



Crookes
Nutrition & Fitness



SUPPLEMENT CHEAT SHEET

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Welcome

In this guide, I've compiled a comprehensive breakdown of the top supplements that will help you on your health and fitness journey.

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Hey there!

Welcome to what I like to call the "No-Nonsense Guide to Supplements."

I'm super excited to take you through the ins and outs of those little helpers that can boost your health and fitness journey.

Let's dive right in, shall we?

First off, let's get one thing straight: supplements are cool, but they're not magic.

They're like the sidekicks to your hero—your diet and workout routine. They can't do the heavy lifting (pun intended) but, when used right, they punch way above their weight in helping you reach your goals.

Now, about those goals. Whether it's building muscle, running faster, lifting heavier, or just feeling awesome, I've got the lowdown on which supplements can actually help, and which are just hype. It's a jungle out there in the supplement world, and I'm here to be your guide.

You've probably heard all sorts of claims about supplements. And let's be honest, some of them sound more like fairy tales than science. But don't worry, I've sifted through the myths to find the truth. Spoiler alert: there are some real gems out there that are backed by solid science. These are the goodies we'll focus on, the ones that really do what they say on the tin.

This guide isn't just a list, though. I'll walk you through how to use these supplements effectively, making sure they complement your diet and workouts. Because, let's face it, we're all about getting those gains (or losses) in the most efficient way possible.

So, are you ready to cut through the BS and get the real scoop on supplements?

Let's do this together!

With a bit of knowledge and a lot of hard work, we're going to make some serious progress.

A stylized, handwritten signature in black ink that reads "Cillian". The signature is fluid and cursive, with a large, sweeping 'C' at the beginning.

PROTEIN

Protein Supplements: The building blocks for a better You!

Protein – the superstar of the supplement world! Whether you're new to the fitness game or have been on the wellness journey for a while, understanding the role of protein supplements can be a game-changer.

What is Protein?

At its core, protein is one of the essential macronutrients our bodies need. Think of it as the building blocks of life. They are the crucial components that make up our muscles, tissues, organs, and even the enzymes and hormones that regulate our bodily functions. Without enough protein, our bodies can't function at their best.

Why Consider Protein Supplements?

1. **Convenience:** Sometimes, our busy lives make it challenging to prepare protein-rich meals consistently. That's where protein supplements come in handy. They're quick and easy to consume, ensuring you get your protein fix even on the go.
2. **Muscle Recovery and Growth:** Whether you're a fitness enthusiast or just looking to tone up a bit, protein supplements can help repair and build muscles. They provide your body with the amino acids it needs for optimal recovery and growth.
3. **Weight Management:** Protein supplements can be a valuable tool in weight management. They keep you feeling full, reducing the temptation to snack on unhealthy options. Plus, they help maintain lean muscle mass, which is essential for a healthy metabolism.
4. **Nutritional Gaps:** If your regular diet lacks protein-rich foods like lean meats, fish, or plant-based sources, supplements can help bridge the gap and ensure you meet your daily protein needs.

Types of Protein Supplements

There's a variety of protein supplements available, but here are some common ones:

1. **Whey Protein:** Derived from milk, whey protein is fast-absorbing and ideal for post-workout recovery.
2. **Casein Protein:** Also from milk, casein protein digests more slowly, making it suitable for sustaining amino acid release over time.
3. **Plant-Based Proteins:** Perfect for vegetarians and vegans, these are derived from sources like peas, soy, or hemp.
4. **Collagen Protein:** Known for its potential benefits for skin, hair, and joint health, collagen protein is derived from animal sources.
5. **Protein Blends:** These combine different protein sources to offer a broader amino acid profile.

How to Use Protein Supplements

1. **Timing:** Many people prefer to take protein supplements immediately after a workout when the body craves amino acids for muscle recovery. However, you can also use them as a convenient snack or meal replacement.
2. **Dosage:** The amount of protein you need can vary depending on your goals and activity level. A general guideline is to aim for 20-25 grams of protein per serving.
3. **Mixing:** Most protein supplements come in powder form. Simply mix them with water, milk, or a smoothie for a delicious and nutritious treat.

Remember: Protein supplements are a helpful addition to your diet, but they shouldn't replace whole foods entirely. It's always best to prioritise a balanced diet rich in lean meats, dairy, legumes, and vegetables.

The Main Types Of Protein

Whey

Whey protein is a highly soluble milk protein that has gained popularity among athletes and fitness enthusiasts due to its convenience. It is considered a complete protein, providing all the essential amino acids required by the body. One of the key advantages of whey protein is its rapid and efficient absorption, allowing for quick delivery of nutrients to the muscles.

Casein

In contrast to whey protein, casein is characterised by its slow digestion rate, taking up to seven hours to release all its amino acids into the muscles. Due to this prolonged digestion process, it is recommended to consume casein before bedtime, either through a protein shake or whole foods such as cottage cheese or Greek yogurt.

Vegan Proteins

Soy Protein: For individuals who prefer to avoid dairy, soy protein is an excellent plant-based alternative derived from soybeans. Like whey protein, soy protein is a complete protein, containing all the essential amino acids necessary for muscle growth and repair.

Pea Protein: If you're looking for a plant-based and high-quality protein source, pea protein is a great option. It serves as an alternative to both soy and dairy-based proteins. Pea protein is particularly notable for its arginine content, an amino acid that supports various bodily functions.

BENEFITS:

Supports muscle growth and repair by providing essential amino acids.
Aids in the maintenance of lean muscle mass, especially during periods of weight loss or calorie restriction.
Helps regulate appetite and promote feelings of fullness, supporting weight management.

WHO WOULD BENEFIT:

Individuals engaged in resistance training or intense physical activity to support muscle recovery and growth.
Those on a calorie-restricted diet or looking to manage weight, as protein helps maintain muscle mass and promotes satiety.
Vegetarians or vegans who may have a limited intake of complete protein sources.

RECOMMENDED DAILY SERVING:

The recommended protein intake varies depending on factors such as age, sex, activity level, and goals.

A general guideline for adults is to consume 0.8 - 1.2 grams of protein per kilogram of body weight. However, individuals engaged in intense physical activity may require higher protein intake, ranging from 1.2 to 2 grams per kilogram of body weight.

HEALTH SUPPLEMENTS

What are health supplement?

Health supplements, often referred to as dietary supplements, are products designed to complement your diet and provide essential nutrients that may be lacking in your regular meals. They come in various forms, including pills, capsules, tablets, powders, and liquids.

These supplements typically contain vitamins, minerals, amino acids, herbs, or other natural or synthetic substances that aim to support your overall health and well-being. The primary goal of health supplements is to fill nutritional gaps, address specific health concerns, or enhance certain aspects of your diet or lifestyle.

Types of Health Supplements

- **Electrolytes:** Essential for revitalisation during intense workouts and maintaining equilibrium when needed.
- **Caffeine:** Your trusted ally for that morning boost or workout enhancement, offering renewed vitality and heightened focus.
- **Magnesium:** The relaxation specialist that supports muscle function, nerve health, and much more.
- **Glucosamine Sulphate:** A soothing remedy for your joints, helping you move freely and comfortably.
- **Multivitamins:** Your daily dose of essential nutrients, ensuring you receive a comprehensive spectrum of vital vitamins and minerals.
- **Vitamin D:** The sunshine vitamin, vital for strong bones, a robust immune system, and overall vitality.
- **Vitamin C:** Your immune system's best friend, aiding in wound healing, collagen production, and antioxidant protection.
- **Omega-3 Fatty Acids:** Nature's anti-inflammatory, promoting heart health, cognitive function, and overall well-being.
- **Fish Oils:** A dietary supplement derived from the tissues of fatty fish, offering a wealth of benefits from head to toe.

How to Use Health-Based Supplements:

As we continue on the next few pages of the ebook, we will talk about how to incorporating these supplements into your daily life including:

- Timing: Discover the ideal moments to harness the potential of each supplement.
- Dosage: Navigate the recommended doses to ensure safe and effective use.

It's important to note that while supplements can be valuable additions to your daily routine, they should not replace a balanced diet. Instead, they should complement your food intake and promote optimal health when used wisely and in consultation with a healthcare professional. Supplements are not intended to cure diseases or serve as a substitute for medical treatment but can play a role in supporting your wellness goals.

ELECTROLYTES

Electrolytes (sodium, potassium, calcium, magnesium, chloride, phosphate) maintain fluid balance, nerve function, muscle contractions, and hydration. Electrolyte supplements replenish these minerals lost through intense exercise or excessive sweating. They are essential for endurance athletes, those in hot environments, or individuals prone to imbalances.

BENEFITS:

Electrolytes are vital for maintaining hydration, muscle function, and nerve signaling. They help balance blood acidity, regulate blood pressure, and are crucial for energy production. Essential for athletes and individuals in hot climates due to sweat loss, they also support brain function and tissue repair.

WHO WOULD BENEFIT:

Essential for everyone, electrolytes are particularly beneficial for athletes, those in hot climates, individuals prone to dehydration (like the elderly), and people on diets that disrupt electrolyte balance (like ketogenic diets).

RECOMMENDED DAILY SERVING:

Recommended intake varies: for sodium, less than 2,300 mg/day; potassium, 3,500-4,700 mg/day; magnesium, 310-420 mg/day; calcium, 1,000-1,300 mg/day. Athletes and those with high sweat loss may need more. It's best to obtain electrolytes from a balanced diet and consult a healthcare provider before starting supplements.

CAFFEINE

Caffeine is a well-known stimulant that reduces fatigue, increases alertness, and improves focus. It enhances endurance performance, reaction time, and fat oxidation. Athletes commonly use caffeine to improve exercise performance. It comes in various forms, such as tablets but most commonly found in drinks like coffee and energy drinks.

BENEFITS:

Caffeine is a central nervous system stimulant that can help improve mental alertness and reduce feelings of fatigue. It enhances cognitive performance, including better concentration, focus, and reaction times. Caffeine also has physical performance benefits, increasing endurance and strength by mobilising fatty acids from fat tissues and making them available for energy production.

WHO WOULD BENEFIT:

Caffeine is particularly beneficial for athletes and fitness enthusiasts seeking to enhance their training outcomes and physical performance. It aids in increasing endurance, strength, and power output by reducing perceived effort and fatigue, allowing for longer and more intense training sessions. Caffeine can also improve muscle contraction and increase fat oxidation, which can be especially advantageous for endurance sports and weight management. Individuals engaging in regular exercise, competitive sports, or anyone looking to improve workout efficiency may find caffeine to be a valuable addition to their fitness regimen.

RECOMMENDED DAILY SERVING:

The recommended maximum intake for most adults is up to 400 mg of caffeine per day – about the amount in four 8-ounce cups of brewed coffee. Pregnant women are advised to limit their intake to less than 200 mg per day. It's important to monitor one's own response to caffeine and adjust intake accordingly, as some individuals may experience negative effects, such as jitteriness or disrupted sleep, even at lower doses. Sources of caffeine include coffee, tea, chocolate, some soft drinks, and certain medications or supplements.

MAGNESIUM

Magnesium is the second most abundant nutrient in the body behind calcium. Around 60% of it is stored in the bones, and works in combination with calcium to maintain density and strength in bones and teeth.

Magnesium is responsible for over 300 different processes in the body, playing a vitally important role in the maintenance of muscle function. Many experts believe that due to magnesium's benefit on human psychology, increasing daily intakes of magnesium can help reduce feelings of tiredness and fatigue.

BENEFITS:

Magnesium is crucial for over 300 biochemical reactions in the body. It supports muscle and nerve function, energy production, and the structural development of bones. It also helps regulate blood pressure, blood sugar levels, and plays a role in making DNA, protein, and glutathione, a key antioxidant.

WHO WOULD BENEFIT:

Magnesium is beneficial for everyone, especially those with high stress levels, as stress can deplete magnesium stores. Athletes or individuals with an active lifestyle may require more magnesium for muscle recovery. It's also important for people with diabetes, high blood pressure, and those at risk of osteoporosis.

RECOMMENDED DAILY SERVING:

The recommended daily intake of magnesium varies: 310-420 mg for adults, with higher needs for pregnant or lactating women. It's best sourced from foods like leafy greens, nuts, seeds, and whole grains. Supplements can be considered in consultation with a healthcare provider, especially for those with magnesium deficiency.

GLUCOSAMINE SULPHATE

Although glucosamine is naturally occurring in the body, factors such as advancing age, physical trauma and medical complications can negatively impact the ability of the body to synthesise this compound. Glucosamine is not found in most peoples diet in significant amounts, therefore supplementing high quality glucosamine is a good idea.

BENEFITS:

Glucosamine sulphate is known for its role in building cartilage, the tough tissue that cushions joints. It may help alleviate joint pain and stiffness, particularly in osteoarthritis, and could support joint health and mobility.

WHO WOULD BENEFIT:

Individuals suffering from joint pain or osteoarthritis may benefit the most from glucosamine sulfate. It's also potentially beneficial for athletes or those with joint wear and tear due to age or physical activity. However, its benefits may vary among individuals.

RECOMMENDED DAILY SERVING:

The typical recommended dose of glucosamine sulfate is 1,500 mg per day, either as a single dose or in divided doses. It's important to note that effects might take several weeks to become noticeable. As with any supplement, it should be used under medical advice, especially for those with shellfish allergies, as many supplements are shellfish-derived.

MULTIVITAMIN

The primary role of a multivitamin is to fill nutritional gaps and make sure people get their daily allowance of underconsumed nutrients like vitamins A, C, D, E and K, calcium, magnesium, dietary fiber, choline and potassium. Although multivitamins may be beneficial for some people, they're unnecessary for most. In some cases, they may even provide excessive amounts of certain nutrients. Most people should be able to get enough vitamins and minerals via a healthy balanced diet.

BENEFITS:

Multivitamins provide a range of essential vitamins and minerals that support overall health. They can fill nutritional gaps in the diet, support immune function, maintain energy levels, and contribute to heart, brain, and eye health. They also play a role in maintaining bone strength and metabolic processes.

WHO WOULD BENEFIT:

Almost everyone can benefit from a multivitamin, especially individuals with dietary restrictions, older adults, pregnant women, and those with health conditions that affect nutrient absorption. They are also useful for people with busy lifestyles or unbalanced diets.

RECOMMENDED DAILY SERVING:

Multivitamin needs vary based on age, sex, and health status. It's generally recommended to take one multivitamin per day, as indicated on the product label. However, it's important to ensure that intake from supplements and diet does not exceed upper safe levels of vitamins and minerals.

VITAMIN D

Vitamin D is a fat-soluble vitamin that plays a vital role in calcium absorption, bone health, and immune system function. It is primarily synthesized in the body through exposure to sunlight. Adequate vitamin D levels are essential for bone mineralization, muscle function, and overall well-being. Vitamin D deficiency is common, especially in regions with limited sunlight exposure. Supplementation is recommended for individuals with low levels or those at risk of deficiency.

BENEFITS:

Vitamin D is essential for calcium absorption, bone health, immune function, and reducing inflammation. It may also play a role in mood regulation and protecting against certain chronic diseases.

WHO WOULD BENEFIT:

Vitamin D is particularly important for individuals with limited sun exposure, older adults, people with darker skin, and those living in northern latitudes. It's also beneficial for people with certain medical conditions like osteoporosis.

RECOMMENDED DAILY SERVING:

The recommended daily intake is 600-800 IU for adults, though some experts suggest higher doses, especially for those with low blood levels. The upper safe limit is generally considered to be 4,000 IU per day. Supplementation should be based on individual needs and blood levels, ideally under medical guidance.

VITAMIN C

Vitamin C is a water-soluble vitamin known for its antioxidant properties. It plays a crucial role in immune function, collagen synthesis, and wound healing. Vitamin C also aids in iron absorption and acts as a powerful antioxidant, protecting cells from damage caused by free radicals. It supports overall health, enhances immune system function, and promotes healthy skin. Vitamin C is commonly found in fruits and vegetables or available as a supplement in tablet or powder form.

BENEFITS:

Vitamin C is a powerful antioxidant that supports the immune system, aids in collagen production for healthy skin, bones, and blood vessels, and helps in the absorption of iron. It also plays a role in wound healing and maintaining cartilage.

WHO WOULD BENEFIT:

Vitamin C is beneficial for everyone, particularly those with a limited diet or those who don't consume enough fruits and vegetables. It's also important for smokers, as smoking can reduce vitamin C levels, and for people under stress, as stress can deplete vitamin C stores.

RECOMMENDED DAILY SERVING:

The recommended daily intake is 75 mg for women and 90 mg for men, with an upper limit of 2,000 mg per day. Higher doses are often used therapeutically but should be discussed with a healthcare provider.

OMEGA 3

Omega-3 fatty acids are essential fats that play a critical role in maintaining overall health. They are primarily found in fatty fish, such as salmon, mackerel, and sardines, as well as in certain plant sources like flaxseeds and walnuts. Omega-3s provide numerous benefits, including reducing inflammation, supporting heart health, promoting brain function, and aiding in joint health. Supplementation with omega-3 capsules or liquid fish oil is common, especially for individuals with limited dietary intake of fatty fish or those seeking to optimize their omega-3 levels.

BENEFITS:

Omega-3 fatty acids, including EPA and DHA, are essential for brain health, cardiovascular function, and reducing inflammation. They support cognitive function, vision, joint health, and may have a role in managing depression and anxiety. Omega-3s are also important for prenatal and postnatal development.

WHO WOULD BENEFIT:

Omega-3s are beneficial for nearly everyone, but especially important for individuals with cardiovascular risks, those experiencing cognitive decline, pregnant and breastfeeding women, and people with inflammatory conditions. They're also crucial for individuals who do not consume much fatty fish in their diets.

RECOMMENDED DAILY SERVING:

The recommended daily intake is not firmly established, but for general health, an intake of 250-500 mg combined EPA and DHA is often suggested. Higher doses may be recommended for specific conditions, but it's advisable to consult a healthcare provider for tailored guidance.

FISH OILS

Fish oil is a dietary supplement derived from the tissues of fatty fish. It is rich in omega-3 fatty acids, including EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). These omega-3s offer a wide range of health benefits, including supporting heart health, reducing inflammation, improving cognitive function, and promoting joint health. Fish oil supplements are available in capsule or liquid form and are commonly used to increase omega-3 intake for individuals who don't consume enough fish in their diet. It's important to choose high-quality fish oil supplements that have undergone purification processes to remove potential contaminants.

BENEFITS:

Fish oil is a rich source of omega-3 fatty acids (EPA and DHA). It supports heart health by improving blood lipid levels, reducing triglycerides, and potentially lowering blood pressure. Fish oil also aids in reducing inflammation and may benefit joint health and cognitive function.

WHO WOULD BENEFIT:

Fish oil supplements are particularly beneficial for individuals who don't eat fatty fish regularly. They're also helpful for people with high triglyceride levels, those at risk for heart disease, and individuals seeking to support joint and cognitive health.

RECOMMENDED DAILY SERVING:

For general health, a common recommendation is 1,000 mg of fish oil daily, providing 250-500 mg of combined EPA and DHA. For specific health conditions like high triglycerides, higher doses may be recommended. It's important to consult with a healthcare provider, especially to discuss potential interactions with other medications.

SPORTS NUTRITION

What Are Sports Supplement?

sports supplements, where performance meets optimisation, and athletes of all levels strive for excellence. Whether you're an aspiring athlete or a seasoned pro, the world of sports supplements offers a wealth of options to enhance your physical prowess and support your fitness journey.

Overall Benefits of Sports Supplements:

Sports supplements are specifically designed to boost athletic performance, aid in recovery, and help you achieve your fitness goals. Here's a glimpse of some popular sports supplements and their potential benefits:

Types of Health Supplements

- **Electrolytes:** Essential for revitalisation during intense workouts and maintaining equilibrium when needed.
- **Caffeine:** Your trusted ally for that morning boost or workout enhancement, offering renewed vitality and heightened focus.
- **Magnesium:** The relaxation specialist that supports muscle function, nerve health, and much more.
- **Glucosamine Sulphate:** A soothing remedy for your joints, helping you move freely and comfortably.
- **Multivitamins:** Your daily dose of essential nutrients, ensuring you receive a comprehensive spectrum of vital vitamins and minerals.
- **Vitamin D:** The sunshine vitamin, vital for strong bones, a robust immune system, and overall vitality.
- **Vitamin C:** Your immune system's best friend, aiding in wound healing, collagen production, and antioxidant protection.
- **Omega-3 Fatty Acids:** Nature's anti-inflammatory, promoting heart health, cognitive function, and overall well-being.
- **Fish Oils:** A dietary supplement derived from the tissues of fatty fish, offering a wealth of benefits from head to toe.

How to Use Sports Supplements:

To harness the full potential of sports supplements, it's crucial to understand when and how to use them effectively:

- **Timing:** The timing of supplement consumption can vary depending on the specific product and your fitness goals. For example, creatine is often taken before or after workouts, while dextrose and maltodextrin are typically consumed during or immediately after exercise to replenish glycogen stores.
- **Dosage:** Follow the recommended dosage instructions provided on the supplement packaging or consult with a sports nutritionist for personalised guidance.
- **Stacking:** Some athletes choose to stack multiple sports supplements to maximise their benefits. Combining creatine with beta-alanine or maltodextrin, for instance, can be a strategic approach to enhance performance and recovery.
- **Hydration:** Remember to stay well-hydrated when using sports supplements, as they may increase the body's need for water.

Sports supplements are valuable tools to help you achieve your athletic goals, but they work best when integrated into a well-rounded fitness routine and a balanced diet. Prioritise safety and consult with a qualified sports nutritionist or healthcare professional to tailor your supplement regimen to your specific needs and objectives. With the right approach, sports supplements can elevate your performance and take your fitness journey to new heights.

CREATINE

Creatine is a natural compound that enhances muscle strength, power, and performance during high-intensity activities. It supports muscle recovery and increases muscle mass. Widely used by athletes, creatine supplementation improves exercise performance.

BENEFITS:

Creatine is one of the most researched supplements in sports nutrition, known primarily for enhancing strength, power output, and muscle mass. It aids in the production of ATP, the energy currency of the cell, making it crucial for high-intensity, short-duration activities like weightlifting and sprinting. Creatine also supports cognitive function and may have neuroprotective benefits.

WHO WOULD BENEFIT:

Creatine is particularly beneficial for athletes and individuals engaged in high-intensity, explosive sports or exercises. It's also useful for vegetarians or those with lower levels of natural dietary creatine intake. Additionally, older adults may benefit from creatine to help maintain muscle mass and strength.

RECOMMENDED DAILY SERVING:

The typical dosing protocol involves a loading phase of 20 grams per day (divided into 4 servings) for 5-7 days, followed by a maintenance phase of 3-5 grams per day. Alternatively, one can skip the loading phase and consume 3-5 grams daily, although it may take longer to experience benefits.

BETA ALANINE

Beta alanine increases muscle carnosine levels, which helps buffer acid in muscle cells. This delays muscle fatigue during high-intensity exercise, improving performance. Beta alanine supplementation benefits activities lasting 1-4 minutes, like sprints or weightlifting. Taken in powder form, it supports muscle endurance and power output when consumed daily.

BENEFITS:

Beta-Alanine is known for its ability to increase muscle carnosine levels, which helps buffer acid in muscles, delaying the onset of fatigue and improving endurance. It's beneficial for prolonged high-intensity activities and can enhance overall training volume and performance.

WHO WOULD BENEFIT:

Beta-Alanine is ideal for athletes and fitness enthusiasts engaged in high-intensity and endurance training. It's particularly effective for activities that last 1 to 4 minutes. Additionally, anyone looking to improve their workout capacity and reduce muscle fatigue can benefit from beta-alanine.

RECOMMENDED DAILY SERVING:

The recommended dose of beta-alanine is typically around 2-5 grams per day. It's often recommended to split this dosage into smaller servings throughout the day to minimize the potential for skin tingling, a harmless but common side effect. Consistent use over a period of several weeks is necessary for the best results.

DEXTROSE

Dextrose, also known as glucose, is a simple sugar derived from corn or other plant sources. It is rapidly absorbed by the body and provides a quick source of energy. Dextrose is commonly used by athletes and individuals needing a fast-acting carbohydrate to support energy levels during intense workouts or to aid in post-workout glycogen replenishment. It is available in powder or tablet form and is often used in sports drinks or recovery supplements.

BENEFITS:

Dextrose, a simple sugar, is absorbed directly into the bloodstream, providing immediate energy. It's beneficial for rapidly replenishing glycogen stores post-exercise and can help increase nutrient absorption when combined with other nutrients like protein.

WHO WOULD BENEFIT:

Dextrose is especially useful for athletes and fitness enthusiasts requiring quick energy replenishment, particularly after intense workouts. It's also helpful for individuals who need a rapid increase in blood sugar, such as diabetics experiencing hypoglycemia.

RECOMMENDED DAILY SERVING:

The appropriate serving size can vary. For exercise performance and recovery, 15-30 grams can be effective, often combined with protein and other nutrients. The exact amount should be based on individual energy requirements and the nature of the workout.

MALTODEXTRIN

Maltodextrin is a complex carbohydrate derived from starch. It is quickly broken down into glucose and absorbed by the body, making it an efficient source of energy. Maltodextrin is commonly used by athletes and individuals involved in endurance activities to replenish glycogen stores and sustain energy levels. It is often found in sports drinks, energy gels, or as a standalone powder.

BENEFITS:

Maltodextrin is a highly digestible carbohydrate used for quick energy. It has a high glycemic index, which means it can rapidly increase blood sugar, providing a quick energy boost. It's commonly used in sports drinks and snacks to replenish glycogen stores and improve exercise performance.

WHO WOULD BENEFIT:

Maltodextrin is ideal for athletes and individuals engaged in prolonged or high-intensity exercise who need a fast source of energy. It's also often used post-workout recovery to quickly refuel glycogen stores.

RECOMMENDED DAILY SERVING:

Serving size depends on individual energy needs and the duration/intensity of exercise. Generally, 30-60 grams per hour during exercise is

HIGHLY BRANCHED CYCLIC DEXTRIN

Highly Branched Cyclic Dextrin (HBCD) is a type of carbohydrate that is rapidly absorbed and digested by the body. It is commonly used as a source of energy during intense physical activities and endurance exercises. HBCD offers benefits such as providing sustained energy, promoting faster gastric emptying, and supporting optimal hydration. It is often found in sports drinks or workout supplements in powder form.

BENEFITS:

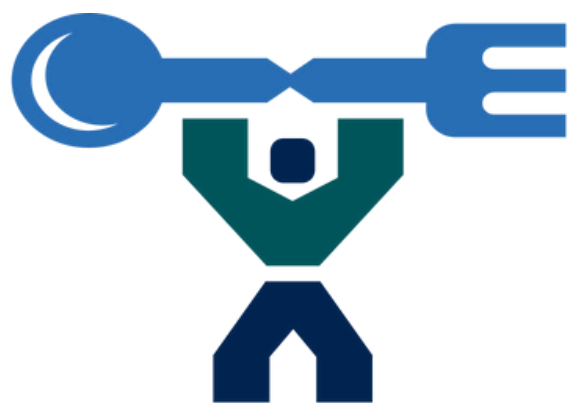
HBCD is a carbohydrate supplement known for its rapid absorption and low osmolality, meaning it's less likely to cause gastric distress. It provides a quick and sustained release of energy, making it ideal for endurance activities. HBCD helps replenish glycogen stores efficiently and supports recovery post-exercise.

WHO WOULD BENEFIT:

This supplement is particularly beneficial for endurance athletes, bodybuilders, and those engaged in high-intensity training or sports. It's also suitable for individuals seeking a fast-digesting carb source that minimises digestive discomfort during exercise.

RECOMMENDED DAILY SERVING:

The recommended serving size can vary based on the intensity and duration of the exercise. Typically, 15-30 grams per hour of exercise is suggested, mixed with water. It's important to tailor the dosage to individual needs and exercise demands.



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Disclaimer

It is important to note that the information provided in this guide does not constitute medical advice. Before starting any exercise, nutrition, or supplementation program, or if you have any questions about your health, it is recommended to consult with a medical or health professional.

While this guide is based on scientific studies, individual results may vary. By engaging in any activity or taking any product mentioned in this guide, you are doing so of your own free will and are knowingly and voluntarily accepting any risks involved. It should be noted that although we mention major known interactions, it is still possible for any supplement to interact with other supplements, foods, pharmaceuticals, and specific health conditions.

Crookes Nutrition and Fitness does not assume liability for any actions taken after reading this guide, nor do we assume liability for any misuse of supplements. Additionally, we do not ensure that unforeseen side effects will not occur even at proper dosages, and therefore do not assume liability for any side effects from supplements or practices.