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NHPC Ltd**Healthy Eating and Junk Food**

In view of LOCKDOWN due to COVID 19 pandemic and also due to easy availability as well as increasing trend of consumption of fast foods and sugar sweetened beverages (fruit juices and drinks, carbonated drinks, energy drinks) in Indian children, and their association with increasing obesity and related noncommunicable diseases, there was a need to develop guidelines and aware people/ parents, related to consumption of foods and drinks that have the potential to increase this problem in children and adolescents.

Defination: Junk food comprises of foods high in dietary fats, sugar, salt, or those which are nutritionally inappropriate. Most of the ultra-processed foods (foods that are commercially prepared by mixing several ingredients and adding additives such as sugars, flavours, and colours) are junk foods as either they are nutritionally poor or high in sugar, salt, or fat. Sugar-sweetened beverages, carbonated drinks, and caffeine-containing drinks are also categorized as unhealthy foods under the broad acronym '**JUNCS**', suggested by the group [Nutrition Chapter of the Indian Academy of Pediatrics (IAP)]

THE JUNCS FOODS: A NEW TERMINOLOGY

J- Junk foods (foods high in fats, especially saturated and trans-fats, sugars and salts, and foods lacking in micronutrients/minerals)

U- Ultra processed foods (as defined in the fourth category of NOVA classification)

N- Nutritionally inappropriate foods. Home-made foods can also qualify to be nutritionally inappropriate if prepared in recycled oil, or contain high amount of sugar, fat or salt.

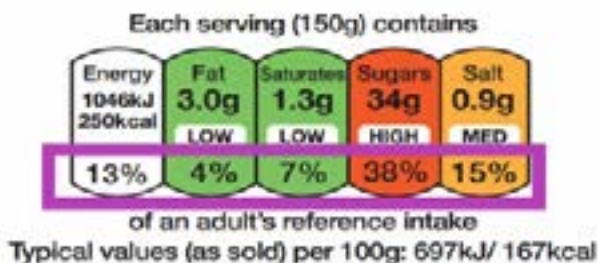
C- Caffeinated/coloured/carbonated beverages

S- Sugar sweetened beverages

o It is associated with higher body mass index (and possibly with adverse cardiometabolic consequences) in children and adolescents. Intake of caffeinated drinks may be associated with cardiac and sleep disturbances.

The group recommends avoiding consumption of the JUNCS by all children and adolescents/ adults as far as possible and limit their consumption to not more

than one serving per week. This supports recommendations of ban on sale of JUNCS foods in school canteens as well as in near vicinity and supports **traffic light coding of food** available in school canteens and recommends legal ban of screen/print/digital advertisements of all the JUNCS food for channels/magazines/websites/social media catering to children and adolescents and also suggests communication, marketing and policy/taxation strategies to promote consumption of healthy foods, and limit availability and consumption of the JUNCS foods.



Children and adolescents should avoid consumption of foods and beverages categorized as JUNCS, as far as possible. Alternatively, limit consumption of these foods at home/outside to not more than one serving per week; serving not exceeding 50% of total daily calorie requirement for that age.

TABLE: **Commonly consumed Junk Foods are:**

Ultra-processed food	Packaged breakfast cereals, ready breads, instant noodles, commercial ice creams and flavoured yoghurts, margarine, milk supplements, packaged snacks and chips
Restaurant food Beverages	Pizzas, burgers, French fries, noodles, pastas Carbonated drinks, fruit drinks (packaged juices with added sugar), flavoured drinks, energy drinks, sugar sweetened beverages

Consensus Statement Summarizing Evidence for Adverse Effects of the Juncs Food

Foods

- Consumption of fast food/junk food/ restaurant foods is associated with higher consumption of calories, free sugar and saturated fats. Excess or deficiency of macro or micronutrients in the body.
- Frequent (>2 times/week) consumption of fast foods is associated with higher BMI in children; results are inconsistent in adolescents.
- It is unclear whether fast food consumption is associated with childhood hypertension.
- Limited data indicate association of fast-food consumption with adverse cardiometabolic markers and insulin resistance.

Sugar Sweetened Beverages (SSBs)

Consumption of SSBs is associated with higher consumption of free sugar, often exceeding the recommended 5% intake.

Regular (4-6/wk) consumption of SSBs is associated with obesity in children

Sugar-sweetened beverages, but not fruit juice, consumption is associated with dental caries.

Caffeinated Drinks

Consumption of high amount of caffeine through energy drinks may cause cardiac arrhythmias.

Overweight / Obesity - frequent consumption of these foods and the risk of overweight and obesity

High Blood Pressure (due to higher content of salt)/ early onset of diabetes/ dyslipidaemia/ fatty liver / Cardiometabolic Risk/ Dental Caries

- Regular (>4/wk) consumption of caffeinated drinks is associated with sleep disturbances in adolescents.
- Regular (>4/wk) consumption of caffeinated drinks is associated with psychiatric disturbances in adolescents.

JUNCS: (Junk foods, Ultra-processed foods, nutritionally inappropriate foods, Caffeinated / Colored / Carborated beverages and Sugar - sweetened beverages)

BMI: Body mass index. Level of evidence, as per center for Evidence-based Medicine has been provided at the end of each recommendation.

Guidelines and Recommendations

Based on the review of evidence, the group (along with IAP, AAP/ WHO) arrived at the following consensus guidelines:

Guidelines for Children and Families

General Recommendations

- Avoid consumption of the JUNCS foods and beverages by all children and adolescents, as far as possible.
- Alternatively, limit consumption of the JUNCS foods at home/outside and suggest to have not more than one serving per week; serving not exceeding 50% of total daily energy intake for that age. • Do not consume foods while watching television/ screen.
- The Group endorses WHO guidelines to eliminate trans-fat and reduce free sugars to <5% of total energy intake.
- Freshly cooked home foods with minimal addition of sugar and no trans-fats should be preferred over restaurant/ packaged foods.
- Traditional and acceptable home-made snacks with long shelf-life can be offered to children as alternative to the JUNCS foods.
- Lunch boxes packed only with healthy food should be carried to school if school does not have provision of providing healthy mid-day meal.
- The JUNCS food should not be offered as reward/gift to any child as this gives undue promotion to unhealthy foods.

Fruit juices

- Encourage intake of regional and seasonal whole fruits over fruit juices in children and adolescents. Fruit juices/ fruit drinks/SSBs should not be offered to infants and young children aged below 2 years.
- For children and adolescents (2 yrs to



19-21 yrs) fruit juices, fruit drinks and SSBs should be avoided as far as possible. Water should be encouraged as the best drink and should be promoted over fruit juices/drinks at home and school.

- Fruit juices/drinks, if given, should be limited to 125 mL per day for children aged between 2-5 years, and 250 mL per day for age >5 years; and these should preferably be given as fresh juices.

Caffeinated drinks

- Caffeinated energy drinks should not be consumed by children and adolescents. Intake of carbonated drinks, tea and coffee is to be completely avoided by children <5yrs.
- In school going children and adolescents, tea/coffee intake should be limited to maximum of half cup/day (100 mL) in 5-9 y, and one cup/day (200 mL) in adolescents (10-19 y), provided no other caffeinated products (cola, chocolates) are being consumed.

Policy Recommendations for Schools, Labelling, Advertising, and Marketing

Guidelines for Schools

- The Group supports Ministry of Women and Child Development recommendations of ban on sale of HFSS foods in school canteens and in near vicinity of 200 meters. We also suggest expanding these recommendations to all the JUNCS foods.
- Efforts to regulate availability of the JUNCS foods in schools must be coupled with ensuring availability and affordability of a variety of healthy snacks and foods in mid-day meals or school canteens.
- School authorities should ensure availability of safe and potable drinking water in schools to reduce consumption of SSBs.
- Ensuring ongoing support, provision of resources, monitoring, feedback and recognition will help to increase the compliance of schools to provide healthy food to children.

Guidelines for Labelling

- We support and advocate traffic light coding of all packaged food as suggested by FSSAI (Food Safety & Standards Authority of India). Labelling of nutritional content of packaged foods should be further strengthened.
- The Group supports traffic light coding of food available in school canteens, for their nutritional value; and advocates its extension to all packaged/ultra-processed foods in future.

Guidelines for Advertisements

- The Group agrees that advertising has strong impact on dietary intake. Advertisement of the JUNCS foods may lead to unhealthy food choices and is likely to be associated with increasing obesity.
- The Group recommends legal ban of screen/print/ digital advertisements of all JUNCS foods for channels/ magazines/websites/social media catering to children and adolescents through legislative measures.

Guidelines for Marketing

- The Group suggests providing tax discounts on healthy foods and beverages and regulation of discounts on large portions and multiple purchases of the JUNCS foods.
- Differential taxation on the JUNCS and healthy foods/ beverages should be considered to promote healthy eating.
- Ensuring availability of variety of healthy food menu at markets/restaurants will give better options for general public, thereby promoting healthy lifestyle.
- Steps should be taken to curb round the clock availability of the JUNCS food on order through mobile Apps.

Behavioural Change and Communication

- School-based interventions are more effective than home-based strategies. All schools should promote balanced diets and highlight adverse impacts of unhealthy foods in a structured curriculum.

- Nutrition education initiatives should be taken to increase awareness among school children. Schools should be motivated to organize poster-easy-competitions, debates, etc on adverse effects of the JUNCS foods, besides teaching about healthy and balanced diet.
- Parents should themselves follow healthy eating habits and serve as role models for children thereby providing them a nutrition sensitive and enabling environment.

Role of Indian Academy of Paediatrics (IAP)

- Indian Academy of Paediatrics should ensure promotion of and dissemination of these Guidelines to children, adolescents, and teachers in schools through all running and planned school-based modules developed from time to time.
- The Academy should advocate and appeal to government (FSAAI, MoWCD, MoH) agencies for front-of-pack traffic light labelling of food and ensuring compliance of directives to schools, besides including these Guidelines in the school health program.
- Children, parents and general public should be advocated about the associated ill health effects of the JUNCS foods in various.
- The Academy should avoid promoting the JUNCS foods through its instruments and activities by avoiding sponsorships from makers of such foods.

Strategies to Reduce Consumption of Juncs Foods

School-based Programs- Banning the sale of JUNCS foods in and around the vicinity of schools is seen as an effective intervention in reducing its consumption. Government of India has developed many policies in schools like, regulating healthy food options in school canteens, regular consumption of school meals positively influenced the eating habits and also promoting a healthy diet.

Food Labelling- Evidence supports “Front of Pack” nutrition labelling as an intervention as it helps consumers to make healthier choices at point of purchase.

Regulation of Advertisements
Advertisement of JUNCS foods leads to unhealthy food choices thereby leading to obesity. In a survey conducted in Delhi schools, >85% students reported that television was the major source of junk food advertising, followed by magazines, internet and billboards in and around their schools. Enough evidence is available that proves that advertisements of fast foods and non alcoholic beverages on TV, print media, and online portals (such as You Tube) positively impacts its consumption and adversely affects the BMI [97-100]

Information, Education, and Communication - School - based interventions are seen to be an effective strategy in reducing the consumption of the JUNCS foods

School cafeteria interventions reported that fast and intuitive thinking interventions like emoticon labelling, incentives, convenience

and appeal were more common (>89%) and more effective in significantly reducing BMI as compared to mixed interventions and slow and cognitively defined interventions like classroom nutritional programs and educational programs. Their effectiveness can be improved by peer support and changing the school environment to support educational programs.

FAQs (Frequently asked questions):

How much and how often junk food can be allowed for a child in a week?

Children and adolescents should avoid consumption of foods and beverages categorized as JUNCS, as far as possible. Alternatively, limit consumption of these foods at home/outside to not more than one serving per week; serving not exceeding 50% of total daily calorie requirement for that age.

As working parents, we are dependent on breads, cornflakes, etc. Are they healthy?

Many parents look for quick solutions to feeding the children, especially when both are working. Most of the ready-to-eat foods are not as healthy as they are often claimed to be. Some of the examples to explain this fact are as follows: Cornflakes have a low-fat content, but the sugar, flavor, and corn syrup added to the flakes make it an unhealthy choice. Cornflakes are made up of malt, fructose corn syrup, and sugar, which make them very high in refined sugars. Corn syrup used in corn flakes has been found to have high levels of fructose in them. They might be low in fat but the sugar content promotes fat storage. Similarly,

bread is relatively low in essential nutrients. It is rather high in calories and carbs but low in protein, fat, fibre, vitamins, and minerals. Its excessive intake, especially white bread containing simple carbohydrates, can lead to unwarranted weight gain and predisposition to chronic ailments such as diabetes and heart disease. Even most brown bread predominantly have refined flour and are processed in same way as white bread.

What are healthy food options for babies, toddlers, and young children?

All babies till 6 months of age should be exclusively breastfed. Any sorts of ghutti, water, top milk, honey, juices, or tea are not permitted. Beyond 6 months, some common homemade food options are:

ased on the review of evidence, the group (along with IAP, AAP/ WHO) arrived at the following consensus guidelines:

Common homemade food options:

These are just some of the examples. Fresh homemade foods, low in sugar, salt and saturated fats, and high in proteins should be preferred.

What should be the energy intake from various types of foods?

Total calories in a healthy meal should be divided as 15–30% from fats, 10–15% from

proteins, and 55–75% from carbohydrates. Free sugars should be any trans fat. Recommended salt intake up to 12 months is <1g salt, 1-3 yrs <2 g, 4-6 yrs <3 g, 7-10 yrs <5g, and for >11 yrs 6 g/ day.

My baby likes juices and shakes. Are they healthy and how much can I give?

Pre-packaged juices and shakes are not healthy foods to be offered to children. Regarding juices, it is always better to give whole fruit rather than fruit juice. Eating whole fruit has advantages, including more fibre content, more nutrient content, and lesser chances of microbial contamination, which can happen while extracting juices. Regarding how much juice to give, the recommendations are:

- Fruit juices should not be offered to children less than 2 years.
- For children 2–5 years, up to 125 mL of only fresh homemade fruit juices with no added sugars can be given, per day.
- In children older than 5 years, the amount can be increased till 250 mL per day, but it should be fresh, homemade, and without added sugars.
- Canned and packaged fruit juices are not advisable. For milk-shakes, whole fruit mashed with milk at home without any added sugar can be given but

For infants 6 months to 1 year

Khichri, dalia, sooji kheer, mashed potatoes/ banana/ boiled vegetables, upma, mashed idli, and curd

For toddlers and children

Dal, rice, chapatti, vegetables, curd, chilla (dal and besan), egg, fruits, idli-dosa with homemade batter, upma/seviyaan/poha (with vegetables), milk fruit smoothies without sugar, cooked beans, and roasted/ boiled chicken/fish

milkshake powders or juice extracts should not be used. The best beverage to offer any child is clean pure water.

Should I start adding milk supplements to my toddler's milk. I heard that they give lot of energy, vitamins, and minerals. Is this true? What is the right age to give them?

Malt-based milk supplements are very commonly used in India. While the primary ingredient is malt, mostly barley, or cereal derivative, the secondary ingredient is invariably high content of sugar. It is the free sugar which becomes a matter of concern for us. It is not only addictive but leads to all associated problems such as weight gain, dental caries, and risk for chronic lifestyle related ailments. Milk supplements belong to ultra-processed food category and should best be avoided. Advertising has often portrayed the supplements as full of energy, vitamins, and minerals. The quantities of micronutrients present in these drinks may give some benefit to children who have their deficiency, but have no role in healthy kids. Even for providing the vitamins and minerals, the same amount can easily be obtained from other foods which are not only cheaper but also do not have associated ill effects as with these drinks. Results of improved calcium clearly indicate that it is just the milk that was responsible for it.

We prepare all sorts of delicacies such as pizza, burger, samosa, and kulfi at home. Are they still junk food? Are traditional foods such as halwa, poori, and sewaiyaan also junk food?

Any food which is high in fat content,

especially saturated fat and trans fats (produced from chemical process of hydrogenation of vegetable oil), sugars, and salts is considered as junk food. These foods are high in calorie and fats, and low in nutritional value. However, these are still better than similar foods available in market as there are no colours, preservatives, and taste enhancers in home-cooked food, and children tend to eat them in limited quantity as against ultra-processed foods which are usually consumed in higher quantity due to their taste, colour, and flavour.

Home-made foods can be made slightly healthier by following modifications:-

- Maintain hygiene to decrease chances of microbial contamination, so less risk of infections.
- Avoid reuse of pre-heated and used oil.
- Restrict sugar and salt content .
- Less refined products can be used like whole wheat flour instead of maida and jaggery instead of refined sugar.
- Avoid using preservatives and colours.

Which oil should be used to cook food? Is it good to prepare food in desi ghee and butter?

You can use the same oil which is being used to cook food for other family members. No single oil/ fat has an ideal composition, and hence a frequent change of oils between groundnut oil, mustard oil, and soyabean oil is preferred. Some people also use olive oil. If we are using the same used oil repeatedly for cooking, it increases the component of trans fat which is unhealthy and very harmful for the body. Thus, reusing the oil that has been earlier used for frying should be avoided. Yes, we can

use a bit of desi ghee or butter in preparing food to make it healthy and palatable but we should keep the fact in mind that per day saturated fat should constitute

My child is not ready to eat home food. What should I do?

This is a common problem that many parents face. In first place, we should try to avoid initial introduction of junk food so that children do not get addicted to their taste and flavour, thereby decreasing dependency on these foods.

For parents whose children have already crossed this stage, and are now fussy eaters to healthy food, the following tips may be used to overcome their dependency: -

- Stay calm, do not get angry or shout.
- Do not try force feeding.
- Keep healthy food around; do not get junk food at home.
- Be a role model. Children are silent observers; they will follow what you do.
- Start with introduction of just one healthy food at one time. Introduce in a cheerful way.

Make taste and appearance modifications in healthy foods. Avoid intermittent snacking. Involve child in preparing and serving meal or snack.

My child takes lot of tea and coffee (four to five cups per day), especially during examination time to stay awake but still feels sleepy. Some of his friends have suggested some energy drinks for the same but I am very apprehensive about it. Please guide me what is right for him.

Tea, coffee, and energy drinks are basically caffeine-containing drinks. Often children

tend to take these drinks to stay awake and feel more energetic. However, excessive caffeine intake can lead to serious consequences such as increase in heart rate or abnormal rhythm of heart beats. It may also lead to other disturbances such as poor sleep, restlessness, anxiety, depression, and tremors.

No caffeinated or carbonated drink should be consumed by children, 5 yrs old. In school-going children and adolescents, tea/coffee intake should be limited to maximum of half cup/day (100 mL) and in 10–18 years one cup/day (200 mL), provided no other caffeinated products (cola and chocolates) are being consumed. Caffeinated energy drinks are as strict no for all children and adolescents.

Adverse Effects from Caffeinated Energy Drinks Besides the added effect of excessive calorie consumption on weight gain, the most dreaded complication of caffeine containing energy drinks (CCED) is its cardiovascular toxicity. Caffeine being structurally similar to adenosine, binds and thereby blocks its receptors, with an overdose resulting in tachycardia followed by arrhythmias – supraventricular or ventricular, hypotension and even cardiac complications/emergency. The common expectation of an “energy boost”, making CCED very popular among vulnerable adolescents, leads to overconsumption, which affects sleep, causes negative psychological effects and thereby paradoxically potentiates further mental stress.

The Academy should avoid promoting the JUNCS foods through its instruments and activities by avoiding sponsorships from makers of such foods.