

# Supplement Intake for Health Purposes: A Survey among Mobile Legends E-Sport Athletes in Malaysia

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## ABSTRACT

Consuming supplements daily is essential, particularly for Malaysian sports athletes. Not only are common athletes required, but so are e-sports athletes, who must constantly confront a screen for a whole day during training. Given the popularity and importance of esports, this study investigates the use of supplements by e-sports athletes in their everyday routines. This study also aims to promote behavior and awareness about the value of supplements that e-sport participants ingest in their daily lives. A qualitative interview was conducted with Mobile Legends: Bang Bang (MLBB) athletes. According to the data, most of them are unaware of supplements and prefer to care for their bodies through other healthy living choices in their daily lives. This research emphasizes the potential for supplements as additional food required to complement a deficiency that they now experience, as well as encouraging the usage of supplements among Malaysian e-sports participants. It also enables the industry to develop a supplement product that will help the country's e-sports athletes in the future.

**Keywords:** *Esports, Athletes, Supplements*

## INTRODUCTION

Nutrition is an important component of improved athletic performance in elite sports, where a small difference in the second, last dash, or decisive play can mean the difference between winning and losing. Athletes' performance can be enhanced with appropriate and personalized nutrition intake (Nurul Athirah Mohd Azhari, 2018). Furthermore, the athlete's body can only meet high energy and nutritional demands if they eat enough food, which aids in all-out adaptation to physical loads. Disabled athletes, in particular, can avoid health issues by getting enough nutrition, as they are more susceptible to exhaustion, pressure, and poor performance than able-bodied athletes. Nutritional supplements are used to make up for a lack of nutrients. The use of nutritional supplements is widespread throughout the world. Athletes use dietary supplements to increase energy, stabilize strength, improve performance, reduce nutritional deficiencies, and maintain their health and immunity (Nurul Athirah Mohd Azhari, 2018).

Healthy eating and supplementation are common among all athletes, especially professional athletes in Malaysia. Malaysia's Ministry of Youth and Sports (KBS) has also issued additional nutritional guidelines to ensure that athletes follow all of them. With the frequent use of supplements and the importance of basic nutrition knowledge, the question arises as to whether e-sports athletes require supplementation or dietetic-balanced nutrition in their daily lives. Do e-sport athletes consume nutritional supplements? If yes, are there any guidelines for e-sports to take the supplements? If not, is there any method that they used besides taking the supplement in their daily routine as professional athletes? Consequently, this study aims to determine whether or not e-sport athletes consume supplements regularly. Or are there any methods they use to keep their bodies healthy?

## LITERATURE REVIEW

### The Concept And Development Of e-Sports

Electronic sports, also known as "E-Sports," are professional video game activities that use electronic equipment and internet connectivity to connect with game data and compete at the amateur, semi-professional, and professional levels in a variety of world-class competitions. In addition to e-sports, other terms with similar meanings include video games, cyber sports, computer games, and virtual sports. Space Invaders Atari, one of the largest e-sports contests, was held in 1980 with 10,000 competitors in the United States, making it the world's first large-scale video game competition. This Space Invaders game, created in 1978, was one of the most popular at the time. It's playable on arcade machines. E-sports were extremely popular in the early 1990s, and the number of players grew dramatically over the decade. The term "Electronic Sports" or "e-sport" dates back to the late 1990s, with one of the first sources using the term being a 1999 press release announcing the formation of the Online Gamers Association (Mohd Yusra Abdullah M. T., 2023).

E-sports in Malaysia first gained popularity in the late 1990s, when cyber cafés began offering video game programs on their computers. This circumstance effectively attracts video game or e-sports enthusiasts to their facilities regularly. Malaysia hosted the World Cyber Games in 2000, providing an opportunity for local talent to compete against top international players. Rinie Ramli won three gold medals for Malaysia and ranked fourth in the world in 2005. Due to the growing popularity of e-sports, the Malaysian Sports Commissioner registered and certified the Electronic Sports Association of Malaysia (ESM) on December 4, 2014 (Mohd Yusra Abdullah M. T., 2023).

In addition, the Electronic Sports Association of Malaysia (ESM) contributed to the establishment of the country's first e-sports academy. This academy was founded to develop more national professional players, but it also focuses on other important aspects of e-sports such as event management, team management, coaching, shout casting, judging, and more. In response to the Movement Control Order (MCO) issued in 2020 to combat the spread of the COVID-19 epidemic, the Ministry of Youth and Sports (KBS) and the Electronic Sports Association of Malaysia (ESM) have launched the My Esports Championship: MyStay@HomeChallenge to identify potential young talent for international competition. The online tournament involved 13 states and two federal territories. The event competes in two types of games, Mobile Legends: Bang Bang (MLBB) and Player Unknown's Battlegrounds Mobile (PUBGMobile), in groups of up to 64 teams for MLBB, with 320 players participating in PUBGMobile (Mohd Yusra Abdullah M. T., 2023).

### Classification of e-Sports Games

E-sports games can be played on four different platforms. The first is a personal computer (PC), which may be a desktop or a laptop. Second, via game-specific consoles like the PlayStation and Xbox. The third platform is handheld games, which are portable gaming consoles that can be taken anywhere, like the Sony PSP or Nintendo DS. The final platform is Mobile Games, which are designed to be played on the user's smartphone. In general, e-sports are divided into two categories based on the number of players: individual and group. The second classification is based on the game's genre. Among the most popular genres are strategy genres such as Dota2 and Warcraft, which require the player's skill to command a team, manage resources, and build a region, where players must focus entirely on making timely decisions to outperform their opponents (Mohd Yusra Abdullah M. T., 2022).

The sports genre is also popular among e-sports players because it was created for people who enjoy participating in physical activities. This genre is based on traditional physical sports such as football, basketball, archery, and more. Participants will essentially compete in virtual sports competitions that include game infrastructure and real sports legislation but are set in the world of e-sports. Real-world knowledge and expertise will help e-sports players win a competition; examples of this genre include Pro Evolution Soccer (PES) and FIFA Football. Many more genres can be included, and each has its own set of fans and followers. Other genres include adventure, combat, shooting, racing, and others (Mohd Yusra Abdullah M. T., 2022).

## Concept of Food Supplement

The United States Dietary Supplement Health and Education Act of 1994 defines supplements as products that help people improve their nutritional intake and include one or more of the following ingredients: vitamins, minerals, herbs, or amino acids. According to a study conducted by the European Food Safety Authority, supplements are additional, nutrient-dense foods intended to be consumed in addition to a normal diet. All foods, including supplements, can help people's health and well-being. According to Ghazali, supplements are readily available in tablets, capsules, soft gels, liquids, powders, or Chinese medicine stores, pharmacies, health food stores, clinics, and direct sales agents (Norshamliza Chamhuri, 2018).

The Dietary Supplement Health and Education Act (DSHEA) of 1994 defines dietary supplements as products containing minerals, vitamins, protein, herbs, and amino acids that are intended to supplement the diet. They were divided into three categories: nutrition supplements, sports foods, and ergogenic supplements, and can be purchased in a variety of forms on the market, including tablets, powder, gels, bars, liquid, and capsules (Nur Syaquina Zakaria, 2022). According to Western perspectives, the Western Diet (WD) is known for its high consumption of saturated fats, refined carbohydrates, and salt. This diet has been associated with an increased risk of metabolic disorders such as obesity, diabetes, and cardiovascular disease, as well as HPA dysregulation-related conditions such as cognitive impairment, emotional disorders, depression, anxiety, and chronic stress. The Western diet has been distinguished by highly palatable foods that can initiate eating addictive-like behaviors, such as seeking and overindulging in fat and sugar consumption, which causes long-term brain changes (Enriqueta Garcia-Gutierrez, 2022).

According to the Guideline on Registration of Health Supplements (2022), a Health Supplement (HS) is a product that is used to supplement a diet while also maintaining, enhancing, and improving the human body's health functions. It is available in small unit dosage forms (to be supplied), such as capsules, tablets, powders, and liquids, but no sterile preparations, such as injectables or eyedrops. It could include all or some of the listed combinations. Vitamins, minerals, amino acids, fatty acids, enzymes, probiotics, and other compounds are all bioactive substances. Second, extracts, isolates, concentrates, and metabolites come from natural sources like animals, minerals, and plants. Third, synthetic versions of the ingredients mentioned in (1) and (2) may be used only after their safety has been established.

## Pros And Cons Supplement Intake For Athletes

Certain athletes may benefit from specific supplements and sports foods in certain situations, but these should only be used after consulting with a certified sports dietician or qualified sports nutritionist. Athletes are especially concerned that the substances they consume may produce positive doping results. A positive drug test for these athletes could result in the loss of records or medals, as well as a temporary suspension from competition. Furthermore, the athlete's reputations could be harmed, and they may lose their job and income permanently (Nor Aijratul Asikin Mohamad Shalan, 2018).

Understanding an athlete's motivation for taking supplements is important for a variety of reasons, including developing strategies for responsible supplement use. Another reason is to reduce the possibility of excessive and harmful supplement use, as well as to distinguish ergogenic supplements designed to specifically improve performance from sports foods and medical supplements used to treat clinical issues. Every type of supplement may have different motivating factors. For example, foods and supplements containing essential nutrients (such as vitamins) are primarily consumed for health reasons, with performance benefits coming in second. In contrast, ergogenic aids are used to optimize performance (Ina Garthe, 2018).

Furthermore, research shows that most athletes can meet their nutritional requirements with a varied diet if they consume moderate to high levels of energy. As a result, athletes' support staff may want to promote a food-based approach to nutrition education. The final justification could be to identify the "grey zone," where athletes who use dietary supplements may develop a mindset that tolerates doping later on (the so-called "gateway" hypothesis). According to certain data, it appears that supplement users view doping more favorably and believe it is a useful strategy for improving performance (Ina Garthe, 2018).

However, all dietary supplements carry some risks, including the possibility of a positive doping result due to

the presence of illegal substances not disclosed on the label (Ronald J. Maughan, 2007). Nevertheless, interpret with caution. Certain athletes, particularly those who are younger, may find doping controls stressful and/or view nutritional supplements as less important information in these situations. Furthermore, the declaration of substances must be made seven days before testing. The majority of studies rely on athletes' self-reporting information through questionnaires or declaration reports, which can be a valuable source of data if provided correctly. Athletes may be tempted to declare a wide range of products "just in case," or they may neglect to declare supplements they have been taking or be aware that declaring contaminated supplements may result in an undesirable finding (Ina Garthe, 2018).

Supplement use in sports is typically viewed negatively, to reduce prevalence and protect athletes from using substances that could result in a positive doping test or harm their health. Supplements, on the other hand, may be necessary at certain stages of life or for athletes who face dietary challenges, such as vegan athletes or athletes with specific medical conditions (Ina Garthe, 2018). Datuk Lee Chong Wei said this in response to a question about the most recent doping incidents involving a diving athlete who won a gold medal at the 2017 Kuala Lumpur SEA Games in August. Meanwhile, Chong Wei recognized the athlete's emotions and, understandably, felt pressured by the situation, so he advised the athlete to strengthen his spirit to face the difficult situation. The former world number one player, who was suspended for eight months in 2015 after testing positive for doping, also advised any national athlete who becomes a health product ambassador to contact ISN regarding the sponsored product (Damanhuri, 2017).

### **Supplements Consumed By e-Sport Athletes Globally**

FaZe Clan, Inc. ("FaZe Clan"), the gaming and youth culture-inspired lifestyle and media platform, today announced a historic multi-year relationship with GHOST, a lifestyle brand that offers sports nutrition products, energy drinks, nutritional supplements, merch, and apparel. To mark the relationship, FaZe Clan will release a high-energy video showcasing some of the company's biggest stars. The video will emphasize FaZe Clan and GHOST's shared vision, which extends beyond gaming and celebrates both brands' roots in fitness, music, and sports. With a broad array of powdered and ready-to-drink products, GHOST provides efficacy and authenticity in all areas, including protein, pre-workout, gaming, energy, and wellness (Clan, 2022).

Zapp states that working in the space, have heard everything from energy and focus to eye health and mood enhancement. Nootropics provide a broad solution to the demand. However, if delve deeper into that category, they are especially looking for jitter-free energy, products that support their emotional well-being, increase concentration, memory, and reaction time, and also help alleviate stress. This could be a difficult discovery for product manufacturers attempting to perfect the recipe. Cognitive support, stress management, and vitality are important priorities, according to Nirmal Nair, founder and CEO of Sempera Organics. Functional beverages appear to be the preferred type, as fast-paced gamers may quench their thirst while also reaping the benefits of the supplements. Other health issues include impaired vision, eyestrain, headaches, neck, and back discomfort, pain in hands, wrists, and shoulders from repeated movements, concentration problems, difficulty sleeping, and weariness, among many others (Moloughney, 2024).

Professional esports players practice for hours every day, studying the game and planning with their teammates. Some gamers choose to use ergogenic substances, such as dietary supplements or psychostimulants, to perform at their peak. There is scant evidence that utilizing certain medicines will improve gaming performance. Although esports players may not require supplements, there are three important areas in which they may benefit: eye protection, cognitive skill enhancement, energy increase, and weariness reduction (Artur-Terbalyan, 2023).

Gaming dietary supplements are defined as products whose primary goal is to enhance each player's abilities. Sharpening the senses of casual gamers and virtual world enthusiasts is as vital as improving the performance of professional e-athletes. Dietary supplements may help gamers improve their attention, concentration, and memory. They can also provide energy and improve cognitive ability. Nootropics, adaptogens, vitamins, and minerals are the most common types of supplements used by gamers. Each of these categories has distinct traits and influences a certain aspect of game performance. Other dietary supplements that can be used also include caffeine, L-theanine, thyme-leaved granola (*Bacopa Monnieri*), *Rhodiola Rosea*, choline, lutein, and complex mixes (Džurdženič, 2022).

## METHODOLOGY

The qualitative method employed is oral research. The primary outcome of the face-to-face interview method has been the collection of data throughout the study. This makes the researcher's job easier during the interview session since the way the questions and answers are presented becomes clearer to both the researcher and the interviewer. Before conducting the interview, the researcher should undertake basic preparations by looking for information on the athletes' supplement intake. These documents selected on websites, articles, and newspaper clippings might also help provide additional information and context for developing interview questions.

During the interview, the researcher prepared and posed 8-10 questions. Questions must be covered in accordance with the study's objectives. They must respond to all of the questions posed. The interview sessions last 30 minutes for each person. There were roughly 7 Mobile Legend athletes interviewed for the purpose of conducting this study. In addition, audio and video recordings are used to help with the transcript documentation process. This study met the time constraints stated in the interview session. The researcher will next listen to the interview recording again and create a transcript in accordance with the format specified.

## RESULTS

According to the interview results, the majority of athletes do not consume dietary supplements that are needed for their body parts as professional athletes. However, they do some things to keep their limbs healthy and their minds alert. The findings of the study are summarized in the table below:

| No. Informant | Meal Plan/<br>Nutritionist | Training/ Exercise | Additional Food<br>(dates, raisins, etc.) |
|---------------|----------------------------|--------------------|-------------------------------------------|
| Informant 1   | X                          | √                  | X                                         |
| Informant 2   | X                          | √                  | √                                         |
| Informant 3   | X                          | √                  | X                                         |
| Informant 4   | √                          | √                  | √                                         |
| Informant 5   | X                          | √                  | X                                         |
| Informant 6   | √                          | X                  | √                                         |

*Table 1: Practical Lifestyle of e-sport athlete Mobile Legends*

### Follow a Meal Plan or Nutritionist

Hiring a nutritionist has become an important part of some professional e-sports clubs and academies' strategies for improving athlete performance. Nutritionists are professionals in developing meal programs that are tailored to the specific needs of e-sport participants, who frequently confront high cognitive and visual demands during extended gaming sessions. These meal plans are precisely developed to ensure a well-balanced intake of macronutrients and micronutrients, which promotes prolonged energy, mental sharpness, and general wellness. By having a dedicated professional handle their food, e-sport athletes can focus on their training and competition without thinking about the complexity of nutrition, allowing them to reach their full potential in the game.

Furthermore, some clubs go a step further by offering uniform meal programs to their athletes. These plans are frequently tailored to fit the high-stress environment of professional gaming, where maintaining peak mental and physical health is critical. By managing athletes' food intake, these clubs ensure that each meal is meant to improve performance, reduce fatigue, and aid in recuperation. This strategy not only aids in the maintenance of a steady diet but also decreases the possibility of nutritional shortages, which could impair the athletes' gaming abilities. As a result, e-sport companies who invest in nutritionist services and food planning are more likely to observe enhanced performance and longevity among their participants.

### Training or Exercise

Despite the sedentary nature of e-sports, physical activity is still an important part of an athlete's entire training program. Many e-sport competitors incorporate recreational activities into their training regimens, frequently participating in group exercises or individual workouts on weekends. These activities are critical for reducing

the physical demands associated with long gaming sessions, such as bad posture and repetitive strain injuries. Participating in sports, strength training, or cardiovascular activities improves physical fitness, which leads to increased endurance and mental attention during gaming sessions increasing athletes' performance and longevity. Some clubs organize evening leisure activities such as badminton, futsal, and volleyball. There are also individuals who jog and workout alone for those who prioritize fitness in their daily lives.

Furthermore, recreational activity gives an essential mental break from the intense focus required for e-sports. Group activities can also promote team cohesion and social engagement, which are both helpful to mental health and stress management.

E-sport athletes who incorporate regular physical activity into their schedules improve not only their overall well-being but may also gain a competitive advantage. This balanced approach promotes both physical and mental health, ensuring that players are ready for the demands of their sport.

## Additional Food

Some e-sport players and organizations are practicing consuming additional meals and supplements, such as dates, brain booster chocolate, raisins, and vitamin C. These supplements were chosen because of their ability to improve cognitive function, give rapid energy, and promote general wellness. For example, brain booster chocolate is frequently used to improve mental alertness and cognitive performance, whereas Vitamin C can help with immune support and recovery. The inclusion of such foods can help athletes perform better by delivering targeted nutritional benefits that a typical diet may not always provide.

However, some of the e-sports community does not prioritize or even consider these supplements in their dietary plan. This lack of awareness can be attributed to several issues, including a lack of information about the benefits of these additional foods or an overall undervaluation of their impact on performance. Educating e-sport athletes on the benefits of including supplements in their diets could assist in closing the gap, resulting in more widespread adoption of these beneficial practices. Increasing awareness and comprehension of how supplements can improve both mental and physical performance could greatly assist those who are currently ignorant of their significance.

## DISCUSSIONS

Following observation, the study's findings discovered that three out of six athletes interviewed did not take supplements regularly. The findings of the study are summarized in the table below:

| No. Informant | Junk Food | Supplement<br>(For bodies, minds, eyes, etc.) |
|---------------|-----------|-----------------------------------------------|
| Informant 1   | √         | X                                             |
| Informant 2   | √         | X                                             |
| Informant 3   | √         | √                                             |
| Informant 4   | √         | √                                             |
| Informant 5   | √         | X                                             |
| Informant 6   | √         | √                                             |

Table 2: Junk food and supplement intake of e-sport athletes Mobile Legends

The findings discovered that half of them utilize supplements daily. The majority of them stated that they only take Vitamin C as a food supplement. Some use supplements to improve their eye health. However, it is not utilized daily. That will only be taken into consideration if they are reminded by those around them. This is because they tend to be less open about their usage of supplements and the importance of taking them in their daily life. They prefer not to consume it because it is not a required additional food for them to take throughout being an athlete. Some e-sports athletes believe that eating a balanced diet is enough to keep their bodies healthy and their minds sharp.

Nonetheless, some of them believe that they require additional food in their lives. They agree that their healthy lifestyle as an e-sports athlete has certain limitations. Although they only have to face the screen for training

throughout the day and do not need to use their physical bodies like other physical sports athletes, e-sports athletes may require additional supplements to help them with their eyes to face the screen, their bodies to sit for long periods training, and their minds to be focused and efficient in making decisions when competing or training.

Furthermore, their diet is not completely restricted, since they are still free to consume junk food and other things. A decent supplement can assist athletes meet any additional needs in their bodies without them even realizing it. For example, if their body lacks Vitamin C, taking Vitamin C supplements can help complete the body's needs regarding the Vitamin C requirements that aren't enough entirely.

After completing interviews, the findings revealed that the majority of athletes agree that supplement intake is necessary as a supplement to their daily meals. The findings of the study are as follows:

| No. Informant | The need to take supplements (in their perspective) |
|---------------|-----------------------------------------------------|
| Informant 1   | Yes                                                 |
| Informant 2   | Yes                                                 |
| Informant 3   | Yes                                                 |
| Informant 4   | Yes                                                 |
| Informant 5   | No                                                  |
| Informant 6   | No                                                  |

*Table 3: The need to take supplements from athlete perspectives*

As a result, it can be concluded that the importance of taking supplements in the life of an e-sports athlete is unquestionably significant, and everyone participating in the e-sports sector must consider it.

## CONCLUSION

In conclusion, the survey on supplement intake among Mobile Legends athletes in Malaysia highlights a growing trend where gaming professionals are increasingly aware of the potential benefits that dietary supplements can offer to enhance their performance and overall health. The findings suggest that while many athletes are integrating supplements into their routines, there is still a significant variation in the types and reasons for supplement use. This diversity underscores the need for tailored guidance and education on safe and effective supplement practices to ensure that these athletes can make informed decisions that align with their health goals and gaming performance requirements. Furthermore, the survey underscores the importance of continued research into the specific needs of esports athletes and the role of supplements in optimizing their health and performance.

As the esports industry continues to expand, a deeper understanding of the relationship between supplement intake and athletic success will be crucial. This knowledge will help in developing evidence-based recommendations that can support the well-being and competitive edge of Mobile Legends athletes, ultimately contributing to their success and longevity in the dynamic world of esports. Professional e-athletes, in particular, frequently experience great strain on their senses and entire body as a result of the rigorous training required. As a result, they deserve the same support as real-world athletes, who frequently use dietary supplements. Doing so will give them a competitive advantage, improve their senses, and deliver even better results. Because every substance has distinct qualities, utilizing supplements can be appealing even to normal gamers looking to unwind with their favorite game after a long day. In this case, gamers will surely enjoy effects such as improved focus, weariness, and fatigue reduction.

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