



Newsletter

The Nutrition Society of Sri Lanka

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Sinhala Tamil New Year with COVID -19

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President of NSSL



I am pleased to announce the launching of the first Newsletter of The Nutrition Society of Sri Lanka (NSSL) for 2020. We plan to publish our NSSL Newsletter every four months in the form of an E- Newsletter.

I am fortunate to be able to serve as the President of this distinguished Association and I am writing this message at a time that a new energetic Council of the NSSL has started the activities for the two years of 2020 and 2021. In addition to organizing the vibrant Annual Scientific Sessions, NSSL is aiming to carry out many activities during this period. The Council has aligned a many academic and public programs that are spanned throughout the year focusing on the need to increase the quality output of research, to improve the public awareness that could lead to behavior change and to establish multi-disciplinary team care to combat nutrition related health issues among Sri Lankans.

Sri Lanka is a country facing a huge burden of non-communicable diseases out of which cardiovascular disease and diabetes mellitus (DM) type 2 are high up in the list. Prevalence of DM in Sri Lanka is 1.2 million in 2019 (Figure) and we are at the 3rd place among the top five countries with the highest burden of DM in South East Asia according to the International Diabetes Federation (Table)(1).

Top five countries for number of people with diabetes (20–79 years), 2019

	Millions
India	77.0
Bangladesh	8.4
Sri Lanka	1.2
Nepal	0.7
Mauritius	0.2



Sri Lanka is a multi-ethnic and multi-religious country having many festivals which are celebrated by many of us across the country irrespective of the ethnicity and the religion. During these seasons we tend to eat a lot of sweet meats made up using sugar, rice or wheat flour and cooked by deep frying.

Diet and Nutrition plays a major role in the development of type 2 diabetes. Intake of food with high glycaemic index and sugar is known as unhealthy dietary practices which could lead to

diabetes mellitus. Hence, it is important to have a balanced and healthy diet rich with fresh vegetables and fruits with whole grain food items along with no added sugar or salt with adequate healthy fat and oil. This makes sure proper pancreatic function and insulin activity.

COVID-19 pandemic hit the country in March changing the life style and hence the food consumption pattern and dietary behavior of the individuals adhering to the hygienic practices. People urged to eat food items which tend to boost immunity. With the lockdown and curfew people were compelled to stay at home which promoted affordable people to prepare healthy diet while the underprivileged suffered from scarcity of food. It is predictable that the burden of malnutrition (protein energy malnutrition, overweight and obesity and micronutrient deficiencies) will be on the rise in the country due to the critical issues related to food security and food safety in future. Mindful eating prevents you getting both the communicable and non-communicable diseases.

“If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have found the safest way to health” – Hippocrates

Wish health and safety!

Reference

International Diabetes Federation, Diabetes Atlas 9th Edition. <https://www.idf.org/network/regions-members/south-east-asia/diabetes-in-sea.html>

Celebrate; but be cautious

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Sinhala and Hindu New Year is celebrated on 13th to 14th of April every year. The occasion is characterized by a variety of rituals and tasty food items. The smell of cooking, frying, baking and the hustle and bustle is everywhere during the season. Number of traditional sweetmeats such as 'Kewum', 'Kokis', 'Aasmee' and 'Athirasa' are prepared to serve the visitors during this period. Taking into consideration the increasing trend towards healthy eating, this article mainly focuses on the undesirable aspects of these foods for the human health.

Most of the traditional New Year sweetmeats are deep-fried food items that have a high content of starch, sugar and fat (Table). These deep-fried foods account for a large portion of caloric consumption. Long term consumption of these foods increases the risk of developing non-communicable diseases such as diabetes mellitus, dyslipidaemia and cardiovascular disease. Cooking methods like deep-frying adds additional harmful effects for the human health.

The process of deep frying is generally detrimental to the nutritional value of the food. During deep frying oil is heated to temperatures beyond 180°C for a long time and exposed to both moisture and oxygen. Further, repeated heating of vegetable/coconut oil at high temperatures during cooking is a very common practice at home and in industry.



This process induces a series of complex chemical reactions which may impact the quality of both the food and the oil it is cooked in. With repeated usage, oil tends to degrade and degraded products are maximally absorbed by the food when compared to fresh heated oil.

At elevated frying temperatures triglycerides are hydrolysed to form free fatty acids, monoglycerides, di-glycerides, and glycerol. The resulting products undergo oxidation and form hydroperoxides which are further degraded into aldehydes, ketones and free radicals (Paul et al. 1997). During repeated usage, oil is subjected to intermittent heating and cooling. When the oil cools down from the frying temperature, the solubility of oxygen in the oil is increased. This accelerates oxidation reactions and hence the production of peroxides (Paul et al. 1997). These oxidized products are known to affect liver health, damage cell membranes and to cause gastrointestinal irritations when absorbed to the body. Further, they influence the body's ability to absorb vitamins and to oxidize cholesterol which promotes atherosclerosis (Ghidurus et al, 2011).

Table: Ingredients used in commonly consumed deep-fried New Year sweetmeats

Sweet meat	Ingredients
Konda kevuṁ	Rice flour and Kithul treacle
Naran kevuṁ	Rice flour, Kithul treacle, Green gram flour and Scraped coconut
Mun kevuṁ	Rice flour and Kithul treacle, Green gram flour
Kokis	Rice flour and Coconut milk
Pani walalu (Undu wel)	Undu flour, Rice flour, Sugar, Sugar syrup, Coconut milk
Aasmi	Rice flour, coconut milk
Athi rasa	Rice flour and Jaggery
Murukku	Rice flour

Repeated heating and thermal degradation involves in formation of dimeric, polymeric, polycyclic aromatic hydrocarbons, increased level of toxic compounds such as acrylamide and malonaldehyde. Among them polycyclic aromatic hydrocarbons, acrylamide and malonaldehyde are known to possess carcinogenic potential (Srivastava et al, 2010). Consumption of repeatedly heated cooking oil is associated with a number of malignancies, including lung, colorectal, breast

and prostate cancers (Ganesan et al, 2017). Human digestive and lymphatic systems can easily absorb the cyclic fatty acids and cause harmful effects.

Lipid Polymers are resistant to digestion and cause diarrhoea and disturbances of absorption are also reported. Prolonged consumption of the repeatedly heated oil has been shown to increase blood pressure and serum total cholesterol and to cause vascular inflammation as well as vascular changes which predispose to atherosclerosis (Ng et al, 2014). Therefore, use of repeatedly heated oils is much more destructive for the health than continuous heating. Amidst Covid-19 Sinhala and Hindu New Year was not celebrated as previously in this year. Yet, it is important to be mindful of these consequences, while enjoying the food.

References

1. Ganesan K et al, (2017) Impact of consumption of repeatedly heated cooking oils on the incidence of various cancers; A critical review, *Critical Reviews in Food Science and Nutrition*, 59(3)
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3. Ghidurus M et al, (2011) Nutritional and health aspects related to frying. *Romanian Biotechnological Letters*, 16(5): 6467-6472
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බෝවෙන රෝගයකදී ආහාර හා පෝෂණය පිළිබඳ ඔබ දැනගත යුත්තේ මොනවා ද ?

වෛද්‍ය චන්දිමා මඩු වික්‍රමතිලක

ජේෂ්ඨ කලීකාචාර්ය, වෛද්‍ය පීඨය, රුහුණ විශ්ව විද්‍යාලය,

සහාපති, ශ්‍රී ලංකා පෝෂණ සංගමය

රෝගය වැළඳීම අවදානම අවම කිරීම සහ එහි බරපතලකම අඩු කර ගැනීම සඳහා අපගේ ප්‍රතිශක්තිකරණ පද්ධතිය හොඳ මට්ටමක පවත්වා ගැනීම ඉතා වැදගත් වේ. අප සිරුර ආක්‍රමණය කරන රෝග කාරක පාලනය හෝ මර්දනය කිරීම කරනුයේ මෙමගින් වන බැවිනි. ඔබ හොඳ පෝෂණ මට්ටමක් පවත්වා ගැනීම, ශක්තිමත් ප්‍රතිශක්තිකරණ පද්ධතියක් පවත්වා ගැනීමට ඉවහල් වේ. මෙය දීර්ඝ කාලීන ක්‍රියාවලියක් වුව ද මේ මොහොත සඳහා ආහාර තෝරා ගැනීමේදී, පිළියෙල කිරීමේදී සහ පරිභෝජනයේදී පහත කරුණු පිළිපැදිය හැකිනම් මැනවි. මෙහි සඳහන් බොහොමයක් උපදෙස් ඕනෑම බෝවෙන රෝගී අවස්ථාවක් සඳහා සුදුසු වන අතර COVID-19 ආසාදනය සඳහා ම සුවිශේෂී නොවන බව සැලකිල්ලට ගන්න.

අපි රෝගවලින් ආරක්ෂා වෙන්නේ කෙසේ ද ?

බෝවෙන රෝගවලට ඔරොත්තු දීමට අපට ඇති හැකියාව “ප්‍රතිශක්තිකරණය” (Immunity) ලෙස හැඳින්වේ. ශරීරයේ ප්‍රතිශක්තිකරණය පවත්වාගැනීම සඳහා “ප්‍රතිශක්තිකරණ පද්ධතිය” (Immune system) වැදගත් වේ.

ප්‍රතිශක්තිකරණ පද්ධතිය මගින් විෂබීජ/රෝගකාරක ශරීරයට ඇතුළු වන මුල් අවස්ථාවේදී ම විනාශ කිරීමට දායක වේ. අපේ සම (Skin), ශ්ලේෂ්මල පටල (Mucous membranes), සිලියා (Cilia), මහා හක්ෂක සෛල (Macrophages), ඉන්ටර්ෆෙරෝන් (Interferon) සහ අනුපූරක පද්ධතිය (Complement system) මේ සඳහා දායක වේ.

රෝග කාරකයෙකුට/විෂබීජයකට විරුද්ධව සටන් කිරීමේ දී ප්‍රතිශක්තිකරණ පද්ධතිය ඉතාමත් ප්‍රයෝජනවත් ය. මෙහි දී විවිධ සෛල වර්ග (සුදු රුධිරාණු සෛල සහ වෙනත්) සහ රෝග කාරකවලට විරුද්ධව නිපදවෙන ප්‍රතිදේහ (antibodies/immunoglobulin) වැදගත් වේ.

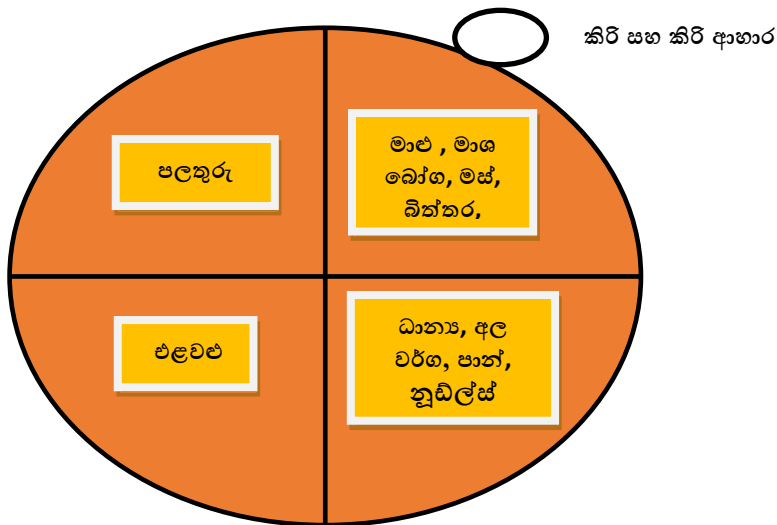
මෙම පද්ධති දෙකම ක්‍රියා කර ශරීරයට රෝග කාරකය ඇතුළු වීම මුල් අවස්ථාවේ දී ම නතර කිරීම හෝ රෝග කාරකයට විරුද්ධව සටන් කර/එයට විරුද්ධ ව ශරීරය තුළ ක්‍රියාත්මක වන ක්‍රියාවලි මගින් රෝගයෙන් වැළකීම හෝ මැඩ පැවැත්වීම සිදුවේ.

ආහාර හා පෝෂණය බෝවෙන රෝගවලින් ආරක්ෂා වීමට වැදගත් වන්නේ කෙසේ ද ?

ඔබ ඔබේ වයසට සහ ස්ත්‍රී පුරුෂ භාවයට සරිලන මට්ටමේ ප්‍රශස්ත පෝෂණයක් පවත්වාගෙන යන්නේ නම් මෙවැනි බෝවෙන රෝගවලින් ආරක්ෂා වීමට හෝ බරපතල තත්ත්වයකට යෑම සහ සංකූලතා ඇතිවීම අවම කරගත හැකි ය.

ඒ සඳහා අනුගමය කලයුතු අහාර හා පෝෂණය සම්බන්ධ පිළිවෙත් මොනවද ?

සෑමවිටම සෞඛ්‍යාරක්ෂිතව නිවසේ දී පිළියෙල කරගත් ආහාරවේලක් ගැනීමට උත්සාහ ගන්න. ආහාර පිළියෙල කිරීමට පෙර, අනුභවයට පෙර සහ වැසිකිළි යාමෙන් පසු සබන් යොදා හොදින් අත් සෝදන්න. ආහාර පිළියෙල කිරීමට යොදා ගන්නා භාජන හොදින් සෝදන්න. ඔබ මස් ආහාරයට ගන්නා පුද්ගලයකු නම් හොදින් තම්බා පිස ආහාරයට ගන්න. යහපත් පෝෂණයක් පවත්වා ගැනීමට දිනකට සමබල ප්‍රධාන ආහාර වේල් (main meals) තුනක් (රූපය 1) සහ අමතරව අවශ්‍යතාව මත සුදුසු කෙටි ආහාර (snacks) (අධික ලුණු, සීනි සහ තෙල් අඩංගු නොවන) දෙකක් (උදාහරණ ,රූපය 2) පමණ ගත හැකිය.



රූපය 1 - සමබල ආහාර වේලක් මගින් විවිධ වූ පෝෂණීය ආහාර දිනකට ගන්න

රූපය 2 - සෞඛ්‍ය සම්පන්න කෙටි ආහාර (healthy snacks)



තැම්බු මඤ්ඤොක්කා, බතල වැනි අල වර්ග පොල් සමග
හැලප, සවිකැද
එළවළු- බිත්තර මිශ්‍ර සැන්චිච්
එළවළු මිශ්‍ර රොටි
කුරක්කන් රොටි සහ පිට්ටු
තැම්බු එළවළු
රටකපු, කපු හා තෙල් සහිත ඇට වර්ග(තල)
තම්බපු බඩ ඉරිඟු, කඩල, මුං ඇට
අමුවෙන් ආහාරයට ගත හැකි එළවළු (කැරට්, පිපිඤ්ඤා)
ඉගුරු මිශ්‍ර තේ, ඕනෑම පලතුරක් හෝ නැවුම් පලතුරු යුෂ (අවම සීනි/ සීනි නොමැති)

කුමන ආහාර හා පෝෂක මෙවැනි ලෙඩ රෝග වලින් ආරක්ෂා වීමට වැදගත් වේද ?

ප්‍රතිශක්තිකරණ පද්ධතිය ශක්තිමත් කිරීමට විශේෂයෙන් වැදගත්, විද්‍යාත් මකව තහවුරු කරන ලද පෝෂක අඩංගු ආහාර වර්ග (වගු 01) කැම වේලට එකතු කර ගැනීමට කල්පනාකාරී වන්න. මෙම පෝෂක, ප්‍රතිශක්තිකරණ පද්ධතිය සඳහා අවශ්‍ය නව සෛල නිපදවීමට සහ ඒවායේ මනා

ක්‍රියාකාරීත්වයට, ප්‍රතිදේහ සෑදීමට, සම සහ ශ්ලේෂ්මල පටල හොදින් පවත්වා ගැනීමට මෙන්ම ශරීර පටක හානි වීම අවම කිරීම සඳහා ප්‍රයෝජනවත් වේ.

වගු 01 - ප්‍රතිශක්තිකරණ පද්ධතිය ශක්තිමත් කිරීමට විශේෂයෙන් වැදගත් පෝෂක සහ ආහාර

පෝෂකය	ආහාර වර්ගය
ප්‍රෝටීන	බිත්තර කහමදය, මාළු, මස්
විටමින්	
A	බිත්තර කහමදය, මාළු, කිරි සහ කිරි ආහාර, කහ පාට එළවළු සහ පලතුරු
B6	ධාන්‍ය , පලා වර්ග , මාශ බෝග , මස්
B12	බිත්තර කහමදය, මාළු, කිරි සහ කිරි ආහාර
Folate	ධාන්‍ය , පලා වර්ග , මාශ බෝග, මස්
C	නෙල්ලි , පේර, දොඩම් , ජම්බු, උගුරැස්ස, ඇබරෙල්ලා, පැපොල්, අඹ , තක්කාලි, පලා (නිවිති, රාබු සහ බීට් රූට් කොළ, තම්පලා, මුරුංගා කොළ, සහ ගොටුකොළ)
E	බිත්තර කහමදය, ධාන්‍ය , පලා වර්ග
ධනිජ ලවණ	
යකඩ (Fe)	මස්, මාළු, ගොටුකොළ
කොපර් (Cu)	මස්, මාළු, හතු, පරිප්පු, කඩල , කවුපි , මුං ඇට, කජු , රට කජු, වට්ටක්කා ඇට, තල
සින්ක් (Zn)	මස්, මාළු, මාශ බෝග, ධාන්‍ය, කජු , රට කජු, වට්ටක්කා ඇට, තල
ප්‍රතිශක්තිකරක (Antioxidants in food), විටමින් A, C සහ E	විටමින් A, C සහ E බහුල ආහාර, සෙලිනියම් බහුල ආහාර (ඇට වර්ග, මස්, මාළු, හතු), කුළු බඩු, බෙහෙත් පැළෑටි කොටස්

ජලය /දියර පානය කෙසේ විය යුතු ද ?

පිරිසිදු නටවා ගත් ජලය නිතර පානය කිරීම සුදුසුය. කැඳ , සුප්, කොමඩු සහ තැඹිලි වැනි දෑ ගැනීම ද සුදුසු වේ. කෘත්‍රීම පැණි බීම භාවිතයෙන් වැළකී සිටින්න. වැඩිහිටියෙකු දිනපතා ජලය ලීටර් 2-3, දරුවෙකු ලීටර් 1.5-2.0 ක් වත් පානය කළ යුතුයි.

ශාරීරික ක්‍රියාකාරකම් කෙසේ කළ යුතු ද?

සැහැල්ලු සහ මධ්‍යම ප්‍රමාණයේ ක්‍රියාකාරකම් (ඇවිදීම) මගින් ප්‍රතිශක්තිකරණ පද්ධතිය ශක්තිමත් වන නමුත් අධික වෙහෙසකර ව්‍යායාම, පුහුණුවීම් සහ ක්‍රීඩා ප්‍රතිශක්තිකරණ පද්ධතිය තාවකාලික දුර්වල කිරීමක් කළ හැකිය. මේ අවස්ථාවේ එවැනි ක්‍රියාවලීන් හැකි තාක් වැළකී සිටීම සුදුසු ය. මානසික සතුට, ශාරීරික විවේකය සහ ප්‍රමාණවත් නින්ද රෝග අවදානම අඩු කළ හැකිය. වැඩිහිටියකු දිනකට පැය 6-7 ක සහ දරුවෙකු පැය 8-10 ක හොඳ නින්දක් ලැබිය යුතුයි.

අධිපෝෂණය සහ ස්ඵලතාවය (over-nutrition & obesity) අසාදන රෝගයක දී කෙසේ බලපායි ද?

මන්ද පෝෂණය මෙන්ම අධි පෝෂණය (අධිබර සහ ස්ඵලතාවය) නිසා ප්‍රතිශක්තිකරණ පද්ධතිය දුර්වල විය හැකිය. අනවශ්‍ය ලෙස අධික තෙල්, ලුණු, සීනි භාවිත කිරීම හානිදායක විය හැකිය.

මන්දපෝෂණ තත්ත්වය බෝවන ආසාදන රෝගයකදී කෙසේ බලපාන්නේ ද?

මන්දපෝෂණයෙන් පෙළෙන පුද්ගලයන්ට රෝග වැළඳීමේ අවදානම වැඩිය. මන්දපෝෂණය ඇතිවන සංකූලතා වැඩිවීමට බලපාන අතර, රෝගය සුව වීමට ගතවන කාලය වැඩිවීමට ද හේතු විය හැකිය. සමහරවිට මරණය පවා ඇතිවිය හැකිය. මන්දපෝෂිත පුද්ගලයකුට බෝවන රෝග වැළඳීමේ හැකියාව වැඩි අතර , එසේ වැළඳුන විට ආහාර ගැනීම අඩුවන නිසා මන්දපෝෂණය උග්‍ර වී වෙනත් බෝවන රෝග ඇතිවීමේ අවදානම වැඩි වේ. මෙය අබණ්ඩ ව චක්‍රයක් ලෙස ක්‍රියාත්මක වී රෝගියා දුර්වල කළ හැකි ය.

ළදරුවන් සඳහා පෝෂණය කෙසේ විය යුතු ද?

මව්කිරි මත පමණක් යැපෙන ළදරුවන්ට (මාස 6ට අඩු) හොඳින් මව්කිරි දිය යුතු ය. අමතර ආහාර ගන්නා දරුවන්ට මව්කිරිවලට අමතර ව පෝෂණය සහ සෞඛ්‍යසම්පන්න ව සකස් කළ ආහාර දිය යුතු ය.

ගැබ්නි මව්වරු, වයෝවෘද්ධ සහ නිදන්ගත රෝග ඇති අයට මෙය බලපාන්නේ කෙසේ ද?

අප වයසට යාමත් සමග සිදුවන ශාරීරික වෙනස්කම් හේතුවෙන් (දත් හැලීම, රස දැනීම වෙනස් වීම, ආහාර ජීර්ණය සහ අවශෝෂණය දුර්වල වීම) පෝෂණ මට්ටම ස්වාභාවිකව ම පහත වැටීම සිදුවිය හැකි ය. එම නිසා වයෝවෘද්ධ අය තම පෝෂණය සඳහා විශේෂ සැලකිල්ලක් දැක්විය යුතු ය. ඊට අමතර ව වයසට යෑම නිසා ප්‍රතිශක්තිකරණය ද අඩාල වේ. එසේ හෙයින් ඔවුන් මෙවැනි රෝගවලට ගොදුරු වීමට ඉහළ ප්‍රවණතාවයක් ඇති අතර සංකූලතාවලට භාජනය වීම සහ මරණය පවා ඇති විය හැකි ය.

ගැබිනි මව්වරුන්ගේ, නිදන්ගත රෝග (දියවැඩියාව වැනි) සහ ශ්වසන රෝග ඇති අයගේ ද ප්‍රතිශක්තිකරණය අඩු මට්ටමක පවතින නිසා අසාදන රෝගවලට ගොදුරු වීමේ අවදානම සහ ඒවායේ බලපෑම වැඩිය. එබැවින් නිදන්ගත රෝග වලින් පෙළෙන රෝගීන් නිර්දේශිත වෛද්‍ය ප්‍රතිකාර භාවිතා කර රෝගය පාලනය කර ගත යුතු වේ.

තවත් සැලකිලිමත් විය යුතු කරුණු මොනවාද ?

තහවුරු නොකරන ලද , සුදුසුකම්ලත් වෛද්‍යවරයකු හෝ පෝෂණවේදියකු විසින් සහතික නොකරන ලද කසාය, අරිෂ්ඨ සහ වෙනත් බෙහෙත් වට්ටෝරු භාවිතා කිරීමෙන් වළකින ලෙස කරුණාවෙන් ඉල්ලා සිටිමි. දුම් බීමෙන් සහ මත්පැන් පානයෙන් වැළකීම ඉතා වැදගත්ය.

ප්‍රධාන පණිවුඩ (Key messages)

- දිනපතා ආහාර වේලට සුදුසු පරිදි ආහාර එකතු කිරීමෙන් විවිධත්වය වැඩි කර ගන්න.
- නැවුම් පලා , එළවළු, පරිප්පු, කඩල , කවුපි , මුං ඇට, කජු , රට කජු, වට්ටක්කා සහ තල ඇට ආහාරයට එකතු කර ගන්න.
- නැවුම් පලතුරු දෙවර්ගයක්වත් දිනකට ආහාරයට ගන්න.
- ප්‍රෝටීන් බහුල ආහාර දිනපතා ආහාරයට ගන්න.
- නැවුම්, ආරක්ෂිත ව පිළියෙල කළ ආහාර භාවිත කරන්න.
- වතුර වැඩිපුර පානය කරන්න.
- ප්‍රමාණවත් විවේකය යෝග්‍ය වේ.
- තහවුරු නො කරන ලද කසාය, අරිෂ්ඨ සහ වෙනත් බෙහෙත් වට්ටෝරු භාවිත කිරීමෙන් වළකින්න.
- ආහාර පිළියෙල කිරීමට පෙර, අනුභවයට පෙර සහ වැසිකිළි යාමෙන් පසු සබන් යොදා හොදින් අත් සෝදන්න.

අවදානමට පෙර අවධානය - ඔබේ සුවය අපේ වගකීමයි !

Eating Safe during the Pandemic

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Covid-19 caused by SARS-Cov-2 is the most devastating epidemic that developed into the level of global pandemic ever since Spanish flu plagued the world that claimed an estimated 50 million people nearly a century ago. Since the new coronavirus mysteriously appeared in Hubei province of China, within just four months the disease spread across the whole globe infecting more than 3.3 million people claiming over 230,000 lives in the world. It is quite consolidated that the only solution for the disease is an effective vaccine, however, given the nature of the etiologic agent, the chances of having a successful vaccine within few months is very slim. Some researchers suggest that the disease will be persistent for two years. Although few countries claim that they have successfully brought the disease under control the world will not get back to normalcy within years as mere elimination of the virus in few countries does not guarantee a safe world. According to the status quo, it is highly likely that we have to live with the virus and for a long period of time until a vaccine emerges to rescue. In this backdrop, it is essential for us to stay safe. Let us have a look at as to how we can assure the safety of food during this global pandemic.

It is important for us to understand the major difference between bacteria and viruses the latter being the main group of microorganisms that makes foods unsafe causing a plethora of food borne illnesses. Bacteria are capable of growing and reproducing on their own in a conducive environment such as food. Food such as meat, fish, eggs and milk are rich in nutrients, thus attract bacteria. As a result, if pathogenic bacteria such as Salmonella, Shigella, E coli or Campylobacter find their way into a food held at conditions suitable for them to grow, they multiply into millions of cells within few hours making the food unsafe. In contrast, viruses

which are acellular virus particles carrying only DNA or RNA do not grow on food. Therefore, if viruses land on a food the number gradually goes down with time. SARS-Cov-2 virus, similar to other coronaviruses is easily destroyed with temperature above 50 C.

The main mode of transmission of Covid-19 is through respiratory droplets released by an infected person or rarely by an asymptomatic carrier. Food has not been identified as a vehicle of the SARS-Cov 2 virus, thus it is unlikely that food contains high concentration of virus unless a carrier accidentally sneezes or coughs on food. As the survivability of the virus on surfaces is very poor it is again unlikely that food transported over few hours can carry the virus in significant numbers. The chances of having virus is also lessened by high environmental temperature. On the other hand, any virus that enters the digestive system is theoretically disintegrated in the stomach. Said that, you do not need to worry too much over the transmission of the virus via food. However, given the severity of the pandemic and the highly contagious nature of the disease it is important to take every precaution possible. Moreover, what is known about the virus may be less than what is yet to be known.



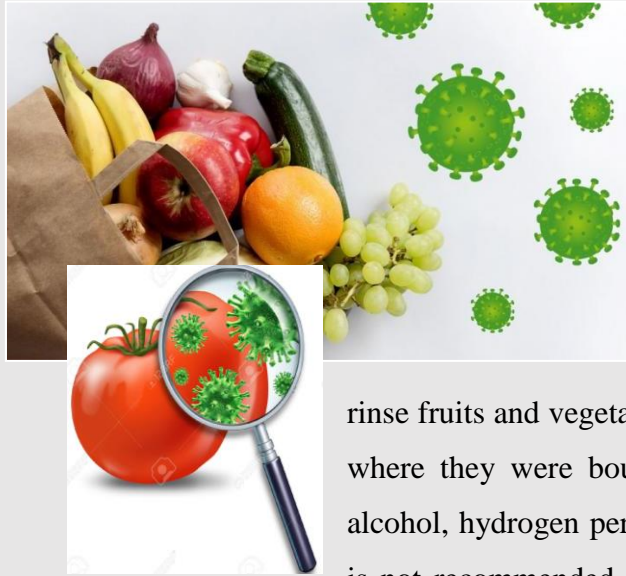
Baked goods

You may purchase baked goods from pastry shops, restaurants or mobile vendors. Baked goods are ready to eat products that are potentially handled several times by different people quite a number of times. Therefore, if a patient happens to handle the product and virus lands on food there is a high chance that it can easily transmit to the consumer within 3- 4 hours. Theoretically, virus particles that enter the digestive system are disintegrated in the stomach causing no harm to the host. However, there are uncertainties surrounding the new virus, thus to be on safe side, it is better to take precautions. Latest findings reveal that the virus that emerged in Wuhan has been mutated to a more virulent and highly transmissible variant which currently affects the world and the predominant mutant in the Europe and the USA, Sri Lanka and many other countries is this new mutant.

Mobile baked good delivery service is pretty much established in the country and there are three wheelers and small delivery trucks or vans modified for this purpose, however, after lockdown came into effect, many regular three wheelers started carrying baked goods. These vehicles are

regular vehicles, thus are not suitably modified for the purpose. Therefore, the safety of food is at stake. Having considered all these, it is better if baked goods are heated before consumption. Steaming of bread, buns etc. for few minutes will make the food fresh and free of the virus.

Fruits and Vegetables



Fruits and vegetables available for sale at supermarkets are cleaned well while the fresh produce sold at most other places are not so clean. Even though the produce sold in the supermarkets are well cleaned there is a little chance that an infected person touches them while shopping. Said that, it is important to

rinse fruits and vegetables thoroughly with running water regardless of where they were bought from. The use of bleach, detergent, soap, alcohol, hydrogen peroxide or any other disinfectant on fresh produce is not recommended. After cleaning with water, excess water should be drained off and allowed to dry before storing in the refrigerator. The items that do not need refrigeration can be left outside for day or two before they can be consumed. Fruits with a thick rough peel such as pineapple, durian makes rinsing difficult. Peel these fruits and wash the edible parts before consumption. It is very important to clean your hands with soap following cleaning.

Packaged food items



Processed and packaged foods that come in pouches, metal cans, glass or plastic containers and cardboard cartons should be handled separately. If the food is packaged in a pouch and then packed in a cardboard box, the outer box can be discarded. Bottles, cans and other containers can be wiped off with water, dried off and stored.

Cereals, grains, pulses, flour and other dry foods

Dry foods such as rice, wheat flour, mung bean, lentils purchased in bulk quantities come in grocery bags. These items do not need refrigeration, thus can be left in a rack or on a table for 3 days before they can be consumed.

Meat, fish and eggs

There are no records that the virus is transmitted from farm animals to human, therefore, you do not need to worry over consumption of meat during the pandemic. However, it is important that you cook or bake meat or fish thoroughly such that it becomes free of microorganisms and parasites. If you decide to barbeque meat make sure meat is fully done. Partially done meat may pose of a risk of having microbial pathogens as well as parasites. How should we clean eggs? Egg shell has a barrier layer that prevents transmission of microorganisms known as bloom or cuticle. When eggs are rinsed with water this protective layer too is washed off. Therefore, it is recommended to remove dirt with a brush if it is badly soiled. If it is absolutely necessary to wash with water then use lukewarm water to quickly rinse, dry off and stored in refrigerator. Never keep eggs dipped in water as microorganisms and other contaminants traverse in. Never rinse eggs with cold water as this will create a vacuum inside of the egg and as a result extraneous matter will seep in. Never use detergents, bleach or soap in cleaning eggs as materials in them can easily find their way into egg.

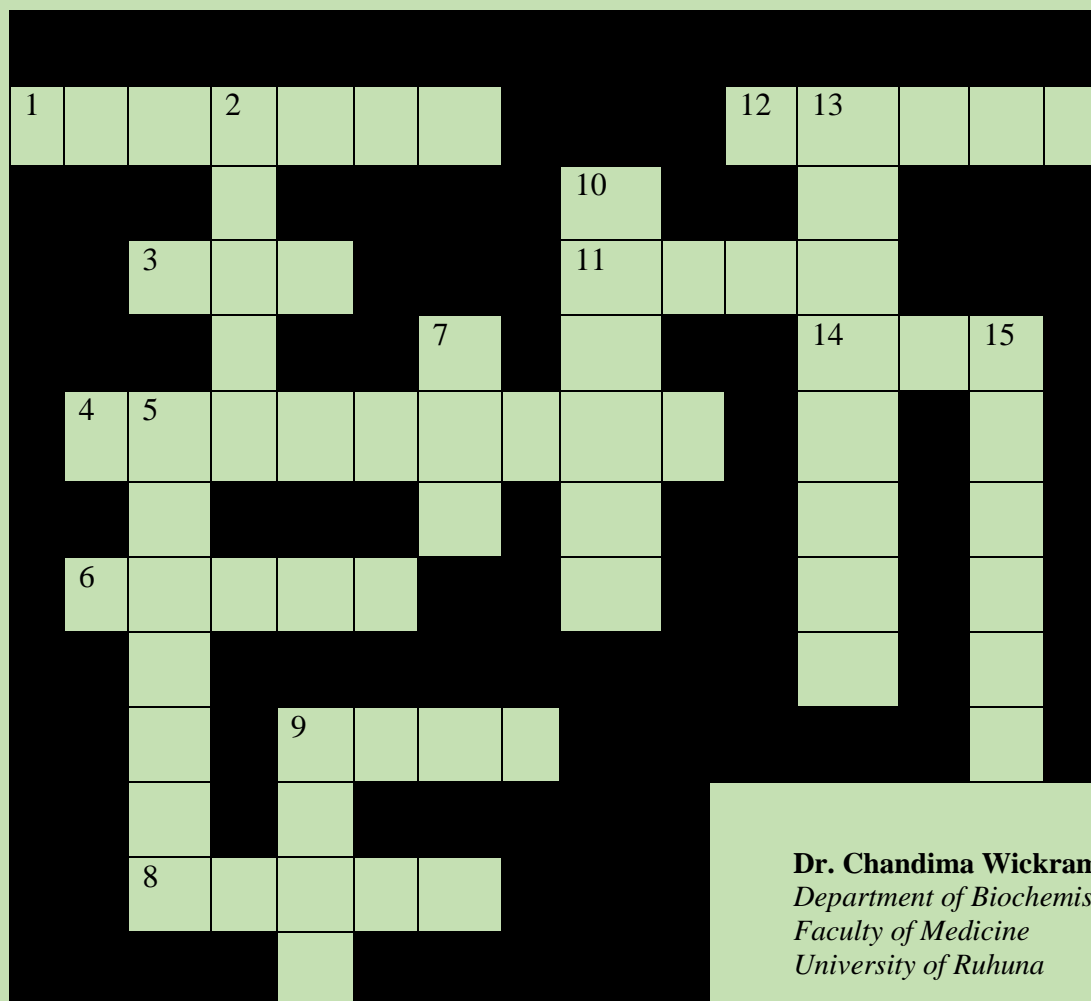
Food Preparation

During food preparation, it is important to cook food thoroughly as usual. Take extra precautions in preparation of salads.

Dining out

Food prepared outside is handled by many unknown handlers, thus the safety is at stake. Therefore, it is advisable to eat at home or consume food prepared at home. However, if you are to dine outside for compelling reasons you may eat at a reasonable safe place where food is handled safely. Eat always hot food avoiding salads and cold foods. Make sure you wash your hands thoroughly with soap before dining. Avoid sharing food with others while dining. Do not share tumblers, cups, saucers, plates, napkins and cutleries. Eat safe and stay safe during the troubled time.

What do you know about fat and oil?



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	DOWN		ACROSS
2	An animal organ with high content of cholesterol.	1	A legume rich in polyunsaturated fatty acids/fat.
5	Fruit rich in monounsaturated fatty acids/fat.	3	A nutrient which supply the highest amount of energy per - gram.
7	Lipoprotein involves in reverse-cholesterol transport.	4	This change causes bad smell in oil.
9	A source of protein rich in saturated fat.	6	Butter exists in this form at room temperature due to its high saturated fat content.
10	The shortest fatty acid.	8	It is the main omega-9 fatty acid in the diet.
13	An essential fatty acid found in fish oil.	9	This is useful in the digestion (or emulsification) of lipid.
15	Fat is digested by this enzyme.	11	A vegetable oil rich in polyunsaturated fat/fatty acids.
		12	Fruit rich in polyunsaturated fatty acids/fat.
		14	The lipids that exist as liquids at room temperature.

Impact of COVID -19 on our nutrition

Professor Anoma Chandrasekara

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The recurrent corona virus disease (COVID -19) pandemic has changed our entire life pattern. By the end of the second week of May, 2020 more than 4.6 millions of people have got infected and more than 300,000 deaths have occurred worldwide. The effects of the changed lifestyle during pandemic could be lasting for a lengthy period coupling with adverse economic, health and social outcomes. Inadequate diet leads to the deficiency of nutrients and weakens the immune system. Vicious cycle of malnutrition and infectious diseases relationship was well established a long time ago. Nutrient deficiencies impair immune function as a result of lack of food and the extent of impairment may depend upon the severity of the deficiency, presence of nutrient interactions, the presence of infection, and the age of the individual.



Furthermore, evidences build up linking the adverse outcomes of the COVID-19 with non-communicable diseases such as obesity, diabetes, heart diseases and ageing population. In general body response to infections caused by microorganism through inflammations. The length, short or prolonged, of inflammatory conditions depends on the interaction between host and the organism. The evidences show that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) which causes COVID-19 is hyper inflammatory. Therefore, nutritional complications can be expected in individuals suffered and those restricted to a different life pattern for avoidance and quarantine purposes of the COVID-19.

COVID-19 has influenced our food systems in a number of ways. With the lock down operations shelves of groceries and food cities are no more overfilled with every possible food items we see earlier before the pandemic days. The sit-down restaurants of high end to low end which have been over crowded especially during evenings are at a rest. No more long awaiting lines are seen to purchase fried rice, *Kotthu*, string hoppers, hoppers and *Vade*

in the evening. Pushing vendor carts filled with deep fried bites are at a halt. Every corner of the country farmers complain about difficulty of selling their surplus produce of vegetables, and eggs etc. In the quarantine period, food insecurity peeks from job-less households those are struggling to provide whatever available to feed hungry mouths. Furthermore, in some communities' restricted movements at homes due to quarantine curfews compel people to choose a few processed food items such as quick noodles and biscuits too which can be high in sugar, salt and fat. Thus, the quality of the diet important to maintain proper immune function is compromised with restrictions of food accessibility.

On the other hand, people are looking back to unearth their roots during the excess time they spend at home during COVID-19 pandemic and social distancing. All main three meals are being cooked at home and share with family members. Housewives plan meals ahead even for the next few days. People use to pick what they want from nearby grocery, and vegetable outlets rather than shopping at town centers to avoid crowds. Moreover, every household is enthusiastically involve in home gardening whatever possible to the extent allowed.

A healthy diet is composed of a variety of food with less salt and sugar and moderate amount of fats and a lot of fresh fruits and vegetables. The fat component should contain more unsaturated fats with limited saturated fat from



animal origin and trans fats from processed foods. It should be emphasized that no single food or supplement can be used to prevent illnesses or supply of nutrients those body needs and to turbocharge the immune system and its functions. Rather wholesome meal and a healthy food habits play a pivotal role in proper immune function. Healthy immune system can defeat invading microorganisms or the severity of the inflammation occurring during infection.

The maintenance of the immune competence is done by a concert of vitamins and minerals. In the process of fighting against the invading microorganisms immune cells produce reactive oxygen species (ROS) as damaging agents and overproduction can cause oxidative stress. To protect immune cells from continuous exposure to ROS and oxidative stress adequate supply of vitamin C, and E, and minerals, iron, zinc, copper and selenium is important. Immune system needs to proliferate cells, and produce substances continuously

to maintain its protective function. Therefore, vitamins, namely A, D, folate, B₁₂ and B₆ and minerals, iron and zinc are essential in the production and maturation of immune cells. Inflammation is helpful in the infection to isolate the infected area initially. However prolonged inflammation lead to the tissue damage of the host. Anti-inflammatory long chain fatty acids, DHA and EPA are helpful to keep inflammation at check.

In addition, culturing of healthy food habits is key to successful sustainability of good health. Giving priority to select fresh minimally processed foods save major proportion of nutrients in our meal. If we can get fresh fruits and vegetables from the home gardens or from local farms via short food chains nutrients are protected while safety of food is assured. Meals should be planned to limit fat, salt and sugar. While adding variety to the meal, desirable cooking methods should be selected to minimize addition of fat, salt and sugar. Home- made family foods is a key strategy for that adding traditional cuisines such as porridges and mixed green leafy dishes. Adequate hydration with clean water is a must to maintain biochemical processes in the body. More importantly, physically active life style and maintain of desirable body weight must be thumb rules in the road map to good health. Further, protecting body from exposure to triggering environments such as smoking, drugs narcotics and alcohols helps the optimum function of the immune system and keeping a number of chronic diseases at bay.

Global pandemic is a challenge to every nation and personal attitude and behavioral changes are necessary to achieve and maintain good health. It is high time everybody to take the responsibility of own and family nutrition and good health with open mind and eyes.

Editorial

Aim for a healthy body weight

The struggle you are in today is developing the strength you need for tomorrow



Dr. Disna Kumari

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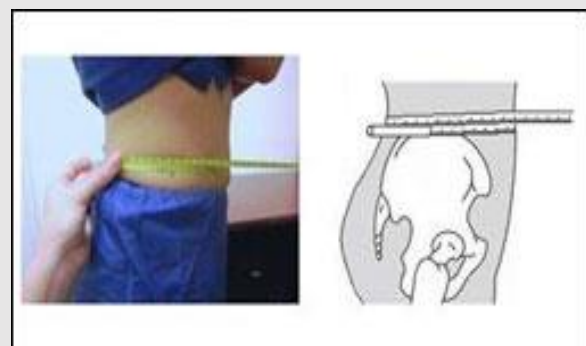
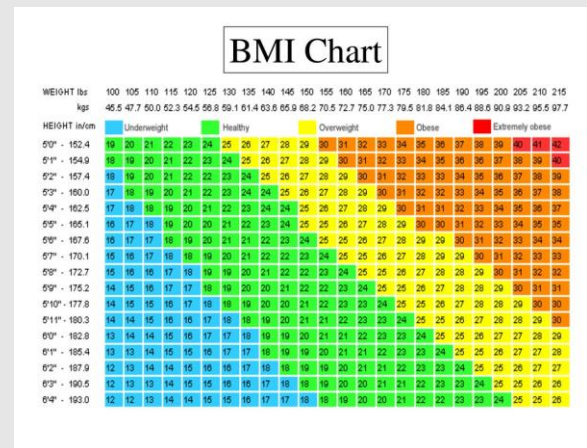
- **Check your BMI - Is it in a normal range?**

If your BMI is 18.5 to 24.9, it falls within the normal or Healthy Weight range.

- **Measure your waist circumference**

A man whose waist circumference is more than 40 inches

A non-pregnant woman whose waist circumference is more than 35 inches have a higher risk of developing obesity related conditions



If you have a healthy body weight it reduces the risk of non-communicable diseases and your body have the ability to circulate blood efficiently, manage fluid levels easily, maintain a better emotional health and you may feel better about yourself and have more energy to make other positive health changes.

Adopting an active lifestyle with good eating habits and adequate physical activity helps maintaining a healthy weight

Active lifestyle



Healthy dietary habits with adequate amount of vegetables



Choose a balanced diet or healthy eating plan

- Have a regular time for your meals (3 major meals + 2 or 3 snacks)

It can adjust according to your schedule, but there should be a regular time table to practice daily



- **Major three meals**

A) **Half of the plate** – filled with vegetables prepared with less amount of added oils, and coconut milk

B) **One third of the plate** – filled with meat, fish or egg prepared with less amount of added oils

C) **One third of the plate** – filled with starchy foods

Snacks – Can use to reduce the hunger level during major meals

Fruits (as fresh fruit pieces/fruit salads)

Tea/ plain tea/ green tea

Biscuits (2 cream crackers)

Any other foods as your preference but little in quantity



Enjoy your meals with different ingredients / preparation methods and especially with variety of foods

Images are from open sources

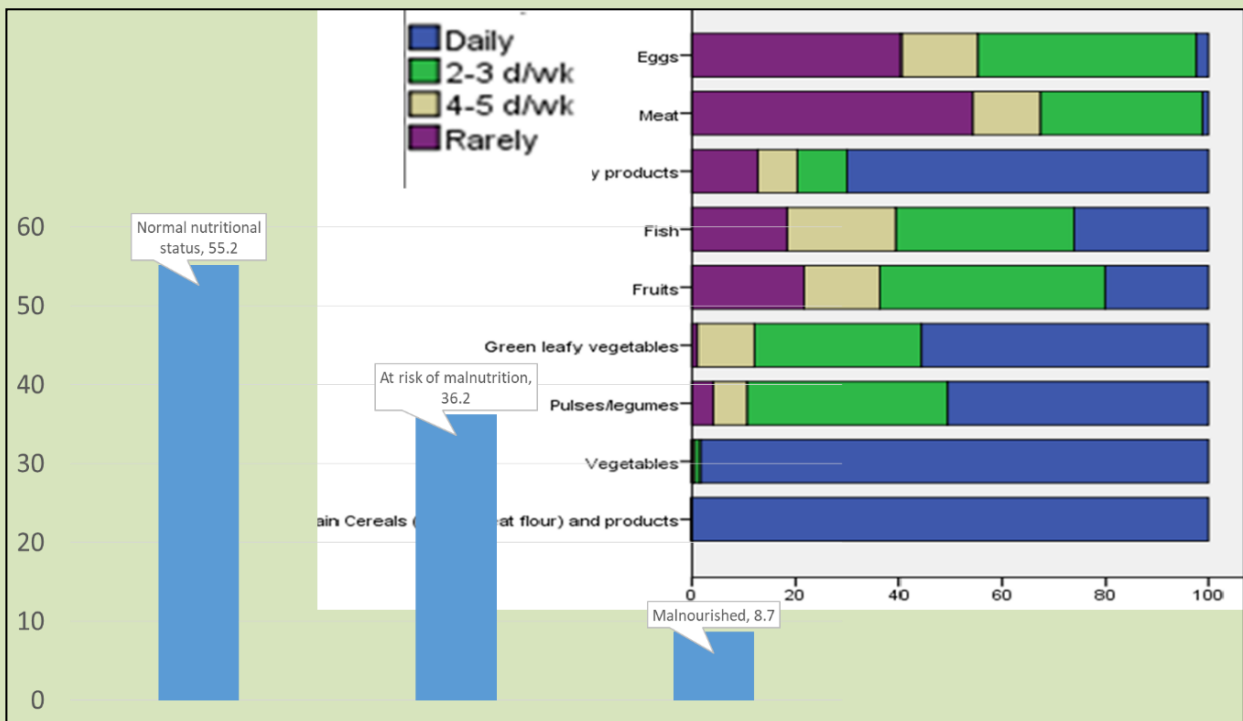
Dr Disna Kumari - Editor of NSSL

Assessment of nutritional status & perception on specific food products by elderly in Sri Lanka



The segment of older persons in Sri Lanka is rapidly increasing in our population and their good quality of life has been a prime importance today. Nutrition Society of Sri Lanka, Wayamba University of Sri Lanka and University of Aberdeen UK have initiated a program as a tri party collaboration on a project “Improving

the nutritional status of the elderly in Sri Lanka using a tailored and scientifically optimized dietary approach: Preliminary data and networking”.



The main objective was to improve nutritional status and promote quality of life of elderly population. Island wide nutrition assessment with 600 elderly was conducted by using mini nutrition assessment. As a follow-up work a consultative stakeholder meeting was conducted on

“Initiatives to improve nutritional status and quality of life of older persons in Sri Lanka” on 27th February 2020 at Raffels, Mirihana with the presence of representatives of government agencies, UN agencies, academia, NGOs and industry to identify the way forward of the initiative. Prof Anoma Chandrasekara, Dr Ananda Chandrasekara and Mr Roshan Delabandara organized the consultative stakeholder meeting on behalf of NSSL. The results of the elderly nutrition assessment showed only 55% were at normal nutrition status while 36 and 9% were at risk of malnutrition and malnourished, respectively. Food consumption pattern showed animal protein intake was low.



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