of *p*-Synephrine during Exercise: A Brief Narrative Review

Carlos Ruiz-Moreno <sup>1</sup>, Juan Del Coso <sup>2,\*</sup>, Verónica Giráldez-Costas <sup>1</sup>, Jaime González-García <sup>1</sup> and Jorge Gutiérrez-Hellín <sup>3</sup>

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**Abstract:** The *p*-synephrine is the principal phytochemical found in bitter orange (*Citrus aurantium*). This substance is widely included in dietary supplements for weight loss/body fat reduction due to its potential benefits of increasing fat oxidation. For years, *p*-synephrine-containing dietary supplements have been marketed without proper knowledge of their true effectiveness to enhance fat utilization, especially when combined with exercise. However, the effects of *p*-synephrine on fat oxidation during exercise have been investigated in the last few years. The aim of the current discussion is to summarize the evidence on the effects of *p*-synephrine intake on fat oxidation and performance during exercise. Previous investigations have demonstrated that the acute intake of *p*-synephrine does not modify running sprint performance, jumping capacity, or aerobic capacity. However, the acute intake of *p*-synephrine, in a dose of 2–3 mg/kg of body mass, has been effective to enhance the rate of fat oxidation during incremental and continuous exercise. This effect has been observed in a range of exercise workloads between 30% and 80% of peak oxygen uptake ( $\dot{V}O_{2peak}$ ). The *p*-synephrine has the ability to increase the maximal rate of fat oxidation during exercise of increasing intensity without affecting the workload at which maximal fat oxidation is obtained (Fatmax). The effect of *p*-synephrine on fat oxidation is normally accompanied by a concomitant reduction of carbohydrate utilization during exercise, without modifying the energy expended during exercise. The shifting in substrate oxidation is obtained without any effect on heart rate during exercise and the prevalence of adverse effects is negligible. Thus, the acute use of *p*-synephrine, or *p*-synephrine-containing products, might offer some benefits for those individuals seeking higher fat utilization during exercise at low to moderate intensities. However, more research is still necessary to determine if the effect of *p*-synephrine on fat oxidation during exercise is maintained with chronic ingestion, in order to ascertain the utility of this substance in conjunction with exercise programs to produce an effective body fat/weight loss reduction.

**Keywords:** alkaloids; body composition; carbohydrate sparing; weight loss; exercise



**Citation:** Ruiz-Moreno, C.; Del Coso, J.; Giráldez-Costas, V.; González-García, J.; Gutiérrez-Hellín, J. Effects of *p*-Synephrine during Exercise: A Brief Narrative Review. *Nutrients* **2021**, *13*, 233. <https://doi.org/10.3390/nu13010233>

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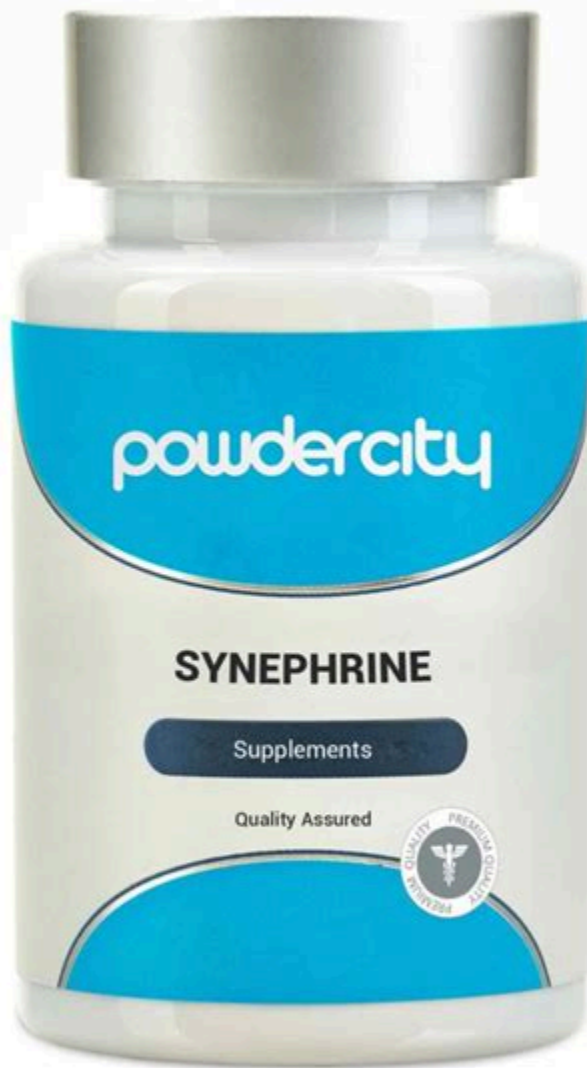
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### 1. Introduction

The *p*-synephrine (4-[1-hydroxy-2-(methylamino)ethyl]phenol) is a phenylethylamine derivative present in the fruits of several trees from *Rutaceae* family such as Bitter Orange (*Citrus aurantium*), Seville Orange, Sour Orange, Green Orange, Zhi Shi, and Kijitsu. Additionally, this phytochemical can be found in many other citrus species such as Nova tangerines and Marr's sweet oranges [1]. In its natural state, *p*-synephrine is the main phytochemical in most of these fruits, and it is present in the range of 0.10–0.35% in fruits of *Citrus aurantium* and in the range of 3.00–3.08% in dry extracts of this fruit [2]. However, the amount of *p*-synephrine can be artificially increased by concentrating the extract of natural products, and *p*-synephrine may be in a concentration of up to 19% in some commercially available dietary supplements [3]. This allows the intake of moderate

The use of pre-workout supplements has become increasingly popular, including the use of supplements containing synephrine. Synephrine might stimulate weight loss and improve sports performance by its proposed adrenergic properties. However, with its increasing popularity, numerous cases of adverse events related to synephrine use have been reported. This study provides a comprehensive .

## **Boost Your Performance with Synephrine HCL Pre Workout: Unleash Your .**



We all know that caffeine is the undisputed king of pre workout stimulants. It boosts energy, motivation, and focus, and it's also been shown to improve performance as well as fat loss. That's why caffeine is the foundation of the best pre workout supplements. However, the best hardcore pre workouts include other stimulants to amplify the energy and motivation-boosting powers of caffeine .

## Increasing Energy, Focus, And Fat Loss With A Key Stimulant



Legion Pulse Natural Pre-Workout. \$1.52 price per serving. 100% all natural, lab tested pre-workout. Naturally sweetened and flavored with healthy, plant-based sweeteners and flavors. Backed by .

## Synephrine Ingredient Fact Sheet | Muscle & Strength



Based on the analyzed clinical studies, synephrine tends to raise blood pressure and heart rate, and there is no evidence that synephrine can facilitate weight loss. Further studies are needed to confirm evidence of its safety and efficacy. Keywords: p-synephrine, meta-analysis, obesity, food supplements, weight loss Go to: 1. Introduction



# The Safety and Efficacy of *Citrus aurantium* (Bitter Orange) Extracts .

Article

## The Safety and Efficacy of *Citrus aurantium* (Bitter Orange) Extracts and *p*-Synephrine: A Systematic Review and Meta-Analysis

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**Abstract:** Synephrine has been used to promote weight loss; however, its safety and efficacy have not been fully established. The goals of our study were to give an overview of the safety and efficacy of *p*-synephrine, to systematically evaluate its efficacy regarding weight loss and to assess its safety, focusing on its cardiovascular side effects in a meta-analysis. PubMed, the Cochrane Library, Web of Science and Embase were searched for relevant studies. Only placebo-controlled, human clinical trials with synephrine intervention were included in the meta-analysis. The meta-analysis was reported according to the PRISMA guidelines using the PICOS format and taking into account the CONSORT recommendations. Altogether, 18 articles were included in the meta-analysis. Both systolic and diastolic blood pressure (DBP) increased significantly after prolonged use (6.37 mmHg, 95% CI: 1.02–11.72,  $p = 0.02$  and 4.33 mmHg, 95% CI: 0.48–8.18,  $p = 0.03$ , respectively). The weight loss in the synephrine group was non-significant after prolonged treatment, and it did not influence body composition parameters. Based on the analyzed clinical studies, synephrine tends to raise blood pressure and heart rate, and there is no evidence that synephrine can facilitate weight loss. Further studies are needed to confirm evidence of its safety and efficacy.

**Keywords:** *p*-synephrine; meta-analysis; obesity; food supplements; weight loss



Citation: Kocz, D.; Tóth, B.; Bahar, M.A.; Roza, O.; Csopor, D. The Safety and Efficacy of *Citrus aurantium* (Bitter Orange) Extracts and *p*-Synephrine: A Systematic Review and Meta-Analysis. *Nutrients* **2022**, *14*, 4019. <https://doi.org/10.3390/nu14194019>

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### 1. Introduction

The global increase in obesity is strongly connected to modifiable lifestyle factors, including sedentary lifestyle and diet [1]. Obesity is associated with serious health problems and related comorbidities [2,3], and even modest weight loss can result in improved systolic and diastolic blood pressure and blood cholesterol levels [4]. Increased physical activity, a low-calorie diet and the monitoring of body weight can facilitate weight loss in the long term [5].

Dietary supplements are easily available alternatives to medicines; however, data supporting their efficacy are usually scarce, and in some cases, their safety is also questionable [6]. Because of safety concerns, several Active Pharmaceutical Ingredients (APIs), that were considered as effective compounds to support weight loss are no longer available on the market. *p*-Synephrine, a protoalkaloid extracted from the immature fruit or peel of bitter orange (*Citrus × aurantium* L.), is widely used in weight loss and sports performance products [7], yet its efficacy and safety has not been fully established [8].

Synephrine exists in three different positional isomeric forms (ortho, meta and para) [9] (Figure 1). It is generally accepted that only *para*-synephrine (*p*-synephrine) can be found in bitter orange fruits [10–12]. Food supplements can contain *meta* (*m*-) and *p*-synephrine, which are both alpha-adrenergic agonists ( $\alpha$ -agonists), while the *m*-isoform is the most potent on alpha-1-adrenoreceptors ( $\alpha_1$ -adrenergic receptors) [13]. *Ortho*-synephrine

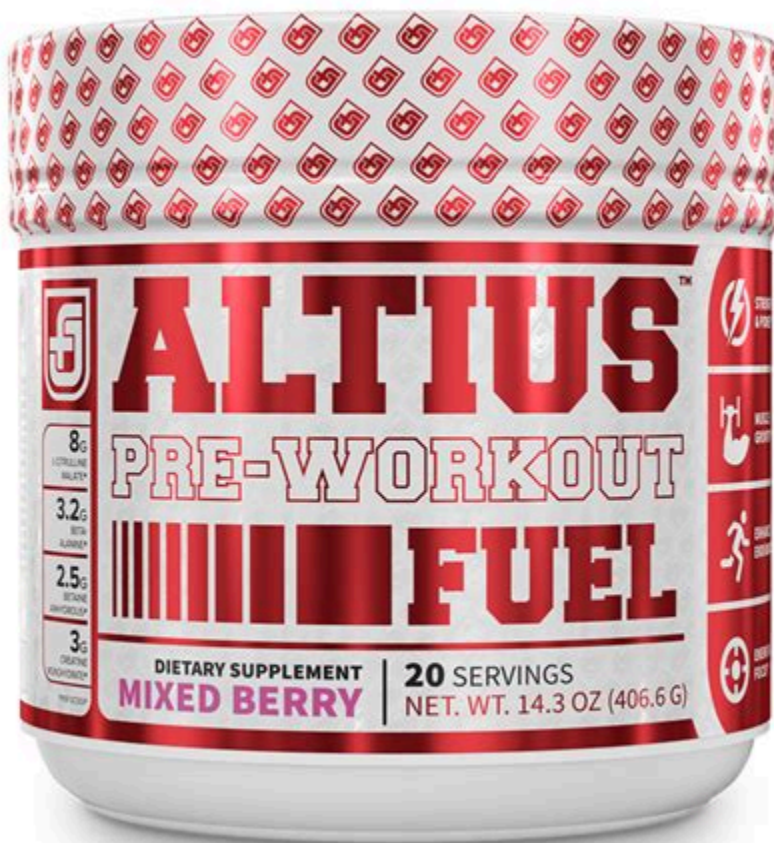
This pre workout is guaranteed to make you sweat and give you long lasting energy with the tri-blend of caffeine, totaling 400mg. BOOST . SYNEPHRINE HCl 25mg \*\* 50mg \*\* PARADOXINE® GRAINS OF PARADISE (STD. TO 12. 5% 6-PARADOL) 12. 5mg \*\* 25mg .

## Synephrine: Uses, Side Effects, Interactions, Dosage and Supplements



Methyl Synephrine HCl - 10mg; Piperine 95% - 10mg; . Yohimibine HCl - 2. 5mg; Pre Workout Effects. The pre-workout is a feel-good, laser-focused, and high-energy pre-workout. This product's stimulant formula hits just right. It has the strength regular pre-workout users desire, but it won't leave you anxious or too stimed out.

## The 8 Best Pre-Workout Supplements with Creatine - Lift Vault



Synephrine, when taken before an exercise, has been shown to boost fat oxidation. That's probably why Synephrine is found in so many thermogenics. It may also be included in pre-workout supplements, since at least one research has shown that it helps with muscular endurance (alone and when combined with caffeine).

## Inhuman Pre-Workout Review (2023) - Lift Vault



A study of 17 people given p-synephrine before exercise showed that people given p-synephrine burned more fat as opposed to carbohydrates during exercise. No effect on heart rate was observed [ 10 ]. Another study of 23 people given a combination of caffeine and bitter orange extract (*C. aurantium*) showed higher amounts of fat being burned even .



## Bucked Up Pre-Workout Review 2023 | ACTIVE



Bitter orange (synephrine) is considered a banned substance by the National Collegiate Athletic Association (NCAA). Don't confuse bitter orange with other orange species such as sweet orange.

## Fyre AF - Fat Burning Pre Workout - Swole AF Nutrition



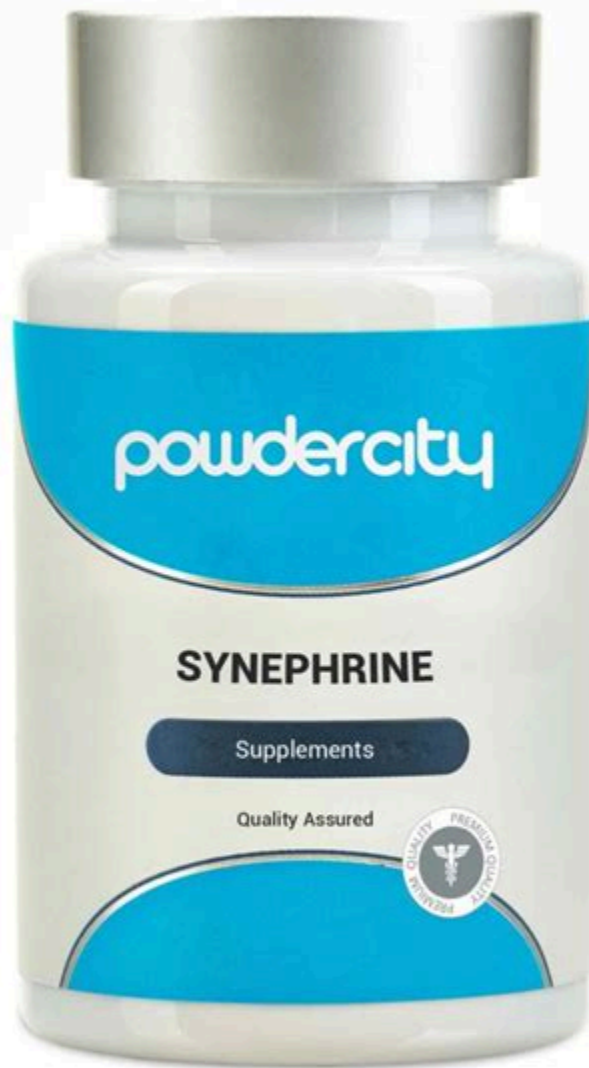
Bitter orange (*Citrus aurantium*) is a small tree that bears fruit sometimes used in small amounts in food as a flavorant and often used in pre-workout and weight-loss supplements. Synephrine and octopamine are compounds found in bitter orange. Although both synephrine and octopamine occur naturally in the *Citrus aurantium* plant, they also can be made in a laboratory.

## The Best Pre-Workout Supplements for Weight Loss (2023)



[1] Synephrine's molecular structure is similar to ephedrine, arguably the most effective fat burning ingredients. Ephedrine can no longer be sold as a dietary supplement (and neither can methysynephrine), which is why synephrine is the next best substitute.

## Synephrine | (Synephrine Hydrochloride) - Dosage, Science



It is common to see synephrine in weight loss pills and pre-workout supplements. [9] [25] Side Effects. While healthy individuals are unlikely to experience such side effects, pre-existing medical conditions, like diabetes, high blood pressure or heart arrhythmia, may put you at higher risk if you decide to take synephrine. [27]



Synephrine hcl | Pure synephrine powder | sportpoeders. nl



The p -synephrine (4- [1-hydroxy-2- (methylamino)ethyl]phenol) is a phenylethylamine derivative present in the fruits of several trees from Rutaceae family such as Bitter Orange ( Citrus aurantium ), Seville Orange, Sour Orange, Green Orange, Zhi Shi, and Kijitsu.

## **BITTER ORANGE - Uses, Side Effects, and More - WebMD**



Synephrine can be found in the fruit of a plant known as *Citrus aurantium*. It is one of the main active compounds found in the fruit and is also known as green orange, or zhi shi in Chinese. It is also called sour orange or bitter orange in other parts of the world. Chemically speaking, synephrine is chemically similar to the pseudo-ephedrine .

## SYNEPHRINE IN DIETARY SUPPLEMENT PRODUCTS - opss



Pre Workout Reviews. Best Pre Workout 2023; Strongest Pre Workout; Best Stim Free Pre Workout; Best Pre-Workout for Weight Loss; . Synephrine HCl - 50 mg. Synephrine is a well-researched ingredient shown to aid in weight loss. "In general, bitter orange extract alone (p-synephrine) or in combination with other herbal ingredients did not .

- <https://collectednotes.com/musclemarket/turinabol-pillen-kopen>
- [https://drive.google.com/file/d/1q\\_XOpCHZ4HOUQvYEBU-SAi4sgPI1iqCg/view?usp=sharing](https://drive.google.com/file/d/1q_XOpCHZ4HOUQvYEBU-SAi4sgPI1iqCg/view?usp=sharing)
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