

Metabolic Rate

Biohacker Report

REPORT CATEGORY —



WEIGHT & BODY FAT

Sample Client

Report date: 29 July 2025

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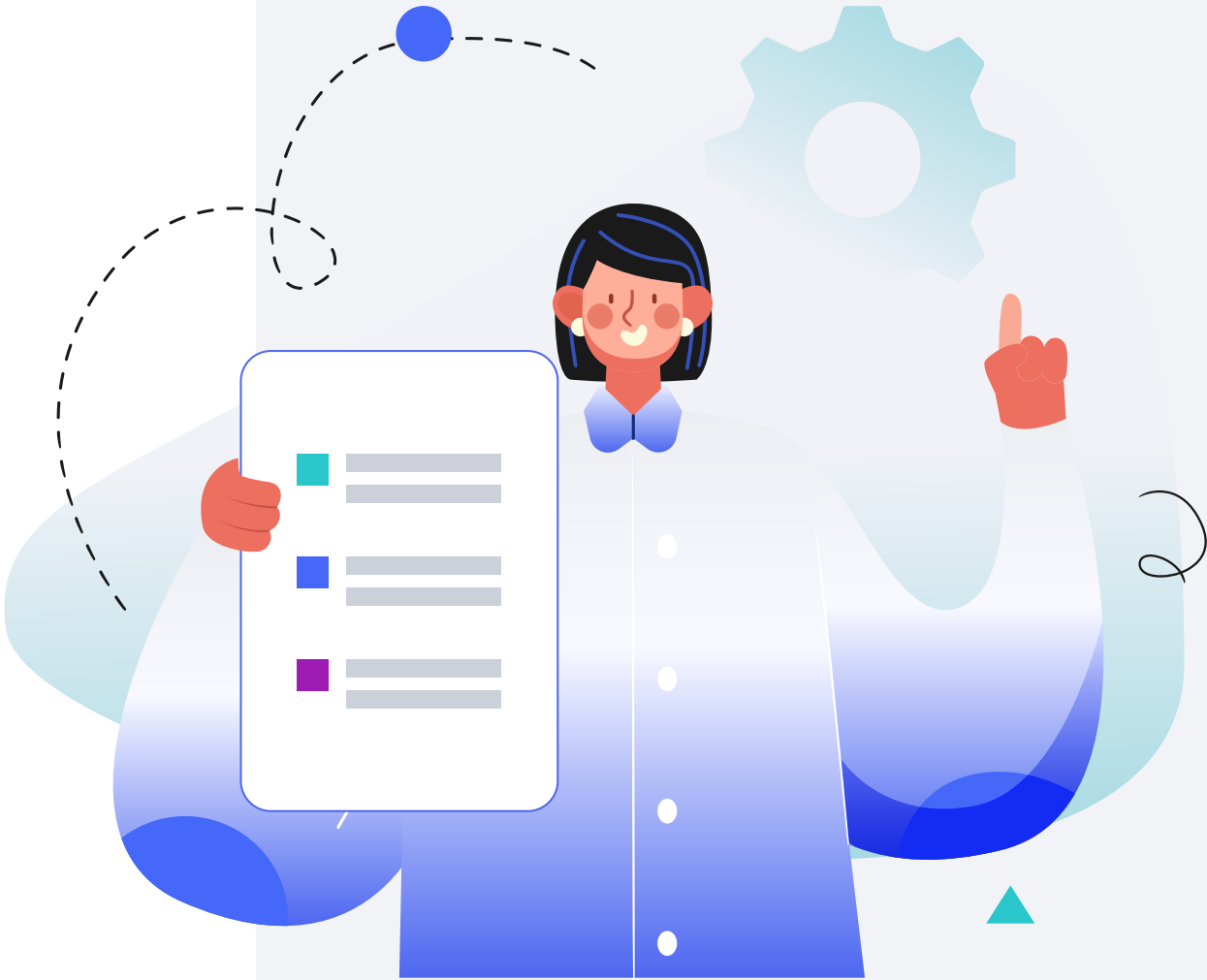
Your recommendations

Personal information

NAME	
Sample Client	
SEX AT BIRTH	
Female	
HEIGHT	
5ft 9"	175.0cm
WEIGHT	
165lb	75.0kg

DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.



Introduction


Metabolism is the sum of all the reactions in your body that turn food into energy. We need energy to help us [\[R\]](#):

- Move
- Think
- Breathe
- Pump blood
- Maintain body temperature
- Heal

Your metabolic rate is the number of calories you burn in a day to maintain these functions [\[R\]](#).

A lower metabolic rate or a “slower metabolism” means your body needs fewer calories to do basic functions. Others may need to burn more calories to support these functions. These people have a higher metabolic rate or a “faster metabolism” [\[R\]](#).

What Determines Metabolic Rate

 PERSONALIZED TO GENES

Based on the genes we looked at, you likely have a lower metabolic rate. This means your body likely needs fewer calories to do basic functions. However, a number of other lifestyle and environmental factors may also impact your metabolism.

Key Takeaways:

- Being high or low metabolism is not inherently problematic. Knowing what yours is allows you to adjust various diet, exercise, and lifestyle choices to properly manage it.
- Your metabolic rate influences movement, thinking, breathing, body temperature, and healing rate.
- High metabolic rate may be affected by being younger, being bigger, as well as more active. Low metabolic rate tends to be affected by the opposite of these. Your genetics may impact the influence of these factors.

Your metabolic rate is the number of calories you burn in a day to maintain bodily functions. A lower metabolic rate or a "slower metabolism" means your body needs fewer calories to do basic functions. Others may need to burn more calories to support these functions. These people have a higher metabolic rate or a "faster metabolism" [\[R,R,R\]](#).

Is metabolism related to body weight? If so, is it possible to burn more calories by boosting your metabolic rate?

Differences in metabolic rate may be due to both genetic and environmental factors. Factors that can contribute to a slower metabolism include [\[R, R, R, R, R\]](#):



Predisposed to lower metabolic rate based on 137,802 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
LEPR	rs1805096	GG
PPARGC1A	rs8192678	TC
LEPR	rs1137101	AG
ADRB2	rs1042713	GA
ADRB2	rs1042714	GC
CLOCK	rs1801260	AG
LEPR	rs1137100	AG
UCP1	rs1800592	TC
UCP2	rs659366	CT
CCND2	rs76895963	TT
TP53	rs78378222	TT
PARD3B	rs1470545	CC
SH3YL1	rs62106258	CT
L3MBTL3	rs7740107	AA
HMGA2	rs1351394	CC
DLG5	rs117543413	TC
ZNF628	rs147110934	GT
DCAF16	rs1472852	AC
TEFM	rs6505216	TG
FTO	rs9939609	TT
ADRB3	rs4994	AA
MC4R	rs17782313	TT
UCP3	rs1800849	GG
CCND3	rs33966734	CC
MGA	rs117183161	AA
MC4R	rs76227980	CC
ZBTB26	rs369508364	CC
CDKN1C	rs143840904	CC

- Being smaller
- Having less muscle mass
- Being older
- Being less active
- Not getting enough sleep

People with slower metabolism need fewer calories to get them through the day. They also tend to gain weight more easily.

Factors that can contribute to a faster metabolism include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Being larger
- Having more muscle mass
- Being younger
- Being more active

People with faster metabolism need more calories to get them through the day. They also find it harder to gain weight.

Metabolic rate may not change much from age 20 to 60. While you may not change how many calories your body needs to perform automatic functions, **you can burn more calories by being more active**. Regular exercise can help maintain a healthy weight and support overall health [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

If you're concerned about your weight or you think your metabolism is too slow or too fast, talk with your doctor.

GENE	SNP	GENOTYPE
FANCC	rs370727606	GG
ACAN	rs28584580	AA
PAM	rs78408340	CC
ADAMTS10	rs62621197	CC
COQ5	rs76929617	AA
PPA2	rs143847362	AA
ASPRV1	rs35986233	AA
RPS20	rs72656010	TT
IL11	rs4252548	CC
RAD9A	rs7952436	CC
ADAL	rs148076268	AA
DLEU7	rs3118914	GG
HCAR1	rs147730268	GG
MROH8	rs73094911	TT
LTBP1	rs116072427	GG
COPZ2	rs62064921	CC
WDR35	rs113386058	AA
ZNF469	rs76520574	CC
GALR1	rs74540285	AA
UVSSA	rs111391498	AA
DRAM1	rs17032220	TT
ZFHX4	rs61729527	CC

The number of "risk" variants in this table doesn't necessarily reflect your overall result.


Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You'll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE	
1	Strength Training	1 hour	
2	Practice Exercise Snacks	1 minutesute	
3	High-Intensity Interval Training (HIIT)	30 minutes	
4	Capsaicin and Capsinoids	450 mg	
5	Capsaicin		
6	Eat More Protein and Less Carbs		
7	L-Carnitine	1 g	
8	Green Tea Extract	250 mg	
9	Caffeine	100 mg	
10	Resveratrol	150 mg	
11	Green Tea	400 mg	
12	Garcinia Cambogia	500 mg	
13	Chewing		
14	Bitter Orange		
15	Yerba Mate	1 g	

1



Strength Training

IMPACT4 / 5

EVIDENCE4 / 5

How to implement

Engage in strength training exercises, such as weight lifting or bodyweight exercises, for 60 minutes per session, 2 to 3 times per week. Ensure you work all major muscle groups and rest each muscle group for at least 48 hours before exercising it again.

TYPICAL STARTING DOSE

1 hour

Description

Strength training, also called resistance or *anaerobic* training, contracts the muscles against an external resistance for short periods of time. This helps gain muscle strength, tone, and mass. This can include activities like weight lifting, pushups, and crunches.

Strength training, also known as resistance training, is a type of physical exercise that uses resistance to build strength, anaerobic endurance, and size [\[R\]](#). Some of the most common strength training methods include [\[R\]](#):

- Weight lifting
- Bodyweight exercises like push-ups, pull-ups, squats, and lunges.
- Resistance bands
- Plyometrics or explosive force exercises

The benefits of strength training are numerous, and include [\[R\]](#):

- Increased muscle strength
- Improved bone health
- Reduced risk of injury
- Improved balance and coordination
- Enhanced mood
- Boost metabolism

Consult with a doctor before starting any new exercise program, especially if you have any health conditions.

How it helps

Most experts agree that getting 150-300 minutes of exercise per week can help you control your weight. For best results, try to push yourself a bit with **moderate or intense exercise** [\[R, R\]](#).

Strength training may be more effective than aerobic exercise for increasing resting metabolic rate [\[R\]](#).

Strength training helps build muscle, which burns more calories at rest than fat tissue [\[R, R\]](#).

2



Practice Exercise Snacks

IMPACT

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EVIDENCE

4 / 5

How to implement

Integrate short bursts of physical activity, each lasting about 1 to 2 minutes, into your daily routine at least two to three times a day. These 'exercise snacks' can include activities like doing a set of stairs, rapid bodyweight exercises, pull-ups, push-ups, sit-ups, or brisk walking.

TYPICAL STARTING DOSE

1 minutesute

Description

Staying physically active is essential for maintaining overall health and well-being. **Exercise snacks** are brief, frequent bursts of physical activity integrated into daily routines, helping combat the health risks associated with prolonged sitting and sedentary behavior, such as obesity and cardiovascular issues. Examples include taking the stairs or doing quick exercises during work breaks.

Staying active can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [\[R\]](#).

Exercise snacks are short, quick bursts of physical activity performed throughout the day, designed to break up prolonged periods of sitting or inactivity. These brief bouts of exercise can be as short as a few minutes and are incorporated into daily routines to boost overall physical activity levels.

Exercise snacks are crucial for health because they combat the negative effects of sedentary behavior, such as prolonged sitting, which is associated with an increased risk of obesity, cardiovascular diseases, diabetes, and musculoskeletal issues. They help improve blood circulation, regulate blood sugar levels, and enhance mood and cognitive function.


Examples of exercise snacks include taking the stairs instead of the elevator, doing a few minutes of bodyweight exercises (e.g., squats or push-ups) during work breaks, or walking briskly for a few minutes after meals. These short, frequent bursts of activity contribute to a more active lifestyle and can significantly benefit overall health by reducing the risks associated with excessive sitting.

How it helps

Most experts agree that getting 150-300 minutes of exercise per week can help you control your weight. For best results, try to push yourself a bit with **moderate or intense exercise** [\[R, R\]](#).

Exercise helps by increasing the amount of calories burnt during and a few hours after the workout [\[R, R\]](#).

3



High-Intensity Interval Training (HIIT)

IMPACT

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EVIDENCE

4 / 5

How to implement

Engage in HIIT workouts for at least 30 minutes per session, 3 times a week. Each session should include short bursts of intense exercise, such as sprinting or fast cycling, for 30-60 seconds followed by a period of rest or lower-intensity exercise for 1-2 minutes. Adjust intensity and duration based on personal fitness level.

TYPICAL STARTING DOSE

30 minutes

Description

HIIT is a time-efficient form of exercise that involves short bursts of intense activity followed by brief rest periods. It can help improve cardiovascular fitness, burn calories, and build muscle strength in a shorter amount of time compared to traditional steady-state cardio workouts.

HIIT (high-intensity interval training) is a type of interval training that alternates short bouts of intense anaerobic exercise with short periods of rest or low-activity exercise for recovery. Popular examples include **CrossFit and Tabata**.

HIIT improves all types of muscle performance faster than other fitness modalities. HIIT is also more effective at improving heart health and burning fat than other, lower-intensity workouts.

To make the most gains from HIIT, make sure to allow for sufficient resting times. Otherwise, you won't be able to fully recover.


How it helps

Most experts agree that getting 150-300 minutes of exercise per week can help you control your weight. For best results, try to push yourself a bit with **moderate or intense exercise** [\[R, R\]](#).

Both continuous and HIIT exercise may be similarly effective at speeding up metabolism, but HIIT may be more effective when combined with whole-body electromyostimulation. Adding exercise to a low-calorie diet may prevent the decrease in metabolic rate [\[R, R, R\]](#).

Exercise helps by increasing the amount of calories burnt during and a few hours after the workout [\[R, R\]](#).

4



Capsaicin and Capsinoids

IMPACT

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EVIDENCE

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How to implement

Take a supplement containing 450 mg of capsaicin or capsinoids, once daily with a meal. Continue this routine daily as part of your supplement regimen.

TYPICAL STARTING DOSE

450 mg

Description

Capsaicin, found in chili peppers, is known for its potential to boost metabolism and promote weight loss. It can also provide pain relief when used topically in certain creams and ointments. Capsinoids are compounds similar to capsaicin, found in chili peppers, and may have similar metabolic and weight management benefits without the intense heat.

[Capsaicin](#) is the compound that makes chili peppers spicy [\[R\]](#).

People use **topical capsaicin** to relieve pain and **oral capsaicin** to aid weight loss [\[R, R\]](#).

Capsinoids are compounds similar to capsaicin. Unlike capsaicin, they are present in both sweet and chili peppers [\[R\]](#).

How it helps


Capsaicin (1-3 mg) may help speed up metabolism. This amount of capsaicin is available in [\[R, R, R, R, R\]](#):

- **50-150 mg** of a cayenne pepper extract
- **200-600 mg** of ground cayenne pepper

Combining capsaicin with ingredients like [green tea](#) and [ginger](#) may have similar effects [\[R, R, R\]](#).

Supplementing with **capsinoids (6-10 mg for 1-3 months)** may also increase the metabolic rate [\[R, R\]](#).

5



Capsaicin

IMPACT

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EVIDENCE

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How to implement

Apply a capsaicin cream or gel to the affected area up to 4 times daily. Make sure the skin is intact and not broken. Start with a lower concentration (0.025%) and gradually increase to 0.075% if needed for pain relief. Use continuously for at least 4 weeks to evaluate its effectiveness.

Description

Capsaicin, found in chili peppers, is known for its potential to boost metabolism and promote weight loss. It can also provide pain relief when used topically in certain creams and ointments.

How it helps

Two meta-analyses (the most recent one with 13 studies) concluded that capsaicin increases resting metabolic rate (by 33.99 kcal/day), energy expenditure, and fat oxidation while reducing appetite and the respiratory quotient [\[R, R\]](#).

6

Eat More Protein and Less Carbs

IMPACT

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EVIDENCE

4 / 5

How to implement

Include a source of lean protein such as chicken, fish, beans, or tofu in each meal, aiming for 20-30 grams per serving, while reducing carbohydrate-rich foods like bread, pasta, and sweets, aiming to make proteins about 30-40% of your daily caloric intake. Replace at least one carbohydrate-heavy meal or snack with a high-protein option daily.

Description

A diet that includes more protein and fewer carbohydrates can promote weight management and satiety, potentially aiding in weight loss efforts. Protein-rich foods can help control hunger and support muscle maintenance.

Proteins, fats, and carbs are macronutrients. You need these nutrients in large (‘macro’) amounts. They provide your body with the energy it needs to function properly [\[R\]](#).

For a healthier diet, experts recommend eating foods that are higher in protein but lower in fat and carbs [\[R, R\]](#).

This is because simple carbs can spike your blood sugar levels. Likewise, too much saturated fat can increase “bad” (LDL) cholesterol [\[R, R, R, R, R, R\]](#).

Eating a lot of high-carb or high-fat foods may lead to conditions like diabetes, obesity, and heart disease [\[R, R, R, R\]](#).

Meanwhile, protein boosts muscle mass and helps control your weight [\[R\]](#).

How it helps

Most weight loss experts recommend following a diet that’s high in protein but lower in carbs or fat [\[R, R\]](#).


Research suggests that getting more calories from protein (as opposed to either carbohydrates or fat) may support weight loss, metabolism, and satiety. High-protein diets appeared to increase fat burning and weight loss and reduce appetite in a handful of human studies [\[R, R, R, R\]](#).

Some low-carb diets that may help you lose weight include:

- **Keto diet:** low-carb and high-fat diet [\[R, R, R\]](#)
- **Atkins diet:** low-carb diet [\[R, R, R, R, R\]](#)
- **Paleo diet:** hunter-gatherer diet (limited carbs, dairy products, and legumes) [\[R, R, R\]](#)
- **Zone diet:** meals consist of 40% complex carbs, 30% protein, and 30% fat [\[R\]](#)

Note: *In the long run, high-protein diets may contribute to heart disease, calcium loss, constipation, and other health problems. If you have problems with kidneys or bones, consult your doctor or dietitian before adopting a high-protein diet* [\[R, R\]](#).

7



L-Carnitine

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Take 500 mg of L-carnitine supplement daily with a glass of water, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

1 g

Description

L-carnitine is an amino acid-like compound that plays a role in energy metabolism and helps prevent toxic substances from building up in cells. It is often used in dietary supplements for its potential to support muscle recovery, reduce fatigue, and enhance athletic performance.

[L-carnitine](#) is a **compound that helps you burn fat**. It also prevents toxic substances from building up in cells [\[R\]](#).

Your body can usually make enough carnitine to meet its needs. You can also get it from **meat and dairy products** [\[R\]](#).


People use L-carnitine for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Heart problems
- Overactive thyroid
- Fertility problems
- Blood sugar control
- Weight control

How it helps

L-carnitine (up to 2 g/day for 2-12 months) may support weight loss by boosting fat burning [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

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Green Tea Extract

IMPACT

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EVIDENCE

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How to implement

Take a green tea extract supplement containing 250-500 mg of EGCG (the active compound in green tea) daily, preferably with a meal to enhance absorption. This dosage is typically split into two separate doses, taken in the morning and later in the day. Continue this regimen for at least three months to observe potential health benefits.

TYPICAL STARTING DOSE

250 mg

Description

Green tea extract is a concentrated form of the beneficial compounds found in green tea, such as catechins. It is used in dietary supplements for its potential to enhance metabolism, aid in weight management, and provide antioxidant protection.

[Green tea](#) is made from the same plant as black tea (*Camellia sinensis*). However, the leaves and buds are processed differently [\[R\]](#).

Green tea contains **catechins**. These are antioxidants that help prevent [oxidative stress](#) [\[R\]](#).

EGCG is the main catechin found in green tea. It may help reduce inflammation and support weight loss [\[R\]](#).


How it helps

Supplementation with green tea extract may increase resting metabolic rate and energy expenditure. Try to get **300-600 mg of catechins per day**, which can be found in about **3-6 cups of green tea** [\[R\]](#).

Green tea catechins may help by burning fat. However, they may only work when combined with [caffeine](#), which is naturally found in green tea [\[R\]](#), [\[R\]](#).

Please note: polyphenols from green tea may bind to iron and form insoluble complexes, which reduces iron absorption in the gut. If you have anemia, consult your healthcare provider before using green tea [\[R\]](#).

9



Caffeine

IMPACT

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EVIDENCE

3 / 5

How to implement

Consume 100 to 200 mg of caffeine supplement daily, ideally in the morning to avoid interference with sleep. This can be in the form of a pill or powder, taken with water. Avoid exceeding 400 mg per day to prevent side effects.

TYPICAL STARTING DOSE
100 mg

Description

Caffeine is a natural stimulant found in coffee, tea, and certain other beverages and foods. In moderate amounts, it can help increase alertness and concentration, potentially enhancing cognitive function and physical performance.

People drink coffee for an energy and mood boost. [Caffeine](#) is the main ingredient responsible for these effects [\[R\]](#), [\[R\]](#).

Caffeine may also [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Support heart health
- Maintain healthy blood sugar

Caffeine is also found in some topical products for hair loss [\[R\]](#).


How it helps

Supplementing with **caffeine (100-400 mg/day)** may increase fat burning. It may also help maintain weight once it’s lost [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Caffeine likely helps by boosting metabolism

Please note: *If you're pregnant, limit caffeine to 200 mg per day* [\[R\]](#).

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Resveratrol

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Take 150-500 mg of resveratrol as a supplement daily, preferably with meals to enhance absorption. This dosage range is based on studies for various health benefits, and it's advised to not exceed 500 mg per day without medical supervision.

TYPICAL STARTING DOSE
150 mg

Description

Resveratrol is a natural compound found in red grapes, red wine, and some berries. It is known for its potential antioxidant properties and its role in promoting heart health.

[Resveratrol](#) is an antioxidant found mainly in [\[R\]](#):

- Berries
- Red grapes
- Red wine
- Peanuts

It's purported to have anti-inflammatory and antioxidant effects [\[R, R, R\]](#).


How it helps

Resveratrol (150-500 mg/day for 4-12 weeks) may help lose body weight and fat. Resveratrol may help by [\[R, R, R\]](#):

- Increasing the body's energy use
- Lowering fat production

Please note: *Resveratrol may interact with blood thinners (like Coumadin). Consult your doctor before taking resveratrol* [\[R, R\]](#).

11



Green Tea

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Consume 400 mg of green tea extract daily. This can be taken in the form of capsules or tablets available that specify the amount of green tea extract. Ensure the supplement is taken according to the product's specific instructions, usually once a day with water.

TYPICAL STARTING DOSE

400 mg

Description

Tea is a beverage made by steeping the leaves of the *Camellia sinensis* plant in hot water. It comes in various types, including black, green, white, and herbal teas, and is known for its diverse flavors and potential health benefits due to antioxidants and other bioactive compounds.

[Green](#) and black tea are made from the same plant (*Camellia sinensis*). This plant is processed in different ways to make each type of tea [\[R\]](#) [\[R\]](#).

Tea contains antioxidants called **flavonoids**, which may help prevent [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#):

- Heart disease
- Cancer
- Diabetes


How it helps

Green tea and its catechins may support weight loss and increase the metabolic rate. Try to get **300-600 mg of catechins per day**, which can be found in about **3-6 cups of green tea** [\[R\]](#) [\[R\]](#) [\[R\]](#).

Green tea catechins may help by burning fat. However, they may only work when combined with [caffeine](#), which is naturally found in green tea [\[R\]](#) [\[R\]](#) [\[R\]](#).

Please note: polyphenols from green tea may bind to iron and form insoluble complexes, which reduces iron absorption in the gut. If you have anemia, consult your healthcare provider before using green tea [\[R\]](#).

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Garcinia Cambogia

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take 500 mg of Garcinia Cambogia as a supplement 30 to 60 minutes before each meal. It is typically recommended to do this three times a day for effective results.

TYPICAL STARTING DOSE

500 mg

Description

Garcinia cambogia is a tropical fruit extract commonly used in weight management supplements. It contains hydroxycitric acid (HCA), which is believed to help curb appetite and support weight loss goals, although scientific evidence is mixed.

[Garcinia cambogia](#) is a plant native to Asia [\[R\]](#).

Different parts of *G. cambogia* are used to [\[R\]](#):

- Preserve and flavor food
- Make artwork and polish metals

In traditional medicine, people mainly use *G. cambogia* and its active compounds to manage weight [\[R\]](#), [\[R\]](#).

How it helps


Supplementing with **Garcinia cambogia (up to 4.7 g/day for 8-12 weeks)** may speed up metabolism and support weight loss. Combining *G. cambogia* with other herbs may have similar benefits [\[R\]](#), [\[R\]](#), [\[R\]](#).

Its active component **HCA (1-2.8 g/day for 2-12 weeks)** may also help [\[R\]](#).

Note that the evidence is mixed. *G. cambogia* extract didn't help in some of the studies [\[R\]](#), [\[R\]](#), [\[R\]](#).

Please note: *G. cambogia* may cause liver damage. Consult your doctor before taking it [\[R\]](#), [\[R\]](#), [\[R\]](#).

13



Chewing

IMPACT

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EVIDENCE

2 / 5

How to implement

Incorporate chewing thoroughly into your daily eating habits by ensuring each bite is chewed 20-30 times before swallowing. Practice this technique at every meal and with snacks to improve digestion and satiety.

Description


Chewing can help to reduce the tendency to overeat by keeping your mouth busy and providing a sense of fullness. It can also help to improve your metabolic rate and increase your energy levels. Additionally, chewing can help to improve your attention span and reduce stress levels.

How it helps

In a non-placebo-controlled trial of 30 participants, chewing sugar-free gum for a total of 1 h (3 sessions of 20 min) increased fasting and postprandial energy expenditure. Chewing gum was as effective as eating slowly at increasing post-meal diet-induced thermogenesis in a non-placebo-controlled trial of 12 healthy men. Similarly, chewing while tasting food increased diet-induced thermogenesis in a non-placebo-controlled trial of 11 men [\[R, R, R\]](#).

Chewing more before swallowing can help increase your metabolic rate, as it takes more energy to break down food. This process, called diet-induced thermogenesis, boosts your metabolism by 10-15%.

14



Bitter Orange

IMPACT

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EVIDENCE

2 / 5

How to implement

Incorporate bitter orange fruit, juice, or extracts as part of your meals or snacks. For adults, consuming 100-150mg of bitter orange extract one to three times daily is a common dosage range. Always start with the lowest dose to assess tolerance.

Description


Bitter orange is a fruit often used in herbal supplements and traditional medicine for its potential to support weight management and digestion. It contains compounds that may have stimulant and appetite-suppressing effects.

How it helps

Synephrine, found in bitter orange, has shown varying effects on fat oxidation and metabolism in different studies. It increased fat oxidation and metabolic rate in some trials, particularly when combined with naringin and hesperidin. However, its impact on fat and carbohydrate oxidation can vary, and it may not affect ATP utilization significantly in certain conditions [\[R, R, R, R, R, R, R, R\]](#).

Bitter orange contains synephrine, a substance that might speed up the rate at which your body burns calories and fat.

15



Yerba Mate

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take yerba mate as a supplement by consuming 1 to 3 grams of the dried leaves in capsule form daily, or by drinking 1 to 3 cups of yerba mate tea. Do this consistently for at least 4 to 8 weeks to observe potential benefits.

TYPICAL STARTING DOSE

1 g

Description

Yerba mate is a South American herbal tea known for its caffeine content and antioxidant properties. It provides a boost in alertness and mental clarity and is used for its potential to enhance focus and energy.

Yerba mate is a traditional South American beverage made from the dried leaves of the yerba mate plant (*Ilex paraguariensis*). It is commonly consumed in countries like Argentina, Uruguay, Paraguay, and Brazil, and has a long history of cultural significance and social bonding.

Yerba mate is traditionally sipped through a *bombilla*, a special metal straw, from a gourd-shaped container. This results in a flavorful and stimulating drink often shared among friends and family.

How it helps

Yerba mate supplementation (1,000-2,000 mg) before exercise increased fat burning in 2 placebo-controlled trials of 26 healthy participants. A multi-ingredient supplement with yerba mate, green tea extract, guarana seed extract, caffeine, saw palmetto, Fo-Ti, eleuthero root, cayenne pepper, and yohimbine had similar effects in another placebo-controlled trial of 12 volunteers [\[R\]](#), [\[R\]](#), [\[R\]](#).