Newsletter

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Advances in sports nutrition and performance goals

Prof. Chandima Madhu Wickramatilake
President of NSSL

Sports nutrition is a growing field of interests with wider range of nutritional managements and interventions focus to improve the performances and the general health of competitive athletes and recreational athletes. The recent advances in sports nutrition has improved the performances of athletes in many parts of the world, though it is an evolving tend in Sri Lanka.

Hence, I would like to share some of the key advances or new concepts developed in sports nutrition during the recent past. The nutrition plays a big role in strengthening the competition performances, training, adaptation, recovery, minimizing fatigue and injuries.

The individualized nutritional interventions based on performance goals benefit the athlete by the elevation of self-esteem and by upgrading the quality of his overall professional carrier. The nutritionist should be well engaged in the sports team that makes him/her aware on the type of sport, the intensity of training and the expected goals of the individual athlete. That enables the nutritionists to provide adequate education to the athlete about his/her nutritional requirement, food selection, planning and cooking own meals when necessary.

Strenuous training especially in endurance athletes may impair the immunity and cause gastrointestinal disturbances. Therefore nutritional interventions that improve the immunity of the athlete are helpful to minimize the infection and GIT disturbances and therefore improve the performances, recovery and general health.

Maintenance of appropriate bone health during sports is important to prevent micro-damage and bone overuse injuries such as stress fractures. Bone is a nutrition modulating tissue which appears to be sensitive to the availability of energy, vitamin D and calcium during training and exercise.

State of sleep and the wakefulness affects the performances in sports. Athletes are known to have short total sleep duration and sleep disturbances. There are potential nutritional

interventions that have been suggested to improve the sleep such as consuming high glycaemic index food during recovery. An appropriate nutrition and hydration plays a significant role among the many factors that affect the recovery period after training and competition. At present, there is an increased tendency of using functional beverages and supplements other than routine recovery snacks. Supplement usage by the athlete need to be done with caution under the strict supervision of a qualified nutritionist and it is necessary to be individualized.

However, it is necessary to be mindful on the inter-individual variation in the response to any nutritional intervention regime and supplements. These variations are supposed to be due to the differences in the genetics and the microbiota of the individuals.

In the local context, there are some initiatives to improve the nutritional wellbeing of the national level athletes. Further, I suggest to put more effort to uplift the nutritional status of the athletes at all level in the country by providing individualized attention. Locally the field of sports nutrition has a long way to go to reach the international standards. It is an unattended area which deserves extensive regular educational programmes and scientific research with well-planned clinical trials.

Dietary guidelines to follow after being in the hospital with COVID-19

Dr. Disna Kumari
Editor of NSSL
Dietician,
Kings Hospital (Pvt) Ltd.,
Colombo 05

COVID-19 is a new infection that affects the lungs and can make you sick and infected. After the infection some people will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness therefore, Some patients may have been in the hospital need hospitalization due to the illness with the clinical fatures of fever, cough, shortness of breath, fatigue, pain, nausea and loss of appetite.

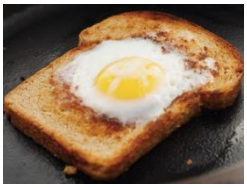
During the hospital stay they are given the foods fortified with extra calories and protein. In certain instances they had been fed into the stomach with a tube inserted through nose or mouth, or through a vein (parenteral nutrition).

At home, these patients may feel too weak or tired to eat and notice weight loss. You also might be eating and drinking less than before you got sick. This is completely normal; however, you need to have a better nutritional support and prevent further weight loss to rebuild your strength and immune system. Therefore, replenishing the vitamins, minerals and antioxidants is an integral part of your recovery diet.

Include plenty of fresh and seasonal fruits and veggies, as well as nuts and seeds in your diet, and have five to seven servings of them every day. Eat small frequent meals 4-6 times per day or eat every couple of hours. Eat foods high in protein at meal times. A protein-rich diet helps to repair the damaged body tissues and the muscle loss that occurred while the infection lasted to boost the immune system too.

Foods high in protein are fish, eggs, chicken, milk and milk products (curd, yogurt and cheese), nuts, beans and other legumes. Different food preparation methods will be helpful to regain your appetite and to have enough nutrition per day.

Use egg omelette, scrambled eggs, bullseye eggs to have a change in your diet

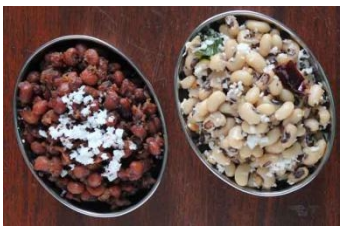




Consume fresh milk, flavoured milk, milk shake, yogurt drinks, as a snack




Eat a handful of nuts


Add boiled legumes for your breakfast or as a snack




During the postconvalesent period your foods should include calorie-dense foods (more energy) to improve the ability to recover faster. It is better to select healhty carbohydrates such as whole grain breads, pastas, rice or cereals with enough amount of fruits and vegetables at each meal.

Drink eight to ten glasses of water every day and include soups, broths, herbal tea and non-caffeinated drinks etc. in your diet to speed up your recovery. Finally record your intake to track whether you are getting enough foods to fulfill your nutritional requirements.

NutriCa Art Competition NSSL 2021

Category 1

Name : Sehas Sasrutha Kalansooriya

Place : Merit

School : Opatha Rahula Primary School, Galle

Health Benefits of Ceylon White Tea (*Camellia sinensis* L.)

Dr. Kanchana Abeysekera
Department of Agricultural Technology
Faculty of Technology
University of Colombo
Email: kanchana@at.cmb.ac.lk

Tea is the most popular beverage in the world next to water and reported to have array of health benefits. It is estimated that globally around 3.5 billion cups of tea are consumed daily. Tea is manufactured from freshly harvested topmost immature leaves and unopened buds of an evergreen plant, *Camellia sinensis* in over 35 countries including Sri Lanka.

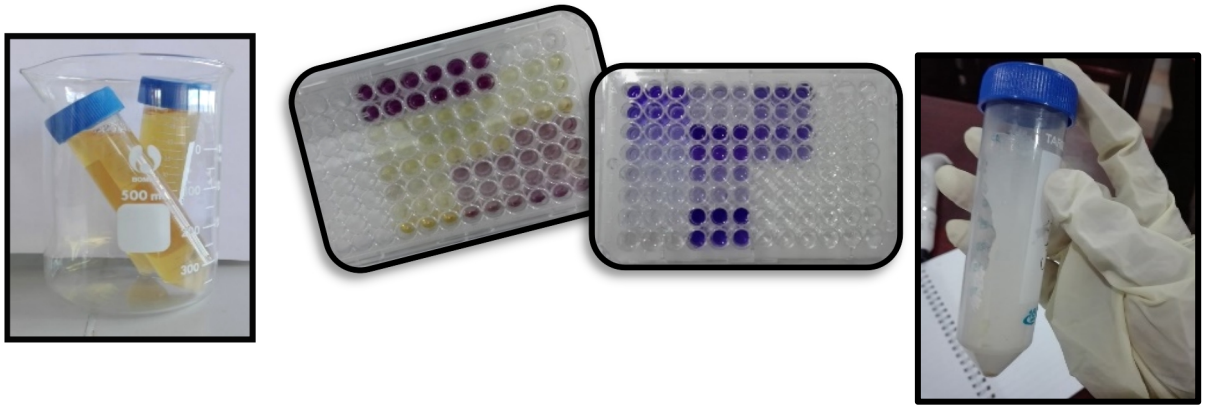
Based on the manufacturing technique there are four main types of tea namely Black tea, Green tea, Oolong tea and White tea. White tea is known as the lightest and most delicate tea and it is processed from very young barely opened tea buds covered with tiny silvery hairs. After picking, they are left to wither, and air dry either in the sun or in a controlled indoor environment to prevent oxidation reactions.

Among different teas in the world, Ceylon tea (Sri Lankan tea) is known as the finest tea in the international trade. Currently country produces variety of tea including White tea. Hand harvesting and slow processing is practiced in order to protect the unique sensory attributes of Ceylon White tea. Only slightly curved tea buds, just over 2.5 cm, covered with silver or golden hair goes into making of Ceylon White tea. These types of fresh leaves are comparatively scarce amidst the tea plantations in Sri Lanka and thus has a limited production. Ceylon

White tea is the highly demanded type of tea in the international market with market price around Rs. 20,000 per kg (nearly 20 times expensive compared to black tea). There are two main grades of Ceylon White tea namely Golden Tips and Silver tips.

However, to the best of our knowledge there was no single study conducted in the country on health benefits of Ceylon White tea although it is highly priced in the international market. Thus, this research was conducted to evaluate the health benefits of Ceylon White tea.

Range of in vitro antioxidant and antidiabetic related properties were studied for two commercially important Ceylon White tea grades (TRI 2043) namely Silver tips and Golden tips. Two grades of commercially important Ceylon black tea namely Pekoe Fannings (PF) and Broken Orange Pekoe Fannings (BOPF) were also studied for comparison. Antioxidant properties were studied using Total Polyphenolic Content (TPC), Total Flavonoid Content (TFC), DPPH radical scavenging activity, ABTS radical scavenging activity and Ferric Reducing Antioxidant Power (FRAP) in vitro high through put screening assays.



Antidiabetic related properties of Ceylon white tea were studied using in vitro diabetes complications management assays namely anti-glycation and glycation reversing activities in Bovine Serum Albumin (BSA)-glucose model.

Results showed that selected Ceylon White tea had antioxidant and antidiabetic properties via multiple mechanisms. Further, in general Ceylon white tea showed higher anti-glycation and glycation reversing properties compared to the tested black tea. Furthermore, Ceylon White tea showed comparable antioxidant activities compared to black tea.

This research was conducted at Department of Agricultural Technology, Faculty of Technology, University of Colombo and funded by University of Colombo, Sri Lanka (Grant No: AP/3/2/2020/SG/29). Research activities were carried out by Ms. Nethmini Senevirathne under the supervision of Dr. WKSM Abeysekera (Senior Lecturer, Department of Agricultural Technology, Faculty of Technology, University of Colombo) and Dr. WPKM Abeysekera (Senior Lecturer, Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura). Tea samples were provided by Dr. K.R.W. Abeywickrama, Sri Lanka Tea Board, Colombo 03, Sri Lanka. Currently anticancer activities of Ceylon White tea are in progress with the collaboration of the Institute of Biochemistry, Molecular Biology and Biotechnology (IBMBB), University of Colombo, Sri Lanka.

Contributary Authors:

Dr. Kaushalya Abeysekera, Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura

Ms. Nethmini Senevirathne, Department of Agricultural Technology, Faculty of Technology, University of Colombo

NutriCa Art Competition NSSL 2021

Category 3

Name : P Ravidi Thinoda

Place : Merits

School : Rathnavali Balika Vidyalaya, Gampaha

Coconut oil:

Is Sri Lankan traditional cooking oil safe to consume?

Ms. Malika Fernando
Research Officer- Nutrition,
United Nations World Food Programme,
Sri Lanka

Coconut oil is a subject to controversy for a long time for its tendency to raise blood cholesterol which is a risk factor for cardiovascular disease. In Sri Lanka, coconut (*Cocos nucifera*) is one of the major ingredients in the traditional diet. Coconut oil, milk, and scraped or ground flesh are the main coconut products used in culinary purposes. Nearly, 1.5 coconuts/day are consumed in the Sri Lankan households and a person consumes almost 38 g of fat from coconut daily. This accounts 10-20% of the total calories in an average Sri Lankan diet and nearly 60% of the total fat intake. Furthermore, coconut is the major source of saturated fat in the Sri Lankan diet that contributes to nearly 80% of the total saturated fat intake. Therefore, it is important to identify how and at which levels the coconut consumption can be health detrimental.

The fatty acids composition in coconut is unique and different to other plant oils such as sunflower oil, canola oil and olive oil. It is predominantly (approximately 90%) saturated fat, in which 2/3rd is medium chain fatty acids. Coconut oil is a poor source of unsaturated fats. Other plant oils comprised mostly of unsaturated fats (except palm oil), which are recognized as heart-friendly. Diets rich in saturated fat, cholesterol, trans fats and hydrogenated fat (such as butter and margarine) generally held to have an adverse effect on blood lipids by increasing blood cholesterol that leads to coronary heart disease. However, medium chain fatty acids are considered safer than long chain saturated fatty acids (which are predominantly found in meat/ animal fat) in terms of their blood cholesterol raising ability. This makes coconut oil an exception to a typical health detrimental saturated fat source.

Many researches looking at the effect of coconut oil on cardiovascular disease compared to other plant oils rich in unsaturated fats, cautioned against the use of coconut oil. However, research studies carried out in India and Indonesia showed no difference in coconut consumption levels between coronary heart disease patients and healthy people. Another Indian study found that the occurrence of cardiovascular disease events was independent of coconut oil consumption. It is also identified that medium chain fatty acids are less prone to deposit in the walls of blood vessels and adipose tissue that leads to cholesterol buildup in the body. Moreover, they effectively produce ketone bodies during metabolism, which makes coconut oil a good source of ketones that can be used in ketogenic diets to treat diseases such as epilepsy and for weight reduction. In addition, virgin coconut oil is recognized to provide more favorable effects on blood cholesterol levels and cardiovascular disease, due to its higher antioxidant capacity caused by the preserved phenolic compounds during its wet-manufacturing process.

The dietary guidelines for a healthy life recommend to consume moderate amounts of fat in the diet, that provides only 15-30% of daily calorie intake. Moreover, saturated fat should provide not more than 10% and trans fats should provide less than 1% of the daily energy intake. Since coconut oil, milk and scrapes are the main sources of saturated fat in the Sri Lankan diet, it is important to be cautious on the amounts of coconut consumption, to avoid exceeding recommendations for fat. However, it is found that frying with coconut oil is safer than using other plant oils (unsaturated fats), because the amount of trans fats formation is minimum in coconut oil. Thus, moderate amounts of coconut oil consumption in the traditional diet is not harmful, unless if someone is on a strict dietary calorie and fat restriction due to obesity or disease conditions such as cardiovascular disease and fatty liver disease.

Aflatoxin toxicity in coconut oil

Aflatoxin is a mycotoxin produced by Aspergillus species (fungus), during poor coconut oil manufacturing process using copra. Aspergillus fungus tends to grow on copra which are not adequately dried and the aflatoxins that are released contaminate the extracted oil. However,

proper manufacturing process with standardized drying of copra will avoid fungal growth and will result aflatoxin – free safe to consume coconut oil. Furthermore, virgin coconut oil extraction using fresh coconut milk/cream will not provide any room for contamination with aflatoxins during the manufacturing process. Hence, virgin coconut oil and copra-derived coconut oil manufactured using good manufacturing practices will not impose any significant aflatoxin toxicity.

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NutriCa Art Competition NSSL 2021

Category 1

Name : M B Viduni Pehesarani

Place : Merit

School : P. De. S. Kularathna Maha Vidyalaya, Ambalangoda

NutriCa Art Competition NSSL 2021

Category 1

Name : Nimeth Selanga De Zoyza

Place : Merit

School : Sri Dewananda College, Galle

Exclusive Breastfeeding: are we up to standards?

Dr. Thushari Bandara
Senior Lecturer
Department of Medical Laboratory Science
Faculty of Allied Health Sciences
University of Ruhuna

Human milk provides all nutrients required for a healthy growth and development of an infant. It is safe, readily available and affordable. Human milk is a live substance which possesses unparalleled immunological and anti-inflammatory properties that protect both the baby and mother from various illnesses. In addition to nutritional and health benefits, breastfeeding also improves maternal mood and interactive behaviors, indirectly contributing the development of infants.

According to World Health Organization (WHO) Exclusive Breast Feeding (EBF) is defined as no other food or drink, not even water, except breast milk (including milk expressed or from a wet nurse) for 6 months of life, but allows the infant to receive ORS, drops and syrups (vitamins, minerals and medicines). The WHO recommendation is to exclusively breast feed the babies during their first six months of life.

Though breastfeeding is widespread in many countries EBF practice is reported to be limited. Sri Lanka adopted the WHO recommendation on EBF in 2005. Demographic and Health Survey 2006/07 has reported that 75.8% of Sri Lankan infants between 0 and 5 months are exclusively breast fed. This was the highest EBF prevalence reported in the South East Asian region. However, most of the studies conducted over past few years at different locations in Sri Lanka have indicated less EBF rates.

Most of the studies on EBF practices have conducted either by 24-hour or since-birth recall methods. Both methods usually overestimate the actual EBF rates. Therefore determination of the human milk intake of the babies by a scientific technique other than conventional surveys is of paramount importance.

There is a worldwide inadequacy in reliable data on the quantity of human milk consumed by infants. This is mainly due to the difficulty of assessing the actual amount of milk consumed by the infants through conventional approach named test-weighing. The technique involves weighing the baby before and after each of the breastfeed, throughout the day. The specificity of this technique has been questioned. It also affects the normal feeding pattern of the infants and time consuming.

An isotope technique based on the body water turnover to quantify the milk intake was proposed in 1969. This method has successfully adopted first on various animals and with the use of stable isotopes it has been used on humans since 1982. The principle of the method is deuterium oxide is administered to the mother, and then by using the rate of deuterium appearance and disappearance in the baby, the amount of breast milk consumed by the baby is calculated. The deuterium oxide dose-to-mother technique can be used to provide quantitative information on the intake of human milk by breastfed infants as well as the intake of water from sources other than human milk. Therefore the method is useful to assess whether the baby is exclusively breast fed or not.

One of the research studies we conducted in the University of Ruhuna, Sri Lanka enrolled 48 EBF mother-baby pairs to determine the milk intake. The results of the study indicated that the mean human milk intake of the EBF babies as 750g/day which is compatible to the values reported elsewhere in the babies with similar age.

Further this study has found that the mean values of the non-milk (oral) intake increases across the ages (30 g/day for infants less than 2 months of age; 70 g/day for infants between 2 and 4 months of age; and 100 g/day for infants between 4 and 6 months of age). According to the deuterium-to-the-mother technique, only 18 infants (37.5%) were found to follow EBF practice in the study group.

We recruited only EBF, healthy babies for the study. The selection was done using a screening questionnaire and we requested the help and guidance of the Midwives of the study areas to identify reliable EBF babies. The study period extends for two weeks and during that time these mother-baby pairs were visited every day and were encouraged on EBF to make sure that they won’t give anything to their child other than breast milk. Our understanding

was 100% of the babies in the group were on EBF. However when comes to the results we found that only 37.5% of the babies have underwent EBF.

This highlights the bias of all recall method in order to determine the EBF rates in any country. Even though the recall methods indicate very high EBF rates most of these figures are not realistic. The interpretation of the definition of EBF by the general community is not correct.

Therefore it is a timely requirement that the maternal and healthcare professionals of Sri Lanka to study the gaps in the existing breastfeeding promotion and education programs in their areas to take necessary actions to improve the exclusive breastfeeding practice.

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“Together will nourish our Mother Lanka”

Yalini Shanmuganathan, Registered Dietitian/ Nutritionist

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ChildFund Sri Lanka

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සුවය ලබමින් සිටින කාලයේ දී දරුවාට සාමාන්‍ය වර්ධන රටාව යළි හිමි කර ගැනීමට වැඩියෙන් ආහාර ලබාදිය යුතුය. එසේ ආහාර නොගතහොත් දරුවකු හට සිය සාමාන්‍ය වර්ධන රටාව යලි හිමිකර ගැනීමට අසීරු විය හැක.

දරුවන් අසනීප වීමට පහත සඳහන් හේතූන් මූලිකව බලපානු ලැබේ

- දරුවන් අඩු උපත් බර ඇතිව ඉපදීම
- ප්‍රමාණවත් පරිදි ආහාර නොගැනීම නිසා මන්දපෝෂණය ඇති වීම ඒ නිසා ප්‍රතිශක්තිකරණය දුර්වල වීම.
- නිවසේ හා ප්‍රදේශයේ පවතින දුර්වල පරිසර හා සනීපාරක්ෂක තත්ත්වයන්

- සෞඛ්‍යාරක්ෂිත හුරු පුරුදු අනුගමනය නොකිරීම නිසා වසංගත පැතිරීම වැනි කරුණු හේතු වේ.

රෝගී අවස්ථාවලදී ආහාර ලබාදිය යුතු ආකාරය ගැන අවධාරණය කළ යුතු කරුණු

- දරුවාගේ ආහාර රුචිය ඇතිවීමට ඔහු කැමති ආහාර ප්‍රිය මනාප ලෙස සකසා දීම.
- විවිධත්වයෙන් යුත් පෝෂ්‍යදායි ආහාර ලබා දීම (වර්ණයෙන්, සුවඳින්, රසයෙන්)
- අර්ධ ඝන ආහාර සහ පහසුවෙන් දිර විය හැකි ආහාර ලබා දීම. (යෝගට්, උකු සුප්, කිරි, ජෙලි, හොඳින් පොඩි කළ පළතුරු යුෂ, උකු කැඳ)
- කුඩා දරුවන්ගේ ආමාශය කුඩා බැවින් වරකට ගත හැකි ආහාර ප්‍රමාණය අඩුය. එම නිසා නිතර නිතර සුළු ප්‍රමාණවලින් ආහාර ලබා දීම.
- වැඩි ශක්ති ප්‍රමාණයක් අඩංගු ආහාර දරුවන්ට ලබා දිය යුතු වේ.
- විටමින් සපිරි ආහාර (විශේෂයෙන් විටමින් A සහ C අඩංගු වට්ටක්කා, කැරට්, කොළ පැහැති පලා, බිත්තර, පැපොල්, අඹ, කෙසෙල්, නාරං, දොඩම්, නෙල්ලි යනාදිය)
- දරුවාට බඩගිනි නොදැනේ නම් බලෙන් ආහාර කැවීමෙන් වැළැකීම.
- දරුවා සනසමින් ඔහු සතුටු කරමින් ආහාර කැවීම.
- දරුවා පාවනයෙන් පෙලේ නම් දියර වර්ග ආහාරයට දීම.
- අසනීප වූ දරුවන්ට අවශ්‍ය ඝණ ආහාර දරුවාගේ රෝගී තත්ත්වයට ගැලපෙන පරිදි ලබා දීම.
- නිරන්තරයෙන් දරුවා සමඟ කාලය ගත කිරීම, දරුවාට සවන් දීම, දරුවාට ආදරය හා සෙනෙහෙස නොඅඩුව දක්වීම හා දරුවා ප්‍රිය කරන දෙයක් (සෙල්ලමක්, කතන්දරයක් කියාදීම වැනි) සඳහා දරුවා සහභාගී කරවා ගැනීම කළ යුතු වේ.
- රෝගය සුව වූ පසුව ද වර්ධනය නැවත යථා තත්ත්වයට පත්කර ගැනීම සඳහා වැඩිපුර ආහාර වේලක් ලබා දිය අතර මව්කිරි දෙන දරුවන්ට සුපුරුදු පරිදි නොකඩවා මව්කිරි ලබා දීම.

කම්මුල්ගාය, පැපොල, වැනි රෝග වළඳුන විට බොහෝ දෙනා රෝගියාට මස්, මාළු, කරවල, බිත්තර වැනි ආහාරයට නොදෙති. එවැනි ආහාර ගැනීමෙන් රෝගය වැඩි වෙතැයි විශ්වාසයක් පවතී.

එහෙත් එවැනි වෛරස් රෝගයකට ගොදුරුව සිටින රෝගියාට මේ කාලයේ වැඩිපුර ප්‍රෝටීන ආහාර ලබා දිය යුතු වේ. එසේ වැඩිපුර පෝෂණය අවශ්‍ය කාලයට දියර ආහාර සහ දිය එළවළු පමණක් ලබාදීමෙන් රෝගී තත්ත්වය සුව වීමට ද කල්ගත වේ.

NutriCa Art Competition NSSL 2021

Category 2

Name : S Thamodya Vishwadini Subasinghe

Place : Merits

School : Mahinda Rajapakse Vidyalaya, Homagama

NutriCa Art Competition NSSL 2021

Category 1

Name : Hasadi Sayumdi Lenora

Place : Merit

School : Southlands College, Galle

Dietary Supplements in Sports: How to reduce the risk of Doping among national athletes?

Dr Dhammika Senanayake
Institute of Sports Medicine,Colombo

There is no single definition for the dietary supplements in legal context or in nutritional science .The US food and drug administration (FDA, 2019) has the following definition for supplements. “A dietary supplement is a product taken by mouth that contains a ‘dietary ingredient’ intended to supplement the diet”. The dietary ingredients in these products may include: vitamins, minerals, herbs or other botanicals, amino acids and substances such as enzymes, organ tissues, and metabolites. Dietary supplements can also be extracts or concentrates and found in the forms of tablets, capsules, soft gels, gel caps, liquids or powders (FDA, 2019).

Supplements are regulated on national rather global basis and regulation vary between countries. In US, manufacturers are responsible for ensuring the specific regulations are follows;

- The product that manufactures or distributes are safe
- Any claims made about the products are not false or misleading
- The products comply with the federal food, drug and cosmetics act and FDA regulation in all other aspects

  (FDA, 2019)

In Europe, the European Food Safety Authority (EFSA) has similar regulations and definitions on dietary supplements and has established a framework for regulations of vitamin and mineral supplements to protect consumers against potential health risk and to ensure that they are not provided with misleading information (Directive 2002/46/EC.EFSA, 2017).

Dietary supplements are famous among physically active persons and the athletes around the world. But the government systems of regulations and independent manufacturing quality programs do not include specific laboratory testing for banned substances according to the

World Anti-Doping Agency (WADA) list. A separate regulatory framework to evaluate supplements for their risk of provoking a failed doping test would be needed. However, there is limited interest from regulatory bodies, perhaps because this represents such a small part of the market (Garthe & Maughan, 2018).

Dietary supplement in sport

International Olympic committee (IOC) consensus statement on dietary supplement in 2018 explain the benefits of dietary supplements in high performance athletes. Dietary supplement can play a small role in an athlete's sports nutritional plan, with products that include essential micronutrients, sports food, performance supplements and health supplements all potentially provide benefits. Some supplements, when used appropriately, may help athletes to meet sports nutrition goals, train hard, stay healthy and injury free while some supplements directly enhance competition performances (Maughan R J et al., 2018)

Prevalence of supplement use among athletes

Use of dietary supplements in athletic population is reported to be relatively high according to most of the studies (Baylis et.al., 2001). In a meta-analysis by Sobel & Marquart, (1994) showed 46% of college athletes and 59% elite athletes used dietary supplements. Prevalence of supplement usage vary with type of sports and increase with the higher level of training/performance (Maugham et al., 2018) At elite levels, use of supplements is high. Among 440 Canadian elite athletes reported a supplement use was 81%-100% of whom 76% were completing at the international level (Lun et al., 2012). Use of dietary supplements are high among national level athletes in Sri Lanka (de Silva et al. 2010). In selected sports (athletics, cycling, swimming, karate, football and badminton) percentage use of supplements is high as 94 %. Most of these athletes consume multi-vitamin preparation, vitamin E, calcium preparation, electrolyte drinks, energy food and drinks, creatine, iron supplements and herbal preparations. Among these athletes only a few percentage obtain specialized nutritional advice and most of them use supplements in ad hoc basis. (de Silva et al., 2010). Currently whey protein products are the most famous supplement among national athletes in Sri Lanka. According to the official data of Institute of Sports Medicine (2019) all registered sports teams has received one or more dietary supplement.

Way to reduce the risk of doping among national athletes who use supplements?

Considerable expert knowledge is necessary to recommend the appropriate supplement into the nutritional plan of the athletes and to avoid Ani-Doping Rule Violation (ADRV).Therefore, persons involve in national level sports teams including the team physicians and nutritionists need adequately updated knowledge in doping in sports and supplement use. Here are some guidelines to avoid ADRV, during the usage of dietary supplements for national level athletes in Sri Lanka.

Guidelines 1-5 (Maughan et al., 2018)

1. All therapeutic/prophylaxis supplements use should involve expertise of sports / team physician.
2. Team physician, nutritionist/dietician and other experts in the field need to confirm the performance benefits of the supplement. They need pragmatic approach to assess risk and benefit of sports related supplement.
3. Team physician must take maximum precaution to protect the health of the athlete and to avoid ADRV
4. All team officials must follow the instruction of team physician and the other scientific experts.
5. Regular dietary assessment by qualified nutritionist/dietician is important for all national teams to avoid dietary deficiencies and to keep higher performance level in elite athletes.
6. All Team physicians need to work together with the Institute of Sports medicine, Ministry of sports (ISM)
7. Regular education from Sri Lanka Anti-Doping Agency (SLDA) regarding the Anti-doping rule violation is essential for all team players and the officials.

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NutriCa Art Competition NSSL 2021

Category 3

Name : Hasindie Archana Withanage

Place : Merit

School : Sangamiththa Balika Vidyalaya, Galle

NutriCa Art Competition NSSL 2021

Category 2

Name : Upenya Janumi Ilayperuma

Place : Merits

School : Musaeus College, Colombo 7

Is Coconut Oil a "Super" Food?

Dr Ananda Chandrasekara
Senior Lecutrer
Department of Applied Nutrition
Wayamba University of Sri Lanka

It is understanable that coconut oil is a specialty food. But naming coconut oil as a super food is not scientifically correct. It is not new to name a variety of foods as superfoods from time to time. In the past, soybeans, lentils, drumsticks, and avocados were known as superfoods, and animal foods such as milk and eggs are still classified as such, but the naming is based solely on a particular quality of the food.

What is more important in nutrition, however, is not the effect of an isolated diet but the effect of a general diet on individuals. Also, no matter how "super" a food is, the amount consumed as well as the health status of the consumer, age, etc. should be taken into consideration. Thus food cannot be categorized into good, bad or superior in classification and can be used with or without any food depending on the occasion.

Coconut oil is about 100% fat and 80-90% of it is saturated fat. Fat is made up of tiny molecules called fatty acids, and coconut oil contains several types of saturated fatty acids. Coconut oil contains caprylic acid (C-8: 0) (8%), capric acid (C-10: 0) (7%), lauric acid (C-12: 0) (49%), and myristic acid (C-14). : 0) (8%), palmitic acid (C -16: 0) (8%), stearic acid (C -18: 0) (2%), oleic acid (C -18: 1) (6%) and contains linoleic acid (C-18: 1) (2%) fatty acids. The main fatty acid in coconut oil, which is about 80-90 percent saturated fat, is lauric acid (4%), and myristic and palmitic acids are present in small amounts. Research has shown that saturated fat helps to raise the level of harmful LDL cholesterol in individuals. Research has shown that substituting unsaturated fats (oleic acid (6%) and linoleic acid (2%)) in saturated fats can reduce the risk of heart disease and lower cholesterol levels (among other health benefits). Since the presence of these good fats in small amounts in coconut oil does not protect against the exacerbated risk of heart attack due to the effects of "unhealthy" saturated fat, which is around 80-90%.

Medium chain triglycerides (MCTs)

However, the identification of the medium-chain triglycerides (MCTs) contained in coconut oil and their specific behavior have led to a different approach to scientific research around the world since the end of the last century. They are metabolized differently than other long-chain triglycerides (LCT). MCT oil is said to have many health benefits. Although it is known that saturated fat raises cholesterol levels, it has been linked to an increased risk of heart disease, but some saturated fats (also known as medium chain triglycerides) in coconut oil are believed to be less harmful and can actually raise HDL cholesterol levels. This is how a new ideology has emerged. Coconut oil is high in saturated fat, but most of it is MCT, which has been shown to have a beneficial effect on the risk of developing heart disease. However, this is a topic that has been hotly debated among scientific research. There is not yet enough evidence to make an open statement that the use of coconut oil significantly reduces the risk of heart attack in people. Eating such a diet, especially without proper control, can have profoundly serious consequences. Although many people in Sri Lanka meet their main fat requirements from coconut oil, the risk of heart attack is very high. Although the reason for this can be pointed out as coconut oil blending, there is no scientific evidence that coconut oil is mixed on a large scale or as a result, except in certain cases.

Are there any health benefits of consuming coconut oil? Coconut oil contains saturated fatty acids that can be undesirable to heart health. Since coconut oil is a plant food, it does not contain cholesterol. Although saturated fatty acids are harmful to the heart health, coconut oil contains medium-chain fatty acids that are easily metabolized without contributing to endogenous cholesterol production. However, it should be noted that these beneficial factors can be changed with exposure to high temperatures and excess usage. Therefore, it is better to add coconut oil to the diet wisely and consciously.

Is Palm Oil a Poison?

Today, palm oil is the most widely consumed vegetable oil in the world. This may come as a surprise to many of us. Most consumers do not buy it directly. Palm oil is used to make 40% to 50% of our domestic consumer products. It is considered a multi-purpose vegetable oil. It is widely used because of its many advantages. Cheap production, longevity and efficiency are special. Food companies can use palm oil to produce products at competitive prices. Its competitive price as well as quality attract many consumers to the food. Almost all bakery

products in Sri Lanka contain palm oil. The pulp of the ripe fruit of the poplar plant usually contains edible palm oil. In this case, the kernel (the soft inner part of the seed) is separated, and the palm kernel oil is extracted. Palm oil and palm kernel oil have extremely different properties. Palm kernel oil has a similar chemical composition to coconut oil. Some professionals claim coconut oil is super food while labelling palm oil is dangerous commodity that may contain carcinogen. I must emphasize that palm oil is not a "super" food, however, it is also not a dangerous toxin. Compared to coconut oil, the composition of palm oil is as follows Palm oil contains approximately 50% saturated fatty acids, 44% palmitic acid (C16: 0), 5% stearic acid (C18: 0), and small amounts of myristic acid (C14: 0). Unsaturated fatty acids are approximately 50% (oleic acid (C18: 1) and linoleic acid (C18: 2) and linolenic acid). Thus, compared to coconut oil, it has significantly less saturated fat and more unsaturated fatty acids. Also, coconut oil, like ordinary palm oil, has little MCT. However, palm oil, also known as palm kernel oil (which is like coconut oil), contains more MCT (about 48%) than coconut oil. Palm oil, palm kernel oil and coconut oil have a bad reputation for being high in saturated fat and have long been associated with heart disease. Saturated fat raises "bad" LDL cholesterol and triglycerides, both of which are risk factors for heart disease. Palm oil is 50% saturated and has a more advantageous fatty acid composition than palm kernel oil and coconut oil, which are more than 85% saturated.

The prestige of unhealthy fat has previously gone to trans-fat and is now banned. Trans fat not only raises LDL and triglyceride levels but also lowers “good” HDL cholesterol. Most trans fats are artificially created by hydrogenation. Semi-hydrogenated oils used in processed baked goods and snacks are a major source of trans fat.

Food producers and restaurants want to find alternatives. One of them is palm oil. Palm oil is currently the most widely used fat in the world as a food raw material. That's not just based on its competitive price. It resists oxidation and does not become stale and leads to better product preservation. Its neutral flavor allows for other flavors. It is less saturated than butter and does not contain trans-fat. In fact, many manufacturers began to use palm oil to remove trans fatty acids from their products. According to nutritionists, palm oil is clearly better than short-fat trans-fat and is a better choice than butter.

Is Palm Oil a Carcinogen?

The European Food Safety Authority (EFSA) has stated that palm oil can increase the risk of cancer when heated to 200 degrees of Celsius or higher, based on studies using mice. However, it emphasizes that the risk to humans is "uncertain." Glycidyl fatty acid esters are present in the highest levels in palm oil, followed by other oils. This harmful substance is minimized at temperatures below 200 degrees Celsius and at low pressures. When the food industry began to use palm oil on a large scale, it was perceived as a healthier alternative to animal fats such as butter. Today, palm oil has often caused environmental problems associated with biodiversity, because of heavy production in some parts of Southeast Asia.

We need to understand that there is no magic food or superfood and the only thing that matters is that a single food does not have all the nutrients that the person needs.

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Category 2
Name : K D Hiruka Disas Niduwara Amarasinghe
Place : Merits
School : Mahinda Rajapaksha Vidyalaya, Homagama

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Name : Methum Mandira Kalansooriya
Place : Merit
School : Meepawala Amarasooriya Maha Vidyalaya, Galle

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Category 2
Name : D Sahansa Sathnadee
Place : Merits
School : Rathnavali Balika Vidyalaya, Gampaha

NSSL Address: No.466, Kotte Road, PitaKotte, 10100, Sri Lanka,
Tel: 0115992060
Email: sl.nutritionsociety@gmail.com
Website:www.nutritionsocietyofsrilanka.org

Find us on Facebook http://www.facebook.com/nutritionsocietyofsrilanka/