



NATIONAL FUND FOR  
THE DEVELOPMENT OF EDUCATION

PNAE NUTRITIONISTS

Reference Guide for School Feeding for Students

**WITH SPECIAL DIETARY NEEDS**

Brasília - DF  
2017

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This Reference Guide and its attachments provide dietary orientations to primarily support the elaboration of special menus for the National School Feeding Programme (PNAE) and they do not aim to replace the assistance and prescriptions of doctors, nutritionists and other health professionals. This Guide is based on clinical protocols and therapeutic guidelines (PCDT), national agreements and guidelines, as well as on applicable legislation. This Guide can be adapted depending on the district, state or municipality clinical protocols and therapeutic guidelines (PCDT) or based upon the decisions of a local responsible for school nutrition.

The Ministry of Health warns that breast milk contains the essential nutrients for the children's growth and development in their first days of life. Breastfeeding avoids infections and allergies and it is recommended until two years of life or more. After 6 months of age, keep breastfeeding your baby, and start giving him/her food.



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# A MESSAGE TO THE SCHOOL COMMUNITY

The National School Feeding Programme (PNAE) is one of the largest feeding programmes in the world. Hence, the dialogue promoted by this document with the professionals in charge of the public politics in the schools is very important. It is also fundamental to be in tune with these professionals when the issue of feeding our students with special assistance needs is considered.

Three years ago Law #12,982/2014 was published, which establishes that the school feeding special menus must be compulsorily created. By doing so, it confirmed and consolidated the National School Feeding Programme Guidelines, as determined by Law 11,947/2009. For this reason, it is of paramount importance to provide proper and healthy meals, consisting of safe and diverse food, respecting culture, traditions and healthy feeding habits, contributing to the students' growth and development and to improving the students academic learning, according to their age and their health condition, including those students who need specific attention.

The recommendations presented in this Guide have been developed based on the experience of many municipalities, states and the Federal District, as well as from technical publications of scientific institutions and the Federal Government. However, this Guide does not aim to strictly delimit the way students should be assisted. The nutrition reality across the country is very diverse, not only because of its dimensions and sociocultural aspects, but also because of different management models and communication approaches. The bottom line is that every school should accommodate these students even when their medical certificates and their reports are provided by different public and private health care providers.

In this respect, we hope that this Guide will be a reference to help nutritionists make decisions on how to establish assistance flows, supply procedures and special menu preparation. This Guide also aims to support school board management in the scope of PNAE, regarding students with special assistance needs.

**Silvio Pinheiro**  
FNDE President



## BACKGROUND AND SPECIAL THANKS

The effort leading to this Guide consisted of technical consulting in cooperation with the Organization of Ibero-American States for Education, Science and Culture – OEL, which took place during the second half of 2014. The reviewing, approval, and publication of this document occurred between 2015 and 2016.

To provide a solid foundation to this Guide, work began by researching clinical protocols, guidelines, and agreements about the main Students' Assistance Centers (NAEs), aiming to identify some available specific and official references.

During the beginning of the research process in 2014, technical visits and meetings brought together the Government Nutritionist of the Federal District and the township nutritionists of Florianópolis, Rio de Janeiro and São Paulo, as well as Prof. Dr. Sandra Soares Melo, from Vale do Itajai University (UNIVALI).

Still in the initial stages of the research (August 2014), a meeting to consult the civil society took place in São Paulo. The following institutions joined this meeting: Associação Brasileira de Assistência à Mucoviscidose – ABRAM (the Brazilian Society of Fibrosis Cystic assistance), Associação Brasileira de Ostomizados – ABRASO (the Brazilian Society of Patients living with Stoma), Associação de Diabetes Juvenil – ADJ (the Association of Young People with Diabetes), Federação Nacional das Associações de Celíacos do Brasil – Fenacelbra (National Federation of Celiac's Associations of Brazil), Grupo de apoio aos portadores de necessidades nutricionais especiais – Instituto Girassol (the supporting group to assist individuals with special dietary needs), Movimento Põe no Rótulo (the civic movement "add it to the product label") and Associação Pró-Crianças e Jovens Diabéticos – Pró-Diabéticos (the Pro-Children and Young People with Diabetes), which participated on the phone.

Based on the information assembled in the initial process research and documentation, a descriptive qualitative poll was created and sent to the registered nutritionists from the school feeding technical board – SINUTRI/FNDE. Between September and October of 2014, 1,644 nutritionists of the pool of institutions, comprising the town council, the Federal Department of Education and Federal schools, answered the inquiry. The outcome from this poll enabled the consultant and the Federal Government to better understand the local reality in student's assistance, which supported the proposal of guidelines to implement the legal procedures and adapt the respective documentation for the Students' Assistance Centers.

The final version of this Guide was updated by the consultant in 2016 and reviewed by the Health Ministry General Coordination of Feeding and Nutrition (CGAN/DAB/SAS/MS), by the Health in the School Programme (PSE/SECADI/MEC), by Dr. Maria Cecília Cury Chaddad, lawyer and member of the civic movement "Põe no rótulo" ('Add it to the product label'), and by the nutritionists Cybelle de Aquino Torres Alves, PNAE agent CECANE/UFBA and Daniela Gasparetto, of the Armed Forces Hospital (Hospital das Forças Armadas – HFA/DF).

The official release of this Guide's first version (via digital media) took place during the XXIV Brazilian Congress of Nutrition (Congresso Brasileiro de Nutrição – CONBRAN), in Porto Alegre/RS in October 29, 2016.

Finally, we hereby express our special thanks to all those mentioned here who contributed to this Guide.

## 1 Implementing the Assistance to Special Needs

In most cases, the assistance of students with special dietary needs in the Implementing Bodies occurs as a spontaneous demand. The first students showing special dietary needs bring out the requirement for this service to be organized. The orientation and information provided in this section aim to help organizing the school feeding assistance to these students, in terms of assistance flow, management, and liaison. In what follows, each section will approach specific recommendations for each special dietary need or group with special needs, such as special menu preparation and caring for students with specific conditions. Additionally, different types of communication materials, which can be used to guide cooks, teachers and students' guardians are provided in this document.

### 1.1 Internal and intersectorial setup to support students

Nutritionists that are well-connected with other sectors and their superiors facilitate the introduction of the assistance to students with special dietary needs. Discussing it with management is the first step to formalize the provision of such a service.

Specifically at municipality level, intersectorial communication with the Municipal Health Department can advance some agreements and standards concerning prescriptions and assistance flow. Schools, including the federal ones, that have ambulatory care available, might make use of it. Although this publication was predominantly based on official documents and Clinical Protocols and Therapeutic Guidelines (PCDT), its application at the local level may require the identification of local level regulations.

Whereas intersectorial communication may result in publications of local protocols already adapted to school feeding, PCDT (Clinical Protocols and Therapeutic Guidelines) aim to clearly determine the diagnosis criteria of each illness, the medical algorithm and the methods to monitor the effectiveness of clinical treatment, as well as, to monitor possible side effects. PCDT are also concerned with methods to provide safe and effective medical prescriptions, based on ethic and medical knowledge.

Most of the time, school directors are the ones students look first for help. In large schools the director may delegate this role to a different professional, but in the end, the director is the primary reference for the students. In some of the Implementing Bodies (IB's) there is a person in charge for the school meals, such as a supervisor who may take on that role. In this reference guide, the director has been chosen as the support focal point in the school for mothers, parents, and guardians of students with special dietary needs.

In a context where the support focal point is not the nutritionist, it is fundamental to define methods that can beforehand orient all individuals involved. First of all, it is advised to have an internet page to provide information about school feeding in order to give general guidance about the support focal point and about the student's right to a special menu (i.e., how a student should proceed to have access to a special menu). Note that, the first step for someone to apply for their rights, is to be aware of them.

The directors should be oriented ahead of time about the support flow and have a communication channel to seek guidance for exceptional cases. Municipal Education Departments that have their processes mapped and computerized may need to implement specific flow mappings to adapt to their own systems.

Another concern is the need for qualification of the food handling professionals. In order to assist the students, the workflow must include training for the food handling professionals. It is necessary to plan prior training on food preparation techniques, recipes and specific care concerning each disorder. In addition, it is also important to take special care of food preparation for allergic students, gluten free recipes and when replacing salt by herbs.

## 1.2 Students support flow

The general idea of the recommended flow to support students with special dietary needs are presented in Fig. 1. The preparation of a specific flowchart to each Implementing Body by the school nutritionist can help the multiple social roles involved to achieve a better understanding of the process.

In the flowchart, five starting points have been considered to identify the students with special dietary needs: from a spontaneous demand, from a presumption of demand by the school, from a remark added on the registration, from the health service referral, noticed by the School Health Programme (PSE), and from nutritional diagnoses.

It is advised to keep the school director as the support focal point in the school, as he will be the one in charge of meeting the guardian of students with special dietary needs, receiving the medical certificate, and making sure it is completed (including at least one clear diagnosis, disorder name/ illness).

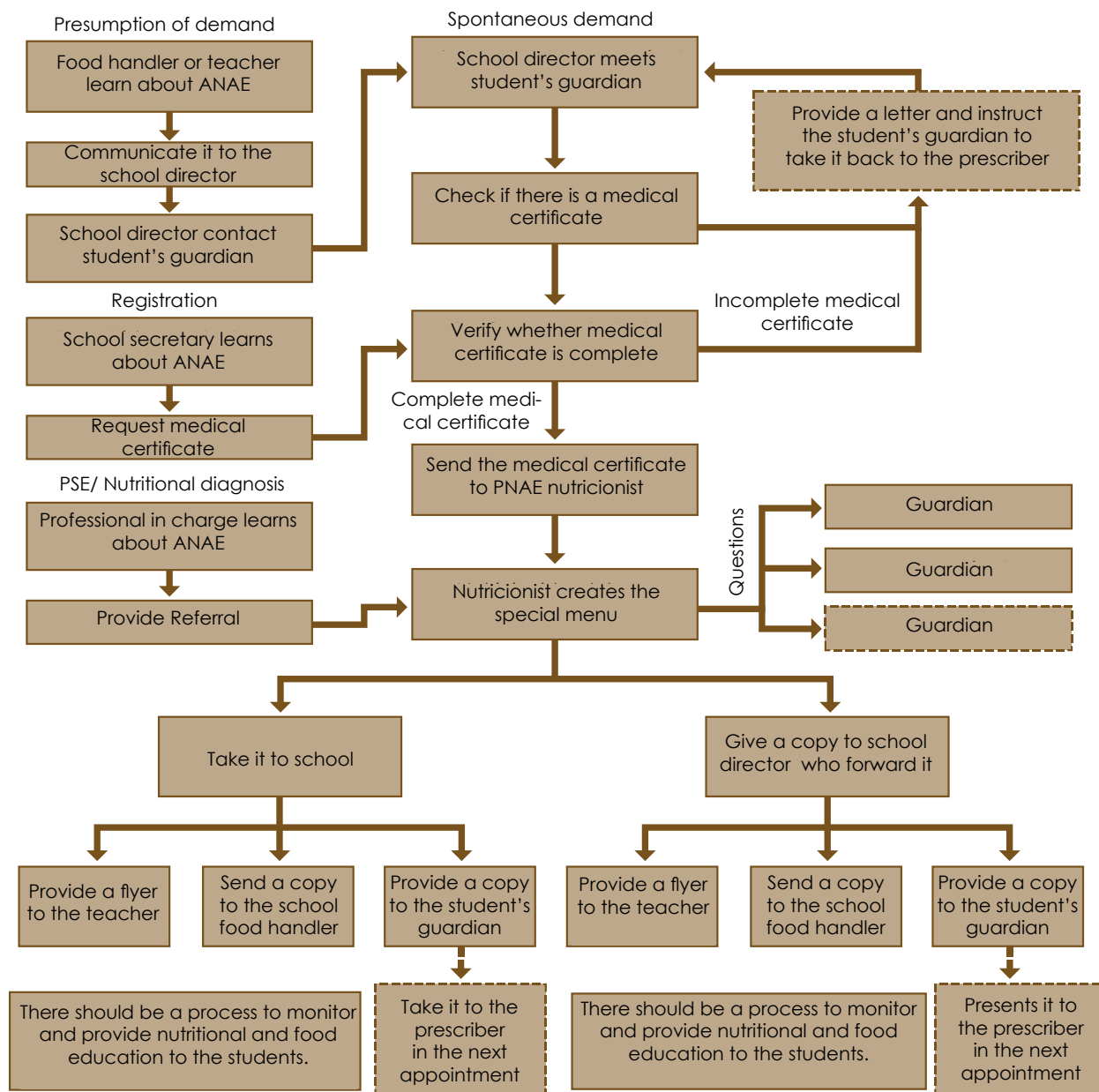
Apart from the spontaneous demand, the director should be aware of presumptions that might come up during school activities, either from direct presumptions or from informal conversations. A sign can be fixed in the school board to inform the students' guardians about their right of having a special menu, and once any student needs this service, he should contact the school director.

The recommendation is to inquire the student about any special dietary needs when registering for school through some sort of medical form or similar document defined by the IB from which a report could be generated to or from the PNAE professional in charge.

Students with nutritional diagnosis referred by PSE professionals and by a PNAE nutritionist should also see the school director.

In all cases, the director has to verify the medical certificate before sending it to the nutritionist. However, when meeting the director, students without or having an incomplete medical certificate (missing disorder/ illness) must be provided with a letter to take to the doctor. This letter can describe the school feeding routine and the process flow to assist students with special dietary needs. The same kind of letter could be provided to the health and social assistance centers, such as Social Assistance Reference Center (CRAS) and The Down Syndrome Parent and friends Association (Apae). A few school letter examples are provided in the end of this section.





ANAE: Students with special dietary needs  
PSE: School Health Programme

### 1.3 Diagnoses, feedback to the students' legal guardian and counter-referral

The example letter on appendix A makes some considerations about the medical prescription or similar document. Law # 12,982/2014 establishes that a special menu should be 'elaborated based upon medical and nutritional recommendations, nutritional evaluations and special nutritional demands'. There is no legal specification which determines whether or not the menu should be elaborated from a medical certificate, report or other document. As a general guideline, the medical certificate should be verified and complete. Thereby, when information is missing in the document, additional information should be required from the student in order to understand her real condition. For example, for special menus in which cow's milk replacement has been prescribed, there are different recommendations for diarrhea, lactose intolerance and allergy to cow's milk protein. Another important aspect is

assistance duration with respect to a specific prescription. Most conditions do not require a permanent special menu.

For some types of food allergy, a medical evaluation is required to check tolerance acquisition after a certain period under an elimination diet. In case of absence of regulations determining a valid duration for the diagnosis certificate, some nutritionists require that it be renewed on a six-month or yearly basis. Note that, in the example letter provided, the 'duration of the treatment' has to be filled out to make sure this piece of information will be provided.

It is also important that, the nutritionist or the school director keep the student's guardian informed about the assistance that has been given to the student. Therefore, it is recommended that one copy of the special menu should be signed by the student's mother, father or guardian, another copy should be on file, and another one should be kept by the student to be taken to the next appointment to his prescriber. During this process, it is recommended that the school feeding nutritionist provides a counter-referral when the doctor provides a treatment referral.

In case a student provides only a medical certificate, it is the chance to explain him about the need to be assisted by the nutritionist of the health care department. However, if the student has already been assisted, then the student's guardian should provide a copy of the special menu to the nutritionist of the health care department at school, so that the health care nutritionist can add it to the nutritional guidance.

#### **1.4 Special food acquisition**

One of the challenges the school feeding team faces is to plan the amount of special food items to be acquired. Usually, this kind of food does not belong to the standard menus of the school, but is necessary when preparing the special menus. These foods could range among simple items that are not usually purchased due to their high cost (such as olive oil or flaxseed) to more specific foods (such as infant formula or gluten free products).

The Brazilian Federal Constitution of 1988 establishes in its article 37, subsection XXI that public acquisition must be done through public bids that offer the same terms to all competitors. It is recommended that the implementing bodies plan the acquisition of special food items for the special menus from a food public bid process for school feeding. Accommodating for the variation in number of students with special dietary needs can be challenging. In general, this number raises every year, as well as throughout the year. Schools ought to stipulate in the bidding notice that the acquisition of special items for students with special dietary needs will depend on the effective demand, i.e., the number of notified cases. Nonetheless, Law # 8,666/1996, 1<sup>st</sup> paragraph, article 65 allows the public administration to add or cancel 25% of the contract total quantity. Also, an extra need of specific foods for the special menus during the school year might justify a contingency acquisition without public bid, which is established by article 24, subsection IV. In these cases, the technical and the law departments ought to justify such choice.

Because of the demand complexity of this kind of foods, a good option is to choose a price registration system (SRP). In the SRP, the supplier selected through a bid process is committed to provide the products in minimum amount orders and other specific conditions agreed through bid notice, for a certain period, in a registered price that can or cannot be adjusted. According to the demand, the implementing bodies

may have successive contracts during SRP validity, however, without an obligation to contract the service. In this context, such qualities make the SRP an appropriate procedure, according to subsection IV, article 3 of law decree # 7,892/2013.

Acquiring a small number of some specific items can lead to failure, especially in a bidding process in which the products will be delivered at schools. In this case, an option would be to zone municipality/state supporting local supplier and decrease the number of deliveries, according to the expiration date of those products.

In addition, some implementing bodies may use their own financial resources specifically when buying small quantity of products, where the financial resources are transferred to the school for direct acquisition with bid process exemption. In this case, it is fundamental to have well-instructed professionals that are able to select the right product or provide them a list of products and brands approved beforehand by the technical department (preferably a selection of at least 3 different brands of each product).

The bid terms defined by the implementing bodies may require the products from the winning bid to be submitted to an acceptance test, for instance, that could be randomly applied in one of the schools, according to the a protocol recommended by FNDE. The supplier contract may be canceled in case of negative feedback from students in need of the specific product, according to the acceptance standard index established by the Programme rules, once the notice bid specifies it.

The communication between the Municipal Department of Health and a municipal implementing body, directly via Intersectorial Team Work of the Health School Programme (GTI/PSE) can bring together the school food delivery and the Municipal Department of Health.

Bringing these institutions together is important because there will be some students with prescriptions from the Public Health System (SUS), who will need infant formula or dietary supplements granted by SUS. In this case, part of these products (for the period in which the students are under the school responsibility) could be delivered directly to the school.

However, in some cases the student's guardian will be in charge of receiving these products and taking them to school. The same situation may happen with products supplied by public or philanthropic social assistance entities.

### **1.5 From menu to distribution**

The nutritionist will only be able to create the special menu and give orientation based upon medical prescription from the students with special dietary needs. In some cases, the special menu and the standard menu can be very similar, so an instruction sheet could be applied to describe preparations and food replacement. While in other cases, it might be necessary to create an entire new menu and compute its nutritional value.

The menu handling flow to the school may also change, as it could be given in person or sent to the school director. Depending on the school, there will be different options. For instance, a Federal schools in which nutritionists will be available at school or State Division of large municipalities that offers local sub-divisions and have information technology system. In some IB's this flow may also include a third party company. It is, however, most important to make sure that the director gets back the special menu and orientation for his acknowledgment and then, that the special menu

be forwarded to the food handler.

In the process of preparing special menus, it might be necessary to label prepared meals in order to avoid unintended swap and accidents.

In addition to that, a student identification procedure to distribute foods has to be planned. When the distribution takes place in the classroom, especially for preschoolers, teachers and assistants can help the food handler. However, when the distribution for older students takes place over a counter, the student or student group identification will be more delicate. Some strategic ideas on how identifying these students are as follows:

- Student's parents or guardian could introduce the student to the food handler in order to connect them.
- The student could identify himself at the distribution time.
- Student could wear an identification bracelet (for allergic students, for example) in preschool.
- A picture board with special menu students could be provided to the food handlers.
- The teacher can stay together with student or group of students (with special dietary needs).
- The person in charge for the school feeding can assist at the food distribution.
- Special meals can be given at a different time.
- Self-service in which special meals are previously identified and apportioned can be offered.

### **1.6 Feeding and nutritional education**

Most of special dietary needs have a short, mid and long-term impact in the students' family. Hence, the importance of being aware of feeding and Nutritional Education Activities (EAN). Even in schools where EAN is part of daily activities, the teacher of a student with such a condition can be surprised by a new nutritional topic in the classroom. In this sense, the teacher should receive some guidance and hand-outs about the different conditions in order to be ready. The most common conditions should be added to the teacher's continuing education material. For more information on that, refer to "Final considerations: enhancing dialogue", in the end of this guide.

## Appendix A – Communication and mailing examples: school letter and posters

### Example: School letter to the health practitioner

#### **School letter number XXX**

**Subject:** School feeding for students with special dietary needs registered in the xxxx public school.

Dear Health Practitioner,

The National School Feeding Programme (PNAE) aims to enhance the students' biopsychosocial growth and development, their learning process and academic productivity, as well as to encourage the students' health feeding practice throughout feeding and nutritional learning activities, by offering meals that can provide them nutritional sources during the school year.

The Programme regulation establishes that appropriate and health food will be offered to students, according to their age and the amount of time they spend in school, from menus created by a nutritionist in charge who is available in the Education Department.

Menus are adapted to students with special dietary needs, according to technical criteria, Health Ministry recommendations, and from guidelines and consensus published by medical and scientific institutions. If necessary, under special circumstances, the menu can be adapted to a single student too.

In this case, the health practitioner should fill out the prescription or similar document (in readable letters) with the following information:

- Health care center/ clinic name and phone number
- Institution phone number and/ or prescriber phone number
- Patient name
- Date of birth
- Diagnosis
- Prescription/ nutritional orientation
- Duration of the treatment
- Date
- Signature and stamp

Yours Sincerely,

### Example: School letter to the social assistance professionals

#### **School letter number XXX**

**Subject:** School feeding for students with special dietary needs registered in the xxxx public school.

Dear Social Assistance Professional,

The National School Feeding Programme (PNAE) aims to enhance the students' biopsychosocial growth and development, their learning process and academic productivity, as well as to encourage the students' health feeding practice throughout feeding and nutritional learning activities, by offering meals that can provide them nutritional sources during the school year.

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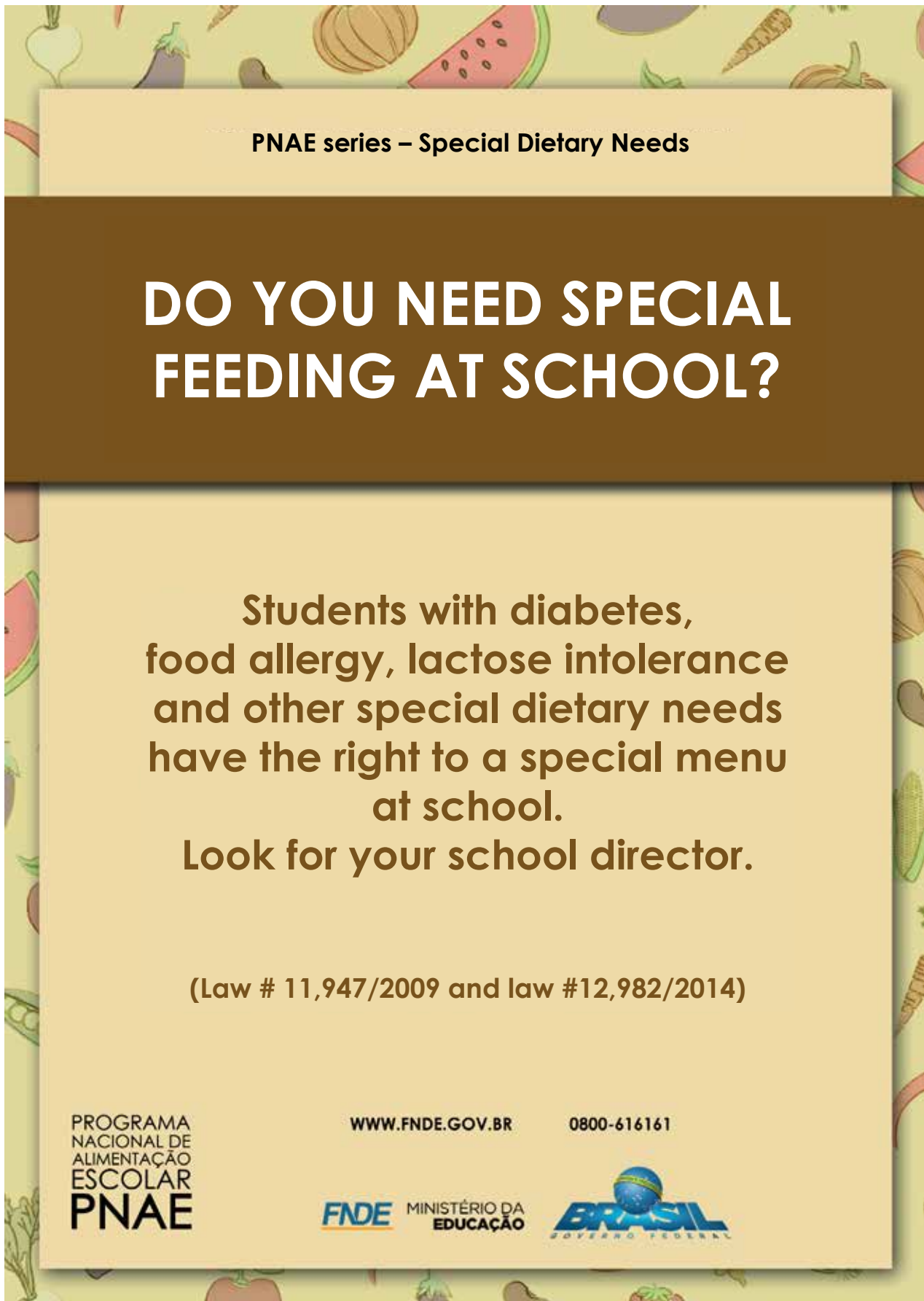
In this case, we ask that a prescription or similar document be provided with the following information (in readable letters):

- Health care center/clinic name and phone number
- Institution phone number and/or prescriber phone number
- Patient name
- Date of birth
- Diagnosis
- Prescription/nutritional orientation
- Duration of the treatment
- Date
- Signature and stamp

It is advisable that parents or guardians receive a copy of this letter in order to present it to the medical care provider. The prescription has to be presented to the school director.

Yours Sincerely,

## Motivating Poster Example



**PNAE series – Special Dietary Needs**

# **DO YOU NEED SPECIAL FEEDING AT SCHOOL?**

**Students with diabetes, food allergy, lactose intolerance and other special dietary needs have the right to a special menu at school.**

**Look for your school director.**

**(Law # 11,947/2009 and law #12,982/2014)**

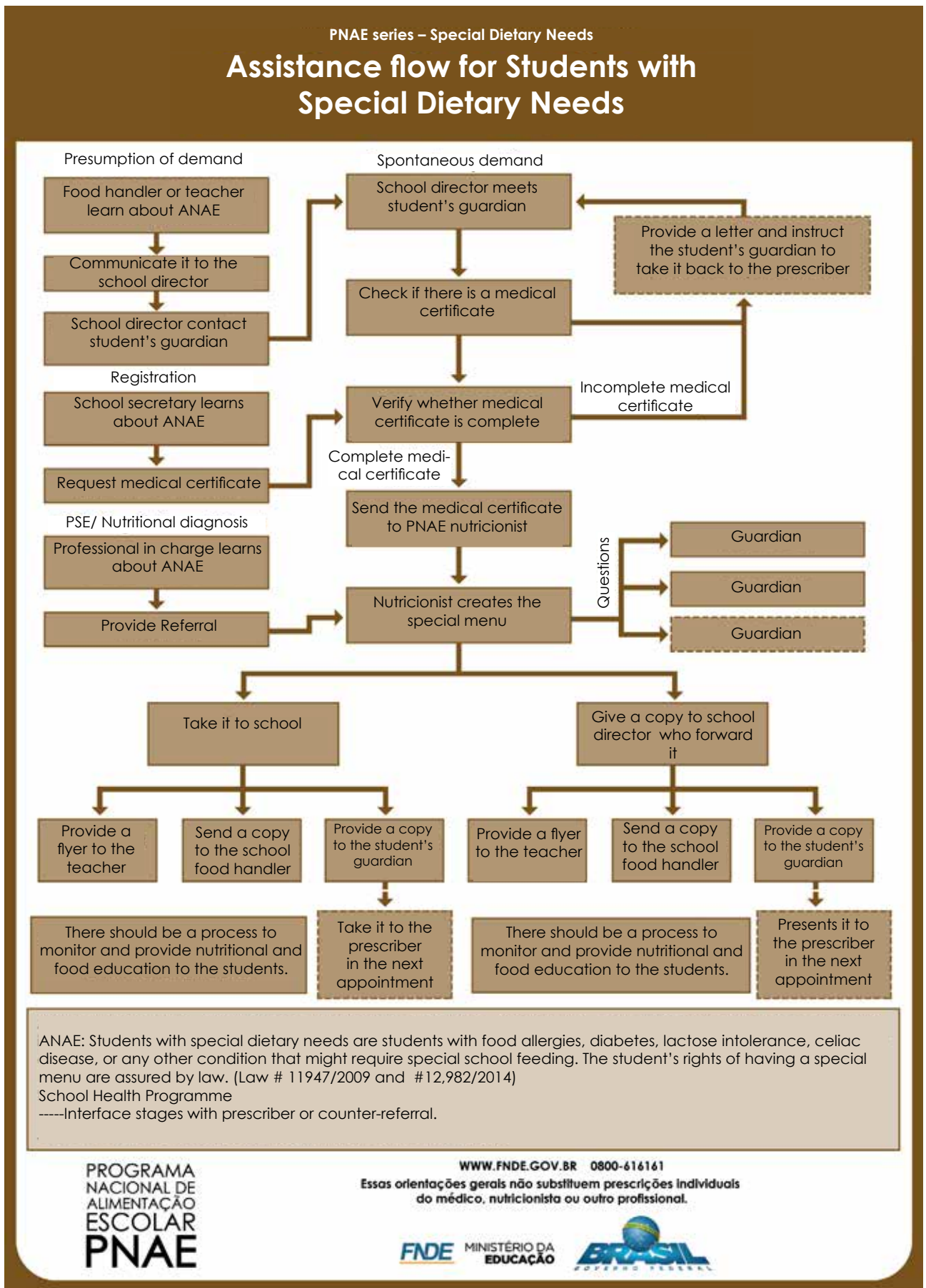
**PROGRAMA NACIONAL DE ALIMENTAÇÃO ESCOLAR PNAE**

**WWW.FNDE.GOV.BR**      **0800-616161**

**FNDE**    **MINISTÉRIO DA EDUCAÇÃO**      **BRASIL GOVERNO FEDERAL**



Example: Flowchart poster





Communication material example: flyer  
Front

PNAE series – Special Dietary Needs

## 10 Steps to an appropriate health diet

### 1. Make natural or low-processed foods the foundation of your diet

- Most of our daily diet should be made of natural foods: fruits, greens, vegetables, as well as low-processed foods such as grains, flours and meat.
- This way, we ensure variety in our diet.

### 2. Use oil, fat, salt and sugar in small amounts to season, cook and prepare meals

- Oil, fat, salt and sugar should be used moderately. Thus, your meals will be more tasteful and healthier.

### 3. Limit the consumption of processed food

- The ingredients and preparation methods applied to processed foods change their essence in an unfavorable way.
- Examples: concentrated tomato paste, canned vegetables, canned or crystallized fruits, canned fish, cheese.

### 4. Avoid ultra-processed foods

- The composition of this kind of food is unbalanced in nutrients, even though its appearance encourages excessive consumption.
- Culture, social life and the environment are affected by the production, sale and consumption of this kind of food.
- Examples: crackers, ice cream, candies, soft drinks, sauces, ready-made seasoning, processed meat, sliced bread and ready-to-eat food.

### 5. Eat regularly and carefully, in appropriate places with other people as often as possible

- Meals should take place regularly at a similar time in quiet places. One should be able to chew food well and have someone as a company.
- Places that encourage excessive eating should be avoided.

### 6. Go shopping in places that offer a good variety of natural foods or less processed foods.

- Preferably when going shopping choose places that offer a variety of natural foods and less processed foods, such as fairs or markets. Also, look for local and seasonal produce.
- Organic and agroecological foods are always a good choice.

### 7. Develop, practice and share culinary skills

- Cooking is a skill to be learned, practiced and shared, specially with kids and young adults.
- In order to improve cooking skills, you can look for family recipes, ask friends, check in the internet, take a culinary course.

### 8. Plan your use of time to allow meals the importance they deserve.

- Planning and organizing yourself can make everyday meals simpler through splitting tasks. This way, meal preparation and the meal itself can be a moment to enjoy and share.

### 9. When eating out, preferably choose places that make fresh food.

- A good option for daily meals are places that make fresh food, such as "per kilo" restaurants.
- Fast-food chains should be avoided.

### 10. Be discerning about information, messages and orientation you get from food advertisement.

- Advertisement goals are to sell a product, not to teach the consumer. Be aware of nutritional information in the products and encourage other people to check nutritional information on products, specially other parents and guardian.

PROGRAMA  
NACIONAL DE  
ALIMENTAÇÃO  
ESCOLAR  
PNAE

WWW.FNDE.GOV.BR 0800-616161

The general recommendation above does not replace prescriptions from doctor, nutritionists or any other health care provider.

FNDE MINISTÉRIO DA  
EDUCAÇÃO



Back

PNAE series – Special Dietary Needs

## Why avoid ultra-processed foods?

### Unbalanced nutritional composition

- Ultra-processed foods are mostly rich in salt and sugar, combined with a large amount of fat.
- Salt helps to extend the shelf life of product, as well as to intensify flavors and hinder unpleasant flavors of some food additives.
- Usually saturated and hydrogenated fat are the type of fats added to ultra-processed foods. Not only they enhance flavor and extend the shelf life of the product, but they also prevent products to become rancid. The problem is that these types of fats are the main cause of clogged veins and arteries in the body.
- Ultra-processed foods usually lack vitamins, minerals and fiber, because natural or low-processed ingredients are a small part of their composition. Notice that vitamins, minerals and fiber are essential for the good functioning of the body.
- Some products may offer different versions (e.g., light, diet or added fiber and synthetic nutrients) in order to make them more appealing. However, these changes do not always bring out clear advantages, such as less fat or sugar in the product.

### Excessive calories intake

- Usually, ultra-processed foods lead us to take in more calories than we actually need because they are able to mislead the hunger and satiation control mechanism of the body.
- For instance, ultra-processed foods contain 2 to 5 times more calories per gram of product than our traditional rice and beans dish.
- Adding lots of sugar, fat, salt and additives make it possible to produce extremely tasteful products.
- Most of the ultra-processed foods can be consumed in any place, without using plates or cutlery. Thus, this kind of products is extensively consumed when watching TV or walking on streets, i.e., situations in which we are not fully aware of the amount of food we are eating.
- Because these products are cheaper than others, usually they are sold in large packages or there is a little price difference between small and large packages, leading us to eat more than we need.
- Our body finds it more difficult to detect large intake of calories when they are ingested as liquids such as soft drinks, juices, processed drinks. A trend that negatively affects culture, social life and the environment

### A trend that negatively affects culture, social life and the environment

- Typically, packages of ultra-processed foods are the same worldwide, and the millions spent in their advertisement lead us to believe we are part of a modern society, whereas natural foods turn out to have little appeal, specially to young people.
- Ultra-processed foods are produced to be consumed in any place, at any time, with no reason to be shared. This way, we lose the social interaction that we experience by cooking a meal and eating at a table.
- The packages of ultra-processed foods are the first example on how they threat the environment. These products require a large amount of a small variety of ingredients which foster the cultivation of single crops using pesticides and chemical fertilizers. Besides that, in order for manufactures to distribute and sell these products, their long supply chain releases pollutant gases and cause large energy waste.

### Where to find more information

Guia alimentar para a população brasileira. Ministério da Saúde. [http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/guia\\_alimentar2014](http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/guia_alimentar2014).

PROGRAMA  
NACIONAL DE  
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WWW.FNDE.GOV.BR 0800-616161

The general recommendation above does not replace prescriptions from doctor, nutritionists or any other health care provider.

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## 2 Food Allergies

### 2.1 Recommendations summary

- Provide student with medical and nutritional guidance.
  - Advise students to renew their medical certificate.
  - Create menus eliminating completely the allergen and its derivatives.
  - Ensure that breast milk can be stored and offered.
  - In cases of food replacement, ensure that food substitutes include the most prioritized macronutrients and micronutrients, according to PNAE regulations.
- Examine food labels and nutrition facts and contact manufacturers to confirm if the product contains any allergen.
- Acquire free allergen products for the entire public school system as often as possible.
- Include a list of free-of-allergen processed foods in the instructions for special menus, as well as in the instructions on how to read and understand product labels.
- Define with food handler a systemic procedure to avoid cross-contamination.
- Adopt special tools and procedures to avoid cross-contamination.
- Inform managers and teachers about possible school supplies that might contain allergens, especially cow's milk protein and wheat.
- Guide teachers to encourage students to wash frequently their hands.
- Advise teachers to be cautious during class activities that require direct or indirect food contact.
- Guide teachers to include in the planning for celebrations and events a reminder about students with special dietary needs, and inform in advance the students' guardian about the events menu.
- Guide school leadership to plan with the student's family how to proceed properly during an emergency. It is essential that teachers can at least identify main symptoms and procedures.

### 2.2 Initial considerations

Food allergy is a term used to describe abnormal response to food depending on mediated or non-mediated immunological mechanisms immunoglobulin E (IgE). The Brazilian Consensus on Food Allergy 2007<sup>1</sup> is the main national protocol about this theme. The most common food allergy during childhood is related to cow's milk protein. In that respect, cow's milk protein immunoglobulin E (IgE) mediated allergy has been addressed in a specific guide entitled 'Practical Guide for Diagnosis and Treatment of cow's milk protein allergy immunoglobulin E (IgE) mediated (2012)<sup>2</sup>.

**ATTENTION!**

The adverse reactions to food include any abnormal reaction arising on exposure to a given food. They are classified as food intolerance or food allergies. Food intolerance occurs due to a food toxic component or chemical component, or due to other substances from an individual's own body. e.g, lactose intolerance due to enzyme deficiency. Food allergy is an immune reaction in which immunoglobulin E or T cells are involved (in some cases, both mechanisms). It is a reproducible immune response to a specific food antigen. Cow's milk protein allergy is the most common type of allergy among children until 24 months, and it is characterized by the immune response to milk protein, specially for substances as casein and whey proteins ( $\alpha$ -lactalbumin and  $\beta$ -lactoglobulin). Its diagnosis is very uncommon among children older than 24 months, since there is a progressive oral tolerance of cow's milk protein.

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BOYCE JA, ASSA'AD A, BURKS AW et al. Guidelines for the diagnosis and management of food allergy in the United States: Report of the NIAD – Sponsored expert panel. *J Allergy Clin Immunol*. 2010; 126: s1-58.

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### 2.3 General recommendations

The need of an ongoing medical assistance (at least by a doctor and a nutritionist) should be advised and reinforced to the student with food allergy in order to ensure clinical-laboratory diagnosis, orientation and medical monitoring. It is essential to monitor the student in order to identify possible cross allergies (with other foods), to constantly evaluate tolerance acquisition, and to evaluate and monitor the overall student's health. It is equally important to evaluate the nutritional conditions of the student which may be affected by his/her allergy reactions and/or by the elimination diet, and also to identify any need to add nutritional supplements on his/her diet.

Typically, food allergies to cow's milk, egg, wheat and soy can be auto-limited, i.e., they vanish in childhood. Therefore, having frequent doctor visits where food challenges are performed allows the doctor to evaluate if there is tolerance acquisition, except for cases associated with anaphylaxis. This process depends on the student's age, the diagnosis duration and history, and has important requisites to take effect, according to

protocols<sup>1,2</sup>. Consequently, it is recommended that food allergy diagnoses not to be considered as a final condition, as continuously applying an unnecessary elimination diet could harm the student in the long term. It is recommended that each IB define their own criteria to request and recommend a medical certificate to the student.

## 2.4 Special Menu

The criterion to create a special menu for a food allergy student is to exclude completely from the menu the allergen food, and in case of nursing children, to add pressed breast milk or infant formula<sup>1,2</sup>. Energy needs as well as macronutrients and micronutrients are not established. However, the nutritional offer in terms of energy must still be assured, including priority macro and micronutrients.

## 2.5 Cow's milk replacement

At first, for those students who are still nursing, their mothers should be highly encouraged to keep breastfeeding them, as well as to follow milk elimination diet and keep nutritional monitoring. Cow's milk replacement is a fundamental stage as it implies many individual factors. Cow's milk should not be replaced by others mammals' milk, such as goat or sheep, because of their antigenic similarity, especially the substance named casein which could result in cross allergic reaction<sup>2</sup>.

Infant formula could be an alternative considered by doctors and nutritionists when keeping breastfeeding is not possible, especially until 12 months. Additionally, infant formula should be only applied to the diet in order to reach the child's nutritional recommendations.

It is important to highlight that the introduction of complementary feeding to children allergic to cow's milk protein should follow the same principle recommended in the "Feeding Guide to Children younger than 2 years old". Infant formula recommended to specific dietary therapies needs to cover: infant formula for nursing children and for children in the early childhood with specific dietary therapy needs<sup>1</sup>.

Thus, it is advised to follow the doctor's or nutritionist prescription. The general agreement<sup>1</sup> and the Guide<sup>2</sup> provides a flowchart to help on the selection of infant formula for cow's milk protein allergy immunoglobulin E (IgE) mediated and non-mediated cases, respectively.

Soy-based infant formula are recommended as a first option for students between 6 and 24 months with cow's milk protein immunoglobulin E (IgE) mediated allergy, if its use will not result in gastrointestinal implications and if the child is not allergic to soy<sup>2</sup>.

Hydrolyzed infant formula are recommended as a first option for nursing students younger than 6 months with food (IgE) mediated allergy and also to students between 6 and 24 months who have not adapted to soy-based infant formula. When the student presents concurrent lactose allergy, lactose free hydrolyzed infant formula should be used. Hydrolyzed infant formula should also be the first option for students with cow's milk protein immunoglobulin E (IgE) non-mediated allergy<sup>1</sup>.

Amino acid-based infant formula is recommended as a first option for students in high risk of anaphylaxis (when there is anaphylaxis history and hydrolyzed infant formula is not in use) and when using hydrolyzed infant formula<sup>2</sup> did not address the children's symptoms.

Soy, rice and oats-based milk are not recommended for children younger than 24 months, but could be used for students older than that, who do not present cross-

allergy to such ingredients.

The recommendation is to be aware when replacing cow's milk for juices or tea due to their appearance (sensory) and nutritional value difference. For instance, replacing chocolate milk for orange juice to a 4-year old student may result in social and emotional distress. Such replacements should be used as a last resource when creating a special menu.

## 2.6 Processed foods and their labels

Food allergens have to be completely eliminated from the school special menu. Therefore, not only food allergens and their derivatives should be kept out, but it should also be verified whether any other product in the menu contains any part of the ingredients of processed foods, even if a minimum fraction (trace), what may require some effort<sup>1,2,16,17</sup>. RDC Anvisa number 26/2015 is a resolution that determines the allergens in food to be mandatory described in food labels<sup>15</sup>. Nevertheless, it is advised always to verify products labels, nutrition facts and contact the manufacturer.

Although food handlers should be oriented on how to examine food labels, it is advised to send to school a list of products that could be offered to the students with food allergies (including the approved products acquired, when applicable). It might be safer to send to the school a positive list (of allowed products) preferably containing their respective substitutes, than a negative list (of not allowed products).

The following chart brings together the essential ingredients that could indicate allergen existence on milk, egg, soy, peanut, tree nuts, wheat and latex.

### Ingredients that could indicate existence of MILK: <sup>2, 16, 17</sup>

- Powdered milk
- Condensed milk
- Cream
- Butter (butter fat, butter oil, butter esters)
- Casein
- Ammonium caseinate
- Calcium, magnesium
- Potassium or sodium
- Powdered milk drink mix
- Lactic yeast
- Lactalbumin phosphate
- Anhydrous milk fat
- Lactate
- Lactalbumin
- Lactoferrin
- Lactoglobulin
- Lactose, lactulose
- Lactulona
- Buttermilk
- Dairy mix
- Milk protein
- Whey protein
- Lactic protein
- Whey protein
- Food coloring made of the following flavors: vanilla, caramel, coconut, milk, butter, margarine, cheese (may contain traces of. Contact manufacture)
- Dairy solids
- Milk's traces
- Whey

**Ingredients to avoid in case of EGG allergy: <sup>16</sup>**

- Egg
- Egg white
- Egg yolk
- Albumin
- Conalbumin
- Flavoprotein
- Phosvitin
- Globulin
- Granulo
- Lecithin
- Low-density lipoprotein
- Lipotelinvi
- Lysozyme (E1 105)
- Livetin
- Mayonnaise
- Meringue
- Ovalbumin
- Egg powder
- Ovoglobulin
- Ovomucin
- Ovomuroid
- Ovotransferrin
- Ovovitelin
- Plasma
- Simplesse
- Egg solids
- Vitelin

**Ingredients to avoid in case of SOY allergy: <sup>16, 22</sup>**

- Lecithin
- Soy flour
- Isolated soy protein
- Textured soy protein
- Vegetable oil
- Whey protein
- B-amylase
- Lipoxygenase
- Glycinin
- Conglycinin
- Globulin
- Hemagglutinin
- Isoflavones
- Urease
- Trypsin inhibitor
- Foods made of soy (edamame, tao-cho, natto, taosi, taotjo, tempeh, teryaki, tofu, shoyo, yuba, suf).

\* A lecitina é um lipídio. Ainda assim, alguns indivíduos que têm alergia à soja reagem ao seu consumo.

**Ingredients to avoid in case of PEANUT allergy: <sup>16</sup>**

- Peanut
- Hydrolyzed peanut protein
- Artificial or natural nuts (risk of nut trace)
- Vegetable fats (less common in Brazil)
- Peanut oil
- Peanut flour
- Marzipan
- Peanut butter
- Chili



**Ingredients be avoid in case of TREE NUT allergy: <sup>16</sup>**

- Almond
- Pecan
- Vegetable oils (Almond oil)
- Hazelnut
- Pistachio
- Marzipan
- Cashew
- Macadamia
- Brazilian nut
- Walnut
- Pine nut
- Gianduja

**Ingredients to avoid in case of WHEAT allergy: <sup>16</sup>**

- Wheat bran
- Wheat flour
- Flaked wheat
- Wheat germ
- Wheat seed
- Durum wheat
- Semolina

**Ingredients to avoid in case of LATEX allergy: <sup>23</sup>**

- Avocado
- Pineapple
- Malpighia emarginata (acerola)
- Plum
- Banana
- Potato
- Portuguese chestnut
- Cherimoya
- Apricot
- Spinach
- Fig
- Kiwi
- Lychee
- Papaya
- Cassava
- Mango
- Passion fruit
- Melon
- Peach
- Bell pepper
- Tomato
- Buckwheat
- Grape

Some of the individuals who have LATEX allergy may present cross-reactivity to vegetables and fruits, mostly tropical fruits, denominated Latex-fruit allergy or Latex-polen-fruit allergy. <sup>22, 23</sup>

Always, when there is an available product without milk derivatives (for example: some breads, cocoa powder, sausages) a record in the bid notice process should display 'cow's milk protein absence, including risk of cross-contamination' to specify this product. Thus, such product free of milk would be available for all schools.



## 2.7 Preparation and distribution

Elimination diets require accurate procedures from the food handler while choosing food free of allergens and using exclusive tools in order to avoid cross-contamination. Therefore, regular training should be provided to these professionals for better preparing special menus.

Also important, to avoid food waste, a daily routine should be defined to check whether or not the student with special dietary needs is at school.

In order to avoid cross-contamination when preparing special menus that have to be free of allergens, the following actions should be taken: store special food separately from others (isolate, on the top); before starting preparation, clean thoroughly kitchen counter, start with special meals preparation; to avoid contamination, it may be necessary to have exclusive seasoning containers and oil bottles; use exclusive tools for each allergen (sponges, dish detergent, food preparation utensils, plastic containers, wood boards, strainers, baby bottles); plastic tools should be exclusive, including blender jar; tools made of other material such as glass and stainless steel could be used for all preparation, but they must be thoroughly washed<sup>1,2,15,16</sup>.

The recipes should be adapted in order to keep special menus as similar as possible to the standard one. Add to special menus cow's milk substitute and other alternative foods (vegetable cream and cocoa powder instead of butter and chocolate milk). Avoid boiling or dilute infant formula<sup>16</sup>.

Also, it is important to provide students a quiet place for their meals, avoiding accidents and swapping food<sup>2,6</sup>. When distribution and consumption happens in the classroom, it may be a good option to offer the special menu to the entire class, decreasing the risk of cross-contamination and encouraging students to socialize.

## 2.8 Beyond the special menu

It is necessary to be aware of some situation that may happen at school and trigger allergic reactions. Some of these situations include facts that are not under control of the school nutritionist in charge but that we all should be careful with.

### ATTENTION!

Teachers should be careful with daily activities that might expose students direct or indirectly (cross-contamination) to food, such as: lab classes, field trips, cooking activities, food counting and classification or food sensory tests, sharing musical instruments (specially blowing instruments), sports contests and other events. Also, teachers should be careful when using recycling materials (such as egg boxes, cardboard, milk boxes, yogurts containers)<sup>2,15,16,18</sup>.

School staff should always consider students with food allergy when planning a school event or a student birthday party. The type of food offered in these events should be suitable for all students, specially for students with special dietary needs. For example, for birthday parties, the person in charge should be reminded about the special dietary need of some students and be encouraged to create a suitable menu. Equally important is to inform in advance the guardians of students with

special dietary needs about celebration menus, so they could tell students what type of food they may eat or not before the event, or guardians can bring some food options for the students with special dietary needs. The students should be encouraged to identify the foods with allergen among the ones offered. Information and willingness are key factors for this process to work out well<sup>1,2,16,17,19</sup>.

Not only food label should be examined, but also labels of school supplies, such as: modeling compound, chalk, crayons, paint, toiletries (such as: bar hand soap, liquid hand soap, shampoo, baby powder, cosmetics) including soap for foam machines and balloons powder for parties, this kind of material may contain milk or wheat<sup>2,15,16,18</sup>.

Cross-contamination may also occur during interaction between students, particularly with those students with anaphylaxis history. Common situations may trigger allergic reaction, such as: holding hands, giving a hug or a kiss and exchanging personal objects (cups or towels). Apart from taking special care of students with food allergy, all the other students should be encouraged to wash thoroughly their hands after handling food or products and make sure everyone uses its personal items, without sharing<sup>2,15,16,18</sup>.

In case of accidental exposure to the allergen, the student can experience from mild symptoms to an anaphylactic reaction. At first, if the student presents mild cutaneous symptoms such as urticaria, it may be enough just to give him/her an anti-allergic. However, if the student is experiencing anaphylaxis, the life-saver drug is adrenaline, which should be intramuscular injected in the thigh and repeated 15 minutes later, in case of no response 2. Guardians and school staff close to the student should know how to identify symptoms and how to promptly proceed. The school and the student's family should agree on a plan in case of emergency.

"The decision of carrying adrenaline (preferably an auto-injector device) will depend upon the risk for anaphylactic reaction or life-threatening prophylaxis, such as individuals with severe asthma (uncontrolled), teenagers, being allergic to peanut or any other tree nut, being allergic to more than one type of food in addition to cow's milk, and being more than 20 minutes away from a hospital"<sup>1</sup>.

"Some individuals with severe food allergy should be guided to wear a bracelet or to carry a card to identify themselves, so that in case of an accident, prompt care can be given to the person"<sup>15</sup>.

## 2.9 Learn more

### 2.9.1 References

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17. **Conhecendo a alergia ao leite de vaca – série creches e escolas.** PINOTTI, R. Disponível em: <[http://www.alergiaaoleitedevaca.com.br/\\_download/folheto\\_aplv\\_escolas.pdf](http://www.alergiaaoleitedevaca.com.br/_download/folheto_aplv_escolas.pdf)>.

18. **Receitas Culinárias para Crianças com Alergia Alimentar.** INSTITUTO GIRASSOL. São Paulo: Instituto Girassol, 2008. Disponível em: <[http://www.girassolstituto.org.br/downloads/receitas\\_culinarias.pdf](http://www.girassolstituto.org.br/downloads/receitas_culinarias.pdf)>.

19. **Campanha Põe no Rótulo,** movimento de mães de crianças com alergia alimentar. Disponível em: <<http://www.poenorotulo.com.br>> e <[www.facebook.com/poenorotulo](http://www.facebook.com/poenorotulo)>.

20. **Alergia à proteína do Leite de Vaca,** site especializado nesta temática: <http://www.alergiaaoleitedevaca.com.br>.

21. **Instituto Girassol,** grupo de apoio aos portadores de necessidades nutricionais especiais. Disponível em: <<http://www.institutogirassol.org.br>>.

22. **Soy allergy fact sheet.** NATIONAL FOOD SERVICE MANAGEMENT INSTITUTE. Folheto em que ratifica que o óleo de soja é potencialmente seguro para quem tem alergia à soja. Disponível em: <<http://www.nfsmi.org/documentlibraryfiles/PDF/20140912035102.pdf>>.

23. **Alergia ao látex: atualização.** BUENO DE SÁ, A.; MALLOZI, M.C.; SOLÉ, D. Rev. bras. alerg. imunopatol. Vol. 33. Nº 5, 2010, 173-183. Disponível em: <[http://www.sbai.org.br/revistas/Vol335/alergia\\_33\\_5.pdf](http://www.sbai.org.br/revistas/Vol335/alergia_33_5.pdf)>.
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26. **Aditivos em alimentos.** AUN, M.V. Rev. bras. alerg. imunopatol. Vol. 34. Nº 5, 2011. 177-186. Disponível em: <[http://www.bjai.org.br/detalhe\\_artigo.asp?id=57](http://www.bjai.org.br/detalhe_artigo.asp?id=57)>.

Appendix B – Communication material example: flyer  
Front


**PNAE series – Special Dietary Needs**

# Food Allergies


<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">What is Food Allergy?</div> <ul style="list-style-type: none"> <li>Food allergy is a reaction of the body's immune system. The smallest contact with the allergen food or product may trigger symptoms from abdominal pain and a rash skin to breathing trouble.</li> <li>The most common allergens are: milk, egg, soy, wheat and peanut.</li> </ul>	<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">Other Products</div> <ul style="list-style-type: none"> <li>At school there might be many products that contain allergen, such as: modeling compound, chalk, balloons and toiletries.</li> <li>Be aware! When not sure about a product, call the manufacturer.</li> </ul>
<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">Food Allergy Treatment</div> <ul style="list-style-type: none"> <li>In case of food allergy, the type of food that causes the allergy should be completely avoided, even in very little amount.</li> <li>In case of babies which are allergic to some type of food, mothers should keep breastfeeding them. In these cases, most probably the mother should also follow the elimination diet.</li> </ul>	<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">Cross-Contamination</div> <ul style="list-style-type: none"> <li>Use different sponges for the preparation of each food allergy meals.</li> <li>Use exclusive utensils for the preparation of each food allergy meals.</li> <li>Use exclusive plastic containers for each type of food allergy preparation, such as the blender jar.</li> <li>Tools made with other materials, such as glass and stainless steel, could be used for all preparation, but they must be thoroughly washed.</li> <li>Store special foods separately from others (isolate, on the top).</li> <li>Before starting preparation, clean thoroughly the kitchen counter. Meals preparation should start with the meals that do not contain allergens.</li> <li>Special and standard menus should be handled separately. When possible, food allergy meals should come first.</li> </ul>
<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">Special menu</div> <ul style="list-style-type: none"> <li>The special menu for students with food allergy must be created without allergens. Thus, some of the ingredients have to be replaced.</li> <li>Some of the recipes might be adapted in order to make all students' menu as much similar as possible.</li> <li>Be careful to avoid accidents and swappings with the food-allergic students' meals.</li> <li>In order to avoid food waste, plan a daily routine to check whether the allergic student is at school.</li> </ul>	<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">Attention to Everyday Activities</div> <ul style="list-style-type: none"> <li>In some severe allergic cases, even common things may trigger allergy reaction: holding hands, a hug or exchange of personal objects (cups or towels).</li> <li>It is important to encourage all students to wash thoroughly their hands after being exposed to products or food containing allergens.</li> </ul>
<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">Processed Foods</div> <ul style="list-style-type: none"> <li>Even small amounts of the allergen may trigger allergy reactions.</li> <li>Therefore, product labels should be verified and do not offer food-allergic students food containing the allergens.</li> </ul>	<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">Events and Birthday Parties</div> <ul style="list-style-type: none"> <li>The student's guardian should receive the event/party menu in advance.</li> <li>Also, the person in charge of the event may get inspired and create a healthy menu that suits every student. The student with food allergy should be respected and should not feel uncomfortable.</li> </ul>
<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">General Orientations</div> <ul style="list-style-type: none"> <li>It is fundamental that the food-allergic students' guardians seek for medical and nutritional assistance.</li> <li>The school along with the student's family should have a plan to follow in an emergency case, specially when the school is far from a hospital. After being exposed to an allergen food or product, if the student has an anaphylactic reaction, the adrenalin injection may save his/her life.</li> </ul>	<div style="background-color: #4F7942; color: white; padding: 2px; text-align: center; font-weight: bold;">Attention with Class Activities</div> <ul style="list-style-type: none"> <li>Some activities might expose the student with food allergy to allergens: lab classes, field trips, cooking activities, music classes (blowing instruments), sports contests, the use of recycling materials (such as food boxes, gloves)</li> </ul>

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**PROGRAMA NACIONAL DE ALIMENTAÇÃO ESCOLAR PNAE**



**FNDE MINISTÉRIO DA EDUCAÇÃO**



**BRASIL GOVERNO FEDERAL**



Back

PNAE series – Special Dietary Needs

## Food Allergies

### Foods and ingredients to avoid:

#### Egg Allergy

- Egg
- Egg white
- Egg yolk
- Albumin
- Conalbumin
- Flavoprotein
- Phosvitin
- Globulin
- Granulo
- Lecithin
- Low-density lipoprotein
- Lipotelinvi
- Lysozyme (E1 105)
- Livetin
- Mayonnaise
- Meringue
- Ovalbumin
- Egg powder
- Ovoglobulin
- Ovomucin
- Ovomucoid
- Ovotransferrin
- Ovovitelin
- Plasma
- Simplesse
- Egg solids
- Vitelin

#### Peanut Allergy

- Peanut
- Hydrolyzed peanut protein
- Artificial or natural nuts (risk of nut trace)
- Vegetable fats (less common in Brazil)
- Peanut oil
- Peanut flour
- Marzipan
- Peanut butter
- Chili

#### Tree Nut Allergies

- Almond
- Pecan
- Vegetable oils (Almond oil)
- Hazelnut
- Pistachio
- Marzipan
- Cashew
- Macadamia
- Brazilian nut
- Walnut
- Pine nut
- Gianduja

#### Latex Allergy (latex-fruit syndrome)

- Avocado
- Pineapple
- Malpighia emarginata (acerola)
- Plum
- Banana
- Potato
- Portuguese chestnut
- Cherimoya
- Apricot
- Spinach
- Fig
- Kiwi
- Lychee
- Papaya
- Cassava
- Mango
- Passion fruit
- Melon
- Peach
- Bell pepper
- Tomato
- Buckwheat
- Grape

#### For more information

Consenso Brasileiro sobre Alergia Alimentar (SBP, ASBAL, 2007). [www.asbai.org.br](http://www.asbai.org.br) Guia prático de diagnóstico e tratamento da APVL mediada pela Imoglobina E. (SBAN 2012) [www.asbai.org.br](http://www.asbai.org.br) Cartilha da alergia alimentar (Põe no Rótulo Proteste 2014). [www.poenorotulo.com.br](http://www.poenorotulo.com.br) Conhecendo a alergia ao leite de vaca: creches e escolas série. [www.alergiaaoleitedevaca.com.br](http://www.alergiaaoleitedevaca.com.br)

#### Cow's Milk Protein Allergy

- Milk
- Powdered milk
- Condensed milk
- Cream
- Butter (butter fat, butter oil, butter esters)
- Casein
- Ammonium caseinate
- Calcium, magnesium
- Potassium or sodium
- Powdered milk drink mix
- Lactic yeast
- Lactalbumin phosphate
- Anhydrous milk fat
- Lactate
- Lactalbumin
- Lactoferrin
- Lactoglobulin
- Lactose, lactulose
- Lactulona
- Buttermilk
- Dairy mix
- Milk protein
- Whey protein
- Lactic protein
- Whey protein
- Food coloring made of the following flavors: vanilla, caramel, coconut, milk, butter, margarine, cheese (may contain traces of. Contact manufacturer)
- Dairy solids
- Milk's traces
- Whey

#### Soy Allergy

- Lecithin
- Soy flour
- Isolated soy protein
- Textured soy protein
- Vegetable oil
- Whey protein
- B-amylase
- Lipoxigenase
- Glycinin
- Conglycinin
- Globulin
- Hemagglutinin
- Isoflavones
- Urease
- Trypsin inhibitor
- Foods made of soy (edamame, tao-cho, natto, taosi, taotjo, tempeh, teryaki, tofu, shoyo, yuba, suf). Soy oil and its derivatives (soy oil is considered protein soy free and therefore potentially safe for soy allergic people. Because soy oil dietary elimination might have a financial and social effect, it is advised to evaluate with the doctor its use).

#### Wheat Allergy

- Wheat bran
- Wheat flour
- Flaked wheat
- Wheat germ
- Wheat seed
- Durum wheat
- Semolina

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## 3 Celiac Diseases

### 3.1 Recommendations summary

- Provide student with medical and nutritional guidance.
- Advise students to renew their medical certificate even if it is a permanent condition.
- Create a gluten free menu (free of wheat, barley, oats, rye, malt).
- In cases of food replacement, ensure the energetic offer includes the most prioritized macronutrients and micronutrients.
- Look periodically on food labels for the indication "Gluten free".
- Define with food handler a systemic procedure in order to avoid cross-contamination.
- Adopt special tools and procedures to avoid cross-contamination.
- Use exclusive tools for the meals preparation and adopt procedures to avoid cross-contamination.
- Take extra care while making breads and cakes as dealing with flour may create airborne flour.
- Inform managers and teacher about possible school supplies that might contain gluten.
- Guide teachers to encourage students to wash frequently their hands as students with celiac diseases may get exposed to allergen by interacting with other students.
- Advise teachers to be cautious during classes activities that require direct or indirect food contact.
- Guide teachers to include a note about students with celiac diseases in the celebrations and events planning, and to inform in advance the students' guardian about the events menu.
- Inform teachers that students with Celiac diseases might need to go more often to the restroom and might need to take medication during classes.

### 3.2 First considerations

Celiac disease is an autoimmune disorder that can occur in genetically predisposed people who are affected by a permanent gluten intolerance, the main protein fraction found in wheat, rye, barley, oats and malt (a barley sub-product). Clinical Protocols and Therapeutic Guidelines can be found at Portaria/SAS/MS # 1.149/2015.<sup>1</sup>

### 3.3 General recommendations

Students with Celiac disease may require other special dietary needs, as lactose intolerance and food allergy, especially when there was a late diagnosis or diet transgression. The need of an ongoing assistance to the student with celiac disease should be emphasized through the health service (at least by a doctor and a nutritionist) to evaluate the student health and nutrition aspect. Thus, even though celiac disease is a permanent condition, the student medical certificate must be recent. Also, the nutritionist from the health care service could prescribe a proper diet and evaluate the student need of supplementation during the student visit.



### 3.4 Special menu

A special menu for a student with Celiac disease has to be completely gluten-free, that is, no wheat, rye, barley, oats or malt. The document 'Clinical Protocols and Therapeutic Guidelines' does not define any alterations in terms of energy needs or macronutrients and micronutrients, therefore the nutritional offer should follow PNAE regulations.

### 3.5 Replacing gluten foods

Common foods that usually replace the primary ingredients based on gluten: wheat, rye, barley, oats and malt, are<sup>3,7</sup>:

- Rice (grain, flour, powdered brown rice)
- Corn (flour, flakes, corn meal, starch, hominy, popcorn)
- Cassava (flour, starch, cassava starch, araruta (*Maranta arundinacea*), tapioca)
- Potato starch
- Millet
- Quinoa
- Amaranth
- Buckwheat
- and mixing them

The other food groups can be normally added to the menu, except when gluten has been added to them. In order to replace some of the ingredients in the preparations, it is necessary to find out some recipes and introduce them to the food handler. Celiac disease institutions and other sources could provide many recipes.

Regarding processed foods, law # 10,674/2003 establishes that all processed food packages must show the words "Contains gluten" or "Gluten-free", according to their ingredients. Therefore, it is recommended to specify "Gluten-free" in the bidding process and to examine product labels.

Food handlers should be careful and also look for the words "Gluten-free" in the product packages, but also, the other staff in charge of food should read periodically product ingredients, to make sure they have not changed.

### 3.6 Preparation and distribution

Elimination diets require accurate procedures from the food handler while choosing Gluten-free food and using exclusive tools in order to avoid cross-contamination<sup>3</sup>. Therefore, regular training should be provided to these professionals for better preparing special menus.

Also important, to avoid food waste, a daily routine should be defined to check whether or not the student with special dietary needs is at school.

In case of students with celiac disease, one risk factor of cross-contamination can be caused by airborne wheat flour. Estimations suggest that airborne wheat flour can stay in the air for as much as 24 hours. Consequently, keeping the schools safe will be challenging for those schools in which facilities are used to make breads and cakes in blenders or mixers. When adapting a recipe that uses this kind of tools, it is necessary to have dedicated tools just for special menus. Foods gluten-free and with gluten should not be prepared together<sup>3</sup>.

In order to avoid cross-contamination when preparing special menus free of gluten, the following actions should be taken: store special food separately from others

(isolate, on the top); before starting preparation, clean thoroughly the kitchen counter, start with special meals preparation; to avoid contamination, it may be necessary to have exclusive seasoning containers and oil bottles, have dedicated baking trays, cake pans, grills, plates; do not use aluminum foil, parchment paper, plastic bags and others; keep an exclusive fabric apron for special menus<sup>3,4,5</sup>. Other tools could be used for all preparations, but they have to be thoroughly washed.

Also, it is important to provide students a quiet place for their meals, avoiding accidents and swapping food. When distribution and consumption happens in the classroom, it may be a good option to offer the special menu to the entire class, decreasing the risk of cross-contamination and encouraging students to socialize.

### 3.7 Beyond the special menu

It is necessary to be aware of some situations that may happen at school and expose Celiac students to gluten, as well as students with food allergy. Some of these situations include facts that are not under control of the school nutritionist but with which we all should be careful.

#### ATTENTION!

Teachers should be careful with daily activities that might expose students direct or indirectly to gluten, such as: lab classes, field trips and cooking classes. In addition, some school supplies might also contain wheat as modeling compound, liquid glue, chalks, paint, balloon powder, face paint and makeups<sup>3,4</sup>.

School staff should consider students with celiac disease when planning a school event or a student birthday party. The type of food offered in these events should be suitable for all students specially for students with special dietary needs. For birthday parties, for example, the person in charge should be reminded about the special dietary need of some students and be encouraged to create a suitable menu. Equally important is informing in advance the guardians of students with special dietary needs about celebration menus so that they can tell students what type of food to eat, or they can provide some food options for the students with special dietary needs. The students should be encouraged to identify foods with allergen among party options. Information and willingness are key factors for this process to work well<sup>3,4</sup>.

Cross-contamination may also occur during interaction between students. Common situations that may expose students with celiac disease are: holding hands, giving a hug or a kiss, and exchanging personal objects (cups or towels). Apart from taking special care of students with celiac disease, all the others students should be encouraged to wash thoroughly their hands after working with food or products, and to make sure everyone uses their personal items, without sharing<sup>2,15,16,18</sup>.

Teachers should be aware that students with celiac disease have specific needs and eventually they may find themselves in some situation in which they need the teacher's support. Commonly, students with celiac disease need to drink more water than others, and they have to go more frequently to the restroom. In some cases, for instance,

teachers and students agree on a code or gesture to let the teacher know they need to drink water or go to the restroom, thus they don't have to feel uncomfortable in front of others. Sometimes the student might need help to take medication or a supplement<sup>4</sup>.

### 3.8 Learn More

#### 3.8.1 Basic reference

1. **Portaria Ministério da Saúde nº 1.149, de 11 de novembro de 2015:** aprova o Protocolo Clínico e Diretrizes Terapêuticas da Doença Celíaca. Disponível em: <<http://u.saude.gov.br/images/pdf/2015/novembro/13/Portaria-SAS-MS---1149-de-11-de-novembro-de-2015.pdf>>.

#### 3.8.2 Related legislation

2. **Lei nº 10.674/2003:** obriga a que os produtos alimentícios comercializados informem sobre a presença de glúten, como medida preventiva e de controle da doença celíaca. BRASIL. Disponível em: <[http://www.planalto.gov.br/ccivil\\_03/leis/2003/110.674.htm](http://www.planalto.gov.br/ccivil_03/leis/2003/110.674.htm)>.

#### 3.8.3 Supporting material

3. **Guia orientador para celíacos.** MORAES et al. Disponível em: <[http://www.fenacelbra.com.br/arquivos/guia/guia\\_orientador\\_para\\_celiacos.pdf](http://www.fenacelbra.com.br/arquivos/guia/guia_orientador_para_celiacos.pdf)>.

4. **Criança celíaca indo à escola:** orientações para pais e cuidadores. PAULA, F.A. Disponível em: <[http://www.fenacelbra.com.br/arquivos/livros\\_download/crianca\\_celiaca\\_indo\\_para\\_escola.pdf](http://www.fenacelbra.com.br/arquivos/livros_download/crianca_celiaca_indo_para_escola.pdf)>.

5. **Boas práticas para evitar a contaminação por glúten.** LOBÃO, N. Disponível em: <[http://www.fenacelbra.com.br/arquivos/livros\\_download/noadia\\_lobao\\_boas\\_praticas.pdf](http://www.fenacelbra.com.br/arquivos/livros_download/noadia_lobao_boas_praticas.pdf)>.

6. **CODEX STAN 118-1981 standard for foods for special dietary use for persons intolerant to gluten.** CODEX ALIMENTARIUS. Standards. Disponível em: <[http://www.codexalimentarius.org/download/standards/291/cxs\\_118e.pdf](http://www.codexalimentarius.org/download/standards/291/cxs_118e.pdf)>.

7. **Federação Nacional das Associações de Celíacos do Brasil.** Disponível em: <<http://www.fenacelbra.com.br>>.

Appendix C – Communication material example: flyer

**PNAE series – Special Dietary Needs**

## Celiac Disease

<p style="text-align: center;"><b>Celiac disease and its treatment</b></p> <ul style="list-style-type: none"> <li>• Celiac disease is an autoimmune disorder that can occur in genetically predisposed individuals who are affected by a permanent intolerance to gluten, which is the main protein fraction found in wheat, rye, barley, oats and malt.</li> <li>• Individuals with celiac diseases should not eat any food containing gluten because it may trigger heavy diarrhea.</li> <li>• It is important that Celiac students and guardians are supported by a doctor and nutritionist.</li> </ul>	<p style="text-align: center;"><b>Cross-Contamination</b></p> <ul style="list-style-type: none"> <li>• Dedicate exclusive sponges for the preparation and to wash tools of special meals.</li> <li>• Use exclusive utensils, boards, containers, pots, grills and baking sheets, as well as devices (oven) to prepare gluten-free meals.</li> <li>• Gluten-free meals should be prepared separately.</li> <li>• When using a blender or mixer to make cakes or breads, airborne flour might stay in the air for 24 hours. Be careful with students that may be affected by airborne flour. Ideally, there should be a restricted area to prepare this type of food.</li> <li>• Dedicate exclusive seasoning containers and oil bottles to the preparation of gluten-free meal.</li> <li>• Do not use aluminum foil, parchment paper or plastic bags.</li> <li>• Use an exclusive fabric apron.</li> <li>• Store special foods labeled and separately from others (isolated, on top).</li> <li>• Before starting preparation, clean thoroughly the kitchen counter.</li> <li>• Special and standard menus should be handled separately. Ideally gluten-free meals should come first.</li> <li>• Pay attention to food accidents and swaps. It is not only about cross-contamination, but about a life-threatening risk.</li> </ul>
<p style="text-align: center;"><b>Special menu</b></p> <ul style="list-style-type: none"> <li>• Celiac students' menu are prepared without foods containing gluten. Thus, some ingredients are replaced by rice, corn, cassava, potato, starch, millet, quinoa, amaranth, buckwheat and its derivatives.</li> <li>• Substitution recipes should be adapted to make all menus as similar to their originals as possible.</li> <li>• In order to avoid waste of food, plan a daily routine to check whether the celiac student is at school or not.</li> </ul>	<p style="text-align: center;"><b>Processed food</b></p> <ul style="list-style-type: none"> <li>• A law establishes that all processed food packages show the words "Contains gluten", according to their ingredients.</li> <li>• Therefore, it is necessary to read all food packages and do not offer to celiac students any products from ingredients whose labels show the words "Contains gluten" in the package.</li> </ul>
<p style="text-align: center;"><b>Be careful with other products</b></p> <ul style="list-style-type: none"> <li>• In school, there might be other products with gluten, such as: modeling compound, glue, chalks, paint, balloon powder, face paint and makeups.</li> <li>• This requires a lot of caution. When in doubt, call the manufacturer's call center service.</li> </ul>	<p style="text-align: center;"><b>Attention to Everyday Activities</b></p> <ul style="list-style-type: none"> <li>• It is important to encourage all students to wash thoroughly their hands after snack time or after being exposed to products containing gluten.</li> <li>• Even common attitudes could expose celiac students to gluten, such as: holding hands, a hug, or exchanging personal objects (cups or towels).</li> <li>• Students with celiac disease have to drink more water and go more frequently to the restroom. In some cases, teachers and students agree on a code or gesture to let the teacher know they need to drink water or go to the restroom; thus they don't have to feel embarrassed in front of others.</li> </ul>
<p style="text-align: center;"><b>Events and birthday parties</b></p> <ul style="list-style-type: none"> <li>• The student's guardian should receive the event/party menu in advance. Also, the person in charge of the event may be encouraged to make gluten-free options to everyone. The celiac student should be respected and not feel embarrassed.</li> </ul>	<p style="text-align: center;"><b>Attention with Class Activities</b></p> <ul style="list-style-type: none"> <li>• Some activities might expose the student with celiac disease directly or indirectly to gluten, such as lab classes, field trips, and cooking activities.</li> </ul>
<p style="text-align: center;"><b>For more information</b></p> <p>Federação Nacional das Associações de Celíacos do Brasília. <a href="http://www.fenacelbra.com.br">http://www.fenacelbra.com.br</a> Guia orientador para celíacos. MORAES et al. <a href="http://www.fenacelbra.com.br/fenacelbra/publicacoes">http://www.fenacelbra.com.br/fenacelbra/publicacoes</a> Criança celíaca indo à escola. PAULA, F.A. <a href="http://www.fenacelbra.com.br/fenacelbra/publicacoes">http://www.fenacelbra.com.br/fenacelbra/publicacoes</a> Boas práticas para evitar a contaminação por glúten. LOBAO, N. <a href="http://www.fenacelbra.com.br/fenacelbra/publicacoes">http://www.fenacelbra.com.br/fenacelbra/publicacoes</a></p>	



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## 4 Diabetes

### 4.1 Recommendations summary

- Provide student with medical and nutritional guidance.
- Provide referral and counter-referral to the health care system in order to monitor student.
- Adjust macronutrients and dietary fiber proportion.
- Limit the total amount of sucrose to 10% of the energy value.
- Use artificial sweeteners only when necessary.
- Reduce saturated fatty acid to 7% of the menu's energy value.
- Replace saturated fatty acid by a polyunsaturated or monounsaturated one.
- Limit daily cholesterol consumption to 200mg/day.
- Reduce trans fat consumption and when possible, offer a menu without it.
- Be attentive to meal apportion and offer a special menu suitable to the practice of exercise.
- Advise school staff to limit repetition of meals and the amount of food per meal, according to students age.
- Adopt FNDE regulations for the other criteria.
- Suggest to school directors and teachers to organize school activities that promote healthy food and lifestyle to students.
- Recommend the implementation of a vegetable garden, in which herbs could be cultivated to supply preparations of school meals, and be used as resources for learning activities.

### 4.2 Initial considerations

This section assembles recommendations about diabetes mellitus (DM), a heterogeneous group of metabolic disorders that results in hyperglycemia due to the malfunction in the action or secretion of insulin. This section is based on the following guidelines: Diretrizes da Sociedade Brasileira de Diabetes 2015-2016<sup>1</sup> (Brazilian Society Diabetes Guidelines 2015-2016), Caderno de Atenção Básica 362 (Reference Guide of Main principles), and is also based on the non-governmental support guide for people with diabetes: Nosso aluno diabético<sup>3</sup> (Our student with diabetes) e Diabetes na escola<sup>4</sup> (Diabetes in the school).

Because of frequent connections and high risk factors that are common to chronic non-communicable diseases, it is recommended that the instructions in this section be combined with the ones in the next section, in which dyslipidemia and systemic hypertension are considered.

### 4.3 Special menu

#### 4.3.1 Nutritional references

PNAE nutritional references have been revised for the preparation of special meals for students with DM in order to adapt the quantity of meals and the amount of macronutrients and dietary fiber.

**Energy:** PNAE nutritional references remained the same.

**Proportion between macronutrients and dietary fiber:** the nutritional values have been adjusted to follow the document entitled 'Diretrizes da Sociedade Brasileira de Diabetes 2014-2015<sup>1</sup> (The Guidelines of the Brazilian Society of Diabetes 2014-

2015)'. Macronutrients have been redistributed from 65% to 55 % of carbohydrates, from 12.5% to 17.7% of proteins (only for students 15 years old and younger), from 22.5% to 32.5% of lipids (for students 15 years old and younger) and 27.5% for students 16 years old and older. Additionally, for the proportion of dietary fiber, it has been adopted 14g/ 1,000 kcal<sup>1</sup>.

Reference values for energy intake and macronutrients for students with diabetes

20% of the special dietary needs*						
Category	Age	Energy (Kcal)	Carbohydrates (g)	Proteins (g)	Lipids (g)	Fiber (g)
Preschool	7 – 11 months	1 35	1 8,6	5,9	4,1	-
	1 – 3 years	200	27,5	8 ,8	6 ,1	0 ,6
Kindergarten	4 – 5 years	2 70	3 7,1	1 1,8	8 ,3	0 ,8
Elementary school	6 – 10 years	300	41,3	1 3,1	9 ,2	0 ,8
	11 – 15 years	4 35	5 9,8	19,0	13,3	1,2
Secondary school	16 – 18 years	5 00	6 8,8	21,9	1 5,3	1,4
Young and Adult Education	19 – 30 years	4 50	6 1,9	1 9,7	13,8	1,3
	31 – 60 years	4 35	5 9,8	19,0	13,3	1,2

30% of the special dietary needs*						
Category	Age	Energy (Kcal)	Carbohydrates (g)	Proteins (g)	Lipids (g)	Fiber (g)
Preschool	7 – 11 months	200	27,5	8,8	6,1	-
	1 – 3 years	300	41,3	13,1	9,2	1,3
Kindergarten	4 – 5 years	400	55,0	17,5	12,2	1,7
Elementary school	6 – 10 years	450	6 1,9	19,7	13,8	1,9
	11 – 15 years	6 50	6 89,4	28,4	19,9	2,7
Secondary school	6 – 18 years	750	103,1	32,8	22,9	3,2
Young and Adult Education	19 – 30 years	6 80	6 93,5	29,8	20,8	2,9
	31 – 60 years	6 50	6 89,4	28,4	19,9	2,7

70% of the special dietary needs*						
Category	Age	Energy (Kcal)	Carbohydrates (g)	Proteins (g)	Lipids (g)	Fiber (g)
Preschool	7 – 11 months	450	61,9	19,7	13,8	-
	1 – 3 years	700	96,3	0,6	21,4	6,9
Kindergarten	4 – 5 years	950	30,6	41,6	29,0	9,3
Elementary school	6 – 10 years	1000	37,5	43,8	0,6	9,8
	11 – 15 years	1500	206,3	65,6	45,8	14,7
Secondary school	6 – 18 years	1700	33,8	74,4	51,9	16,7
Young and Adult Education	19 – 30 years	1600	220,0	70,0	48,9	15,7
	31 – 60 years	1500	206,3	65,6	45,8	14,7

\*Source: Nutritional references from CD/FNDE # 26/2013 resolution include macronutrients redistributed to 55% of carbohydrates, 17.5% proteins for students 15 years old and younger, and 32.5 % of lipids for students 15 years old and younger, and 27.5 % of lipids for students 16 years old and above. Dietary fiber has been adjusted to 14g/ 1000 kcal, according to the document 'Diretrizes da Sociedade Brasileira de Diabetes 2014-2015' (the Guideline of the Brazilian Society of Diabetes 2014-2015'.

#### 4.3.2 Recommendations

**Carbohydrates:** limit total intake of sucrose to 10% of the energy value. Although sweeteners could be used when necessary, they should not be considered something essential since there is a limit of sucrose consumption. Carbohydrates intake should not have any restrictions for children because such limitation could be harmful for their growth and for the development of their cerebral functions<sup>1</sup>.

Since there will be students making use of insulin, the recommendation is to standardize the quantity of carbohydrates intake in grams. Even when the student's guardian will have a copy of the menu, it would be more useful for them to know that everyday meals contain around 30g of carbohydrates, given that most of the treatments include the insulin dosage as one unit of insulin to every 15g of carbohydrate<sup>1</sup>.

**Lipids:** it is advised to: reduce the saturated fatty acid to 7% of the total energy value; offer polyunsaturated fatty acid to a limit of 10% of the total energy; ensure 0.15g daily intake of omega-3 polyunsaturated fatty acid whose sources include sardines, flaxseed and nuts; limit cholesterol intake to an average of 200mg/day (40mg/day, 60mg/day and 140mg/day which consist respectively 20%, 30% e 70% of the special dietary needs); when possible, menus should be free of trans fat<sup>1</sup>.

**Proteins:** follow the new reference specification that has been adopted.

**Meal quantities:** since there is a recommendation to divide the meals into 6 to avoid fasting longer than three hours, it is important to be attentive to the quantity of meals served. Students who attend half-day school, who receive one single meal corresponding to 20% of the dietary needs, might spend a lot of time commuting from home to school and back home. In this case, it might be necessary to provide them a snack in the beginning or end of school activities.



**Other criteria:** the documents presented either follow FNDE recommendations or do not make references to FNDE recommendations. However, it is advised to follow the programme regulations.

Advise school staff to limit meal repetition of students and advise them concerning the amount of food each meal should contain, according to student age.

#### 4.4 Beyond the special menu

Lifestyle has a great effect on individuals with DM. Healthy habits account for protective factors. Schools are fundamentally important to promote healthy lifestyle and healthy eating habits. Thus, students with DM should be encouraged to participate in physical activities, both during physical education classes and after-school activities, such as 'Programa Mais Educação' (More Education Programme) and 'Escola Aberta' (Open School Programme). Parents and guardians should get together with the school in order to encourage students to join these activities. Although these activities are different from the special feeding assistance, nutritionists should get involved too.

#### STAY INFORMED

School should be guided about hypo- and hyperglycemia. It is important to have available foods that contain simple sugar to help in case of hypoglycemia. Teachers should not let the student by himself, and remain vigilant about student's behavior. If necessary, ask students to monitor her glucose level as soon as possible.



**HYPERGLYCEMIA**

Hyperglycemia (blood glucose level higher or equal to 180ml/dl) could happen in the following cases: students who are still learning to monitor their glucose level (in the initial stage of a treatment or because of an unbalanced DM), a student who ate too much carbohydrates or who gave himself not enough insulin, or even a student who is facing stress or an illness.

Symptoms include: increased thirst, frequent and abundant urination, fatigue, nausea and blurred vision.

How to treat: the school should have a medical form available in which the student's guardian can specify how to proceed in this case. In general, the recommendation is to let the student drink plenty of water, provide the student a safe and calm place where he can give himself insulin to manage the hyperglycemia (according to medical prescription), allow the student monitor glucose level as necessary and remake tests every two hours.

**HIPOGLYCEMIA**

Hypoglycemia (blood glucose level lower or equal to 70ml/dl) could happen when the student does not eat enough carbohydrates, has done too much exercise, or has given himself too much insulin at a wrong time.

Symptoms include: fatigue, hunger, uneasiness, irritation, pallor, sleepiness, tachycardia, and in some cases it can lead to faint and convulsion.

How to treat: the school should have a medical form available in which the student's guardian specifies how to proceed in such case. Usually, it is possible to recover quickly from hypoglycemia by taking sugar sources of fast absorption, as follows (15g of fast absorption carbohydrates):

- 1 tablespoon of sugar diluted in a glass of water;
- 3 honey sachets or 1 tablespoon of honey; a small juice box of processed juice;
- 4 fruit candies that can be easily chewed;
- 1 sachet of glucose or 5 tablets of glucose

Foods that are rich in fat or protein, such as chocolate or condensed milk, should be avoided as means of reverting hypoglycemia because their fat and protein may slow down the glucose absorption. Ask the student to monitor his glucose level 15 minutes after eating and repeat it if hypoglycemia persists.

In both cases, the school should inform the student's parents or guardians. If the student gets unconscious or in case of convulsion, call immediate medical assistance.

Students have to be feeling well in order to practice exercises. Exercises should be avoided after experiencing hypoglycemia, during peak of insulin action, and/or during a time of fasting. Student's guardians should inform the school when the student might need an extra snack, when to monitor glucose level and when to adapt insulin dosage for the practice of exercises or any other physical activity, according to medical recommendation.

The following actions may also help:

- Have a snack before practicing exercises.
- Drink plenty of water to hydrate the body.
- Keep in the backpack some source of quick-acting sugar.
- Avoid practicing exercises after experiencing hypoglycemia.

School staff should consider students with DM while planning a school event or a student birthday party. The type of food offered in these events should be suitable for all students, specially for students with special dietary needs. For example, for birthday parties, the person in charge should be reminded about the special dietary need of some students and be encouraged to create a suitable menu. Equally important is to inform in advance the guardians of students with special dietary needs about celebration menus so the guardians could tell students what type of food they may eat or not before the event, or guardians can bring some food options for the students with special dietary needs. The students should be encouraged to identify the foods with allergen among the ones offered. Information and willingness are key factors for this process to work well.

Some types of insulin have to be kept in the refrigerator<sup>1,3</sup>. Usually, insulin which is in use can be kept out of the refrigerator, but the packages that have not been opened have to be in the refrigerator. When the insulin in use is kept in the refrigerator, it will require care as follows: avoid contamination, keep it identified (labeled with student's name), do not freeze or keep it close to ice, keep it in a styrofoam container or another insulated container when taking insulin out of the refrigerator, and keep it out of refrigeration for as short as possible.

The school should have a medical form for students with DM, in which there will be details about the student's health and disease, as well as which procedures should be taken when necessary, including emergency situations for which authorization is given to proceed with medical care. For students with DM there is a specific medical form model available on the page 'Diabetes na Escola' (Diabetes at School).

All of these procedures should be taken into account while planning different learning activities, especially physical activities and field trips.

#### 4.5 Learn more

1. **Diretrizes da Sociedade Brasileira de Diabetes 2015-2016**. Sociedade Brasileira de Diabetes. São Paulo: AC Farmacêutica, 2016. Disponível em: <<http://www.diabetes.org.br/diretrizes-e-posicionamentos>>.

2. **Estratégias para o cuidado da pessoa com doença crônica – diabetes mellitus**. BRASIL. Ministério da Saúde. Brasília: Ministério da Saúde, 2013. (Cadernos de Atenção Básica, n. 36). Disponível em: <[http://189.28.128.100/dab/docs/portaldab/publicacoes/caderno\\_36.pdf](http://189.28.128.100/dab/docs/portaldab/publicacoes/caderno_36.pdf)>.

3. **Nosso aluno com diabetes**. ONG ADJ Diabetes Brasil. Publicações. Disponível em: <<http://www.adj.org.br/>>.

4. **Diabetes na escola**. ONG Pró-Crianças e Jovens Diabéticos. Seus direitos. Disponível em: <<http://ongprodiabeticosaceite.lecom.com.br/>>.

5. **Resolução CD/FNDE nº 26/2013**: Dispõe sobre o atendimento da alimentação escolar aos alunos da educação básica no âmbito do Programa Nacional de Alimentação Escolar – PNAE. Disponível em: <<http://www.fnde.gov.br/programas/alimentacao-escolar/alimentacao-escolar-legislacao>>.

## Appendix D – Communication material example: flyer

PNAE series – Special Dietary Needs

**Diabetes Millitus****What is diabetes?**

Diabetes Mellitus is a heterogenic group of metabolic disorders (metabolism disorder) which results in hyperglycemia due to a malfunction in the action and/or in the secretion of insulin. High cholesterol, high blood pressure, overweight and obesity are some other examples of chronic non-communicable diseases, which may also affect individuals with diabetes.

**Insulin**

Some types of insulin have to be kept in the refrigerator. If necessary, the school should proceed as follows to avoid contamination: keep the insulin identified (labeled with student's name), do not freeze or keep it next to ice, keep it in a styrofoam container or some kind of insulating container when taking it out or when defrosting and cleaning the refrigerator, and if take the insulin out for as short as possible.

**Special menu**

- Limit sugar and increase dietary fiber.
- Examine carefully the special menu prescribed.
- Avoid long periods of fasting.
- Pay close attention to meals distribution in order to avoid swaps and to limit students to eat just once.

**Physical Activities**

- Most students with DM can and should participate in physical activities.
- Schools are fundamentally important to promote healthy lifestyle and eating habits. Thus, students with DM should be encouraged to participate in physical activities, both during physical education classes and after school optional activities.
- Avoid exercises after experiencing hypoglycemia, as well as, during peak of insulin action and/or during periods of fasting.
- Student's guardians should inform school about the times when the student needs an extra snack, when to monitor glucose level, and when to adapt insulin dosage.

**School learning activities and events**

- Some activities may put the students with DM in risk. Be attentive with culinary activities, lab classes, field trips and physical activities.
- Student's guardian should be informed in advance about the menu for events. For example, foods that contain sugar should be identified. The students should be respected and should not feel embarrassed.

**Hyperglycemia**

Hyperglycemia (blood glucose level higher or equal to 180ml/dl) could happen in students who are still learning to monitor their glucose level (in the initial stage of a treatment or because of an unbalanced DM), in a student who ate too much carbohydrates, a student who gave himself not enough insulin, or even in a student who is facing stress or an illness. Symptoms include: increased thirst, frequent and abundant urination, fatigue, nausea and blurred vision.

How to treat: the school should have a medical form available in which the student's guardian can specify how to proceed in this case. In general, the recommendation is to let the student drink plenty of water, to provide the student a safe and calm place where he can give himself insulin to manage the hyperglycemia (according to medical prescription), and to allow the student monitor glucose level as necessary and remake tests every two hours.

**Hipoglycemia**

Hipoglycemia (blood glucose level lower or equal to 70ml/dl) could happen when the student does not eat enough carbohydrates, has done too much exercises, or has given himself too much insulin at a wrong time.

Symptoms include: fatigue, hunger, uneasiness, irritation, pallor, sleepiness, tachycardia and in some cases it can lead to faint and convulsion.

How to treat: the school should have a medical form available in which the student's guardian specifies how to proceed in this case. Usually, it is possible to recover quickly from hypoglycemia by taking sugar sources of fast absorption as follows (15g of fast absorption carbohydrates):

- 1 tablespoon of sugar diluted in a glass of water;
- 3 honey sachets or 1 tablespoon of honey; a small juice box of processed juice;
- 4 fruit candies that can be easily chewed;
- 1 sachet of glucose or 5 tablets of glucose

Foods rich in fat or protein such as chocolate or condensed milk should be avoided as means of reverting hypoglycemia because fat and protein may slow down the glucose absorption. Ask student to monitor his glucose level 15 minutes after taking food and repeat it if hypoglycemia persists.

In any of this situations, the school should inform the student's parents or guardians. If the student gets unconscious or in case of convulsion, call immediate medical assistance.

**For more information**

Diretrizes da Sociedade Brasileira de Diabetes 2015-2016. <<http://www.diabetes.org.br/diretrizes-e-posicionamentos>  
Estratégias para o cuidado da pessoa com doença crônica – diabetes mellitus. [http://189.28.128.100/dab/docs/portaldab/publicacoes/cademo\\_36.pdf](http://189.28.128.100/dab/docs/portaldab/publicacoes/cademo_36.pdf)  
Nosso aluno com diabetes. <http://www.adj.org.br/> - Diabetes na escola. <http://ongprodiabeticosaceite.lecom.com.br/>>.

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The general recommendation above does not replace prescriptions from doctor, nutritionists or any other health care provider.



## 5 Dyslipidemia and Systemic Hypertension

### 5.1 Recommendations summary

Adopt the following orientations to assist the student with dyslipidemia and systemic hypertension, when the medical prescription does not say anything different than that:

- Provide referral or counter-referral to the health care service in order to monitor the student.
- Reduce saturated fatty acid to 7% of the menu's energy value.
- Replace saturated fatty acid by polyunsaturated or monounsaturated.
- Offer omega-3 polyunsaturated fatty acid of vegetable and seafood sources.
- Limit cholesterol intake to 60mg/1,000 kcal.
- Reduce trans fat consumption; when possible, offer a menu without it.
- Limit the offer to 1,500 mg/day, encouraging the use of natural seasoning.
- Adopt FNDE guidelines for the other criteria.
- Pay close attention to the distribution of meals in order to avoid swaps and to limit students to eat just once.
- Suggest to school directors and teachers to promote school activities that bring out healthy food and lifestyle for all students.
- Recommend the implementation of a vegetable garden, in which herbs can be cultivated to supply preparations of the school meals, and to be used as resources for learning activities.

### 5.2 Initial considerations

Chronic non-communicable diseases (NCD) are among the main causes of death in Brazil and worldwide, with both social and economical impacts. The challenges to confront NCD include the fact that they are often linked to lifestyle, once the main causes are related to an unhealthy diet, the lack of exercises, smoke and alcohol use<sup>1,2</sup>.

This section of the Guide combines NCD dyslipidemia and systemic hypertension with a set of common nutritional recommendations that have been defined. In this section, we will present facts about different dyslipidemia types, as well as recommendations to schools regarding student assistance.

### 5.3 Dyslipidemia

Three national references about dyslipidemia have been adopted: V Diretriz Brasileira de Dislipidemias e Prevenção da Aterosclerose (2013) (Fifth Brazilian Guideline of Dyslipidemia and Atherosclerosis prevention); I Diretriz sobre o consumo de Gorduras e Saúde Cardiovascular (2013) (First Guideline about fat intake and Cardiovascular Health); and I Diretriz Brasileira de Hipercolesterolemia Familiar (HF) (2012) (First Brazilian Guideline of Familiar Hypercholesterolemia).

The Fifth Brazilian Guideline of Dyslipidemia and Atherosclerosis prevention is the national guide that addresses the different types of dyslipidemia, the lipid metabolism and diagnoses of special conditions. In the chapter about non-medication treatment, according to each case, the following lifestyle changes are recommended: weight reduction, physical activities, smoking cessation and changing food habits. Concerning the change of food habits, the guide presents a chart with food recommendations to reduce hypercholesterolemia, and also three other charts that provide the degree of evidence on intervention on hypercholesterolemia, triglyceridemia and cholesterol levels – high density lipoprotein (HDL-C).

The First Brazilian Guideline about fat intake and Cardiovascular Health analyzes the available evidence on the impact of the different types of Arteriosclerosis, the inflammatory process of the arteries walls which are the main causes of cardiovascular damages. Additionally, this guideline confirms and adds recommendations on the previous guideline (V Brazilian Guideline of Dyslipidemia and Atherosclerosis prevention), being, therefore, an important source of research.

The First Brazilian Guideline of familiar Hypercholesterolemia addresses a specific type of dyslipidemia, the hereditary Hypercholesterolemia. The nutritional recommendations for dyslipidemia combine these three guidelines.

#### 5.4 Systemic Hypertension

The primary national references about systemic hypertension used for this guide were: VI Diretrizes Brasileiras de Hipertensão (2010)<sup>8</sup> (VI Brazilian Guideline of Hypertension) and Caderno de Atenção Básica # 37 Estratégias para o cuidado da pessoa com doença crônica – hipertensão arterial sistêmica (CAB 37) (2013)<sup>9</sup> (Reference Guide for basic care number 37 – Strategies to treat individuals with chronic diseases – systemic hypertension).

In the fifth chapter of Diretrizes Brasileiras de Hipertensão (Brazilian Guideline of Hypertension), the following lifestyle changes are recommended for non-medication treatment: weight reduction, regular physical activities, smoking cessation, food habits change and salt reduction (it does not specifies the mandatory intake amount).

This guideline does not define nutritional criteria and prefers to adopt dietary methodologies such as the 'dietary approaches to stop hypertension' (DASH) and the mediterranean diet, through different levels and types of evidence. Both methodologies are aligned with the recommendations for dyslipidemia regarding reduction of saturated fat food sources and cholesterol, and with the increase in consumption of fresh foods, particularly whole grains and vegetables.

CAB 37 (Reference Guide for basic care number 37 – Strategies to treat individuals with chronic diseases – systemic hypertension) approaches the arrangements of the basic treatment of individuals with systemic hypertension. In the chapter dedicated to nutritional recommendations, not only the weight loss approach has been recommended, but also the following nutritional directions are listed: adopting a healthy dietary lifestyle, reducing excessive energy intake, restricting salt and sodium intake, ensuring a diet rich of fiber, encouraging a diet rich in potassium, calcium and magnesium. This guide provides 10 steps for a healthy diet for individuals with systemic hypertension and recommends a daily limit intake of sodium of 2,000 mg<sup>9</sup>. We emphasize that PNAE adopts the same limit of sodium in feeding students<sup>3</sup>, which is adjusted according to the number of meals served per person (400mg/1 per person/1 meal; 600mg per person/2 meals; and 1400mg per person/3 or more)<sup>3</sup>. The guidelines also highlight the importance of potassium, calcium and magnesium intake without taking supplements. In spite of that, the CAB 37 document underlines the importance of supplements.

#### 5.5 General recommendations

Dyslipidemia and Systemic Hypertension are both chronic conditions that require permanent treatment and medical care. The majority of PNAE students is composed by children and teenagers, and when they are affected by these conditions, there are specific aspects related to them. Therefore, when receiving a medical certificate

with these conditions, it is advised to follow the counter-referral logic, according to the guidance provided on the implementation section of this guide. The 'Cadernos de Atenção Básica # 35, 37 e 38' (Basic Care Guides # 35, 37 and 38) from the Health Ministry approaches the comprehensive care of individuals with chronic, non-communicable diseases from the Unified Health System (SUS), where health care providers in the Basic Care Department should take care of the patients nutrition<sup>1,9,13</sup>.

### 5.6 Cardápio especial

The following recommendations can be completely adopted as a common protocol for students with both dyslipidemia and systemic hypertension. According to the nutritionist in charge, the recommendations can be partially adopted too. Specific protocols can be created for each condition and for different combinations of these conditions.

**Energy:** dyslipidemia and systemic hypertension guidelines advise for reducing weight or weight control, or for lowering the amount of energy intake due to their relation with the respective diseases<sup>5,8,9</sup>. The overweight guidelines recommend to set up goals and to have individual medical supervision<sup>12,13</sup>. FNDE recommendation to the IBs is to keep the 'per capita' reference of the programme, which has been defined based on the nutritional needs of students, according to their age. Consequently, the menus planned according to PNAE regulations are already adjusted to the weight average of each age. As stated in this reference guide, student's guardians should receive a copy of the special menu, so they can provide it as a counter-referral to the health care provider, who can make an individual plan for each student based on the school menu. If the health care provider considers any adjustment to the school menu necessary in terms of energy intake, they can prescribe it.

**Lipids:** it is recommended the reduction of saturated fatty acid to 7% of the total energy<sup>5,6,8</sup>, replacing saturated fatty acid by polyunsaturated and monosaturated<sup>5,6,8</sup>, offering omega-3 polyunsaturated fatty acid of vegetable and seafood sources (such as sardines, flaxseed and nuts), limiting cholesterol intake to 60mg/1.000 kcal, and reducing trans fat (when possible creating menus without it).

**Salt and sodium:** limit consumption to 1.500 mg/day<sup>12</sup>, replace salt by natural seasoning such as saffron, rosemary, garlic, cinnamon, onion, coriander, clove, dill, bay leaves, ginger, mint, basil, marjoram, oregano, chili pepper, peppers, parsley, sage, bouquet garni<sup>9</sup>.

**Potassium, magnesium and calcium:** there is no need to take supplements for the acquisition of these micronutrients, but they have to be provided in the student meals (their food sources will be described in the following chart).

**Foods rich in potassium:** banana, melon, orange; dry fruits; avocado; carrots, beetroot, tomato; potato; dark green leafy vegetables: kale, spinach; chestnut, walnut, almond; peas, beans, soy, chickpeas; sesame seed, cereal germ.  
Note that: foods lose potassium when cooked.

**Foods rich in magnesium:** avocado, banana, fig, beetroot leaf; peas, bean, soy; cassava; okra, spinach, kale; oat bran; rice bran; rye flour; cereal germ, whole wheat bread; nut and seeds (sunflower, sesame, flaxseed) non-roasted seeds.<sup>9</sup>



**Other aspects:** the documents presented either follow the current FNDE recommendations or they do not make references to FNDE recommendations. Nevertheless, the recommendation is to follow the programme regulations.

Advise school staff to limit students to one meal only and about the amount of food per meal according to students age.

### 5.7 Beyond the special menu

Chronic non-communicable diseases (NCDs) have a strong relation with lifestyle. Healthy habits account for protective factors. In contrast, an unhealthy diet, lack of exercises, excessive use of alcohol and smoking are likely to cause these diseases<sup>5,8,9,12,13</sup>. Hence, the importance of school in promoting healthy lifestyle and healthy eating habits.<sup>1,3,8</sup>

It is important to suggest to school managers and teachers to develop learning activities that approach healthy lifestyle and healthy eating habits during classes and extra classes activities, including schools that are part of 'Programa Mais Educação' (More Education Programme) and 'Escola Aberta' (Open School Programme). These activities should focus on the document 'Guia Alimentar para a População Brasileira'<sup>4</sup> (Feeding guide for the Brazilian Population). By all means, students with NCDs should be encouraged to participate in physical activities, both during physical education classes and after school programmes.

Additionally, it is advisable the implementation of a vegetable garden in which herbs could be cultivated to supply the preparations of the school meals, and to be used as resources for learning activities.

### 5.8 Learn more

#### 5.8.1 General topics

1. **Plano de ações estratégicas para o enfrentamento das doenças crônicas não transmissíveis (DCNT) no Brasil 2011-2022.** BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Análise de Situação de Saúde. Brasília: Ministério da Saúde, 2011. Disponível em: <[http://bvsms.saude.gov.br/bvs/publicacoes/plano\\_acoes\\_enfrent\\_dcnt\\_2011.pdf](http://bvsms.saude.gov.br/bvs/publicacoes/plano_acoes_enfrent_dcnt_2011.pdf)>.

2. **Estratégia para o cuidado da pessoa com doença crônica.** BRASIL. Ministério da Saúde. Brasília: Ministério da Saúde, 2014. (Cadernos de Atenção Básica, n. 35). Disponível em: <<http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/cab35>>.

3. **Resolução CD/FNDE nº 26/2013:** Dispõe sobre o atendimento da alimentação escolar aos alunos da educação básica no âmbito do Programa Nacional de Alimentação Escolar – PNAE. Disponível em: <<http://www.fnde.gov.br/programas/alimentacao-escolar/alimentacao-escolar-legislacao>>.

4. **Guia alimentar para a população brasileira.** BRASIL. Ministério da Saúde. 2. ed. Brasília: Ministério da Saúde, 2014. Disponível em: <[http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/guia\\_alimentar2014](http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/guia_alimentar2014)>.

#### 5.8.2 Dyslipidemia

5. V **Diretriz Brasileira de Dislipidemias e Prevenção da Aterosclerose.** SOCIEDADE

BRASILEIRA DE CARDIOLOGIA. Arq. Bras. Cardiol. v. 101, n. 4, supl. 1: 1-22, 2013. Disponível em: <[http://publicacoes.cardiol.br/consenso/2013/V\\_Diretriz\\_Brasileira\\_de\\_Dislipidemias.pdf](http://publicacoes.cardiol.br/consenso/2013/V_Diretriz_Brasileira_de_Dislipidemias.pdf)>.

6. **I Diretriz sobre o consumo de Gorduras e Saúde Cardiovascular.** SOCIEDADE BRASILEIRA DE CARDIOLOGIA. Arq. Bras. Cardiol. v. 100, n. 1, supl. 3: 1-40, 2013. Disponível em: <[http://publicacoes.cardiol.br/consenso/2013/Diretriz\\_Gorduras.pdf](http://publicacoes.cardiol.br/consenso/2013/Diretriz_Gorduras.pdf)>.

7. **I Diretriz Brasileira de Hipercolesterolemia Familiar (HF).** SOCIEDADE BRASILEIRA DE CARDIOLOGIA. Arq. Bras. Cardiol. v. 99, supl. 2: 1-28, 2012. Disponível em: <[http://publicacoes.cardiol.br/consenso/2012/Diretriz%20Hipercolesterolemia%20Familiar\\_publicacao\\_oficial\\_eletronica.pdf](http://publicacoes.cardiol.br/consenso/2012/Diretriz%20Hipercolesterolemia%20Familiar_publicacao_oficial_eletronica.pdf)>.

### 5.8.3 Systemic Hypertension

8. **VI Diretrizes Brasileiras de Hipertensão.** SOCIEDADE BRASILEIRA DE CARDIOLOGIA; SOCIEDADE BRASILEIRA DE HIPERTENSÃO; SOCIEDADE BRASILEIRA DE NEFROLOGIA. Arq. Bras. Cardiol. v. 95, n. 1 supl. 1: 1-51. 2010. Disponível em: <[http://publicacoes.cardiol.br/consenso/2010/Diretriz\\_hipertensao\\_associados.pdf](http://publicacoes.cardiol.br/consenso/2010/Diretriz_hipertensao_associados.pdf)>.

9. **Estratégias para o cuidado da pessoa com doença crônica – hipertensão arterial sistêmica.** BRASIL. Ministério da Saúde. Brasília: Ministério da Saúde, 2013. (Cadernos de Atenção Básica, n. 37). Disponível em: <<http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/cab37>>.

10. **Sodium Intake in Populations: Assessment of Evidence.** INSTITUTE OF MEDICINE. Food and Nutrition Board. 2013. Disponível em: <<http://www.nap.edu/catalog/18311/sodium-intake-in-populations-assessment-of-evidence>>.

11. **Dietary reference intakes for water, potassium, sodium, chloride, and sulfate.** INSTITUTE OF MEDICINE. Food and Nutrition Board. 2005. Disponível em: <<http://www.nap.edu/catalog/10925/dietary-reference-intakes-for-water-potassium-sodium-chloride-and-sulfate>>.

### 5.8.4 Overweight and Obesity

12. **Obesidade na infância e adolescência – Manual de Orientação. Sociedade Brasileira de Pediatria.** Departamento Científico de Nutrologia. 2. ed. São Paulo: SBP. 2012. Disponível em: <[http://www.sbp.com.br/pdfs/14297c1-Man\\_Nutrologia\\_COMPLETO.pdf](http://www.sbp.com.br/pdfs/14297c1-Man_Nutrologia_COMPLETO.pdf)>.

13. **Estratégias para o cuidado da pessoa com doença crônica – obesidade.** BRASIL. Ministério da Saúde. Brasília: Ministério da Saúde, 2013. (Cadernos de Atenção Básica, n. 38). Disponível em: <<http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/cab38>>.

14. **Estratégia Intersetorial de Prevenção e Controle da Obesidade: recomendações para estados e municípios.** Câmara Interministerial de Segurança Alimentar e Nutricional. Brasília, DF: CAISAN, 2014. Disponível em: <<http://www.mds.gov.br/segurancaalimentar/educacao-alimentar-e-nutricional/estrategia-intersetorial-de-prevencao-e-controle-da-obesidade>>.



15. **Portaria Ministério da Saúde nº 424/2013:** redefine as diretrizes para a organização da prevenção e do tratamento do sobrepeso e obesidade como linha de cuidado prioritária da Rede de Atenção à Saúde das Pessoas com Doenças Crônicas. Disponível em: <[http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0424\\_19\\_03\\_2013.html](http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0424_19_03_2013.html)>.

Appendix E – Communication material example: flyer  
Front

PNAE series – Special Dietary Needs

## Dyslipidemia and Hygh Blood Pressure

Chronic non-communicable diseases

Dyslipidemia and systemic hypertension, as well as, diabetes and hygh blood pressure are classified as chronic non-communicable diseases (NCDs). Usually, they start silently, tend to be of long duration, many causes are associated to them, and they are non-communicable diseases.

- NCDs are the leading cause of death in Brazil and worldwide. Diabetes, cancer and other diseases are also considered NCDs.

Risk factors

- Unhealthy lifestyle increases the chances of an individual to develop NCDs, for example: unhealthy diet, smoking, excessive use of alcohol.

- Therefore, it is fundamental that guardians of students with NCDs to work with a doctor and a nutritionist for individual supervision.

```

graph TD
    NCDs[NCDs] --- Hypertension[Hypertension]
    NCDs --- Dyslipidemia[Dyslipidemia]
    NCDs --- Obesity[Obesity]
    NCDs --- Overweight[Overweight]
    
```

Chronic non-communicable diseases

- Avoid refined foods and prefer whole grain foods.
- Reduce animal fat intake such as: butter, lard, fat cheeses, whole milk, beef fat and chicken skin. Replace them for healthy fats such as: olive oil, soy oil or sunflower oil.
- Choose foods rich in heathy fats, such as: fish, avocado, flaxseed and nuts.
- Avoid processed foods that contain trans fat such as stuffed cookies and creamy ice cream. Prefer products free of trans fat. This kind of information is usually displayed in the product package.
- Avoid using too much salt and ready-to-use seasoning to prepare food. Prefer natural seasoning such as bouquet garni, garlic, onion, lime, rosmary and oregano.
- Opt for cooked foods, roasted of gilled. Do not eat fried food.

- Avoid processed meats (sausages, ham), canned food (corn, peas) and processed sauces (ketchup and mayonnaise) because they contain a lot of salt and fat.
- Increase the amount of fruits, vegetables and greens. They are tasty and do not significantly contribute to gain weight. On the contraty, they are rich in vitamins, minerals and fiber, essential for the good health of the body.
- Fruits can be served as desserts or snacks, and in between meals.

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Back

PNAE series – Special Dietary Needs

## Dyslipidemia and High Blood Pressure

### Physical activities

- NCDs students tend to be sedentary. Therefore, they should be encouraged to participate in physical activities, both during physical education classes and after-school activities, such as 'Programa Mais Educação' (More Education Programme) and 'Escola Aberta' (Open School Programme).
- Besides that, they should be encouraged to drink plenty of water when in school.

### Learning activities

- School staff should promote learning activities that bring out healthy food and lifestyle for all students, including gardening activities.
- The vegetable garden at school can supply the preparations of school meals, and be used as a resource for learning activities.

### 10 steps to an adequate and healthy diet

1. Base your diet on fresh foods or less processed foods.
2. Use small quantities of oil, fat, salt and sugar to season and cook food, as well as, to make any recipe.
3. Limit processed foods.
4. Avoid ultra-processed foods.
5. Eat regularly and be mindful while eating. Opt for adequate places and keep someone company.
6. Go shopping in stores where there will be available a variety of fresh foods or less processed foods.
7. Develop, practice and share culinary skills.
8. Plan and give meals an adequate amount of time.
9. When eating out, choose places that make fresh food.
10. Be discerning about food information, suggestions and messages promoted in advertisements.

### For more information

- V Diretriz Brasileira de Dislipidemias e Prevenção da Aterosclerose. SBC 2013 [http://publicacoes.cardiol.br/consenso/2013/V\\_Diretriz\\_Brasileira\\_de\\_Dislipidemias.pdf](http://publicacoes.cardiol.br/consenso/2013/V_Diretriz_Brasileira_de_Dislipidemias.pdf).
- VI Diretrizes Brasileiras de Hipertensão. Brasil 2010. [http://publicacoes.Cardiol.br/consenso/2010/Diretriz\\_hipertensao\\_associados.pdf](http://publicacoes.Cardiol.br/consenso/2010/Diretriz_hipertensao_associados.pdf).
- Plano de ações estratégicas para o enfrentamento das doenças crônicas não transmissíveis (DCNT) no Brasil 2011-2022. (Brasil 2011). [http://bvms.saude.gov.br/bvs/publicacoes/plano\\_acoes\\_enfrent\\_dcnt\\_2011.pdf](http://bvms.saude.gov.br/bvs/publicacoes/plano_acoes_enfrent_dcnt_2011.pdf).
- Guia alimentar para a população brasileira. (Brasil 2014). <http://portalsaude.saude.gov.br/images/pdf/2014/novembro/05/Guia-alimentar-para-a-pop-brasileira-Miolo-PDF-internet.pdf>
- Estratégias para o cuidado da pessoa com doença crônica – obesidade. (Brasil 2014). <http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/cab38.php?conteudo=publicacoes/cab38>.
- Estratégia Intersetorial de Prevenção e Controle da Obesidade: recomendações para estados e municípios. (Brasil 2013). <http://www.mds.gov.br/segurancaalimentar/educacao-alimentar-e-nutricional/estrategia-intersetorial-de-prevencao-e-controle-da-obesidade>.
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## 6 Lactose intolerance

### 6.1 Recommendations summary

- Provide referral and counter-referral to the health care system in order to monitor the student.
- Suggest to student's guardian to seek for nutritional and medical supervision regarding the lack or the little options of lactose in the school menu.
- Offer student a menu free of lactose.
- Use suitable infant formula if necessary, preferably based upon medical prescription.
- Make sure the lactose replacement will provide the proper energy amount, macro and micronutrients, according to PNAE regulations. Give special attention to calcium offer.
- Advise food handlers avoid mistaken lactose intolerance by food allergy.

### 6.2 Initial considerations

Lactose intolerance is characterized by the decreased ability to digest lactose (the main milk carbohydrate) due to a deficiency or lack of disaccharidase enzyme called lactase which are in the small intestines' walls.

Primary-type lactose intolerance is when there is a deficiency in the hereditary enzyme, which is more serious and rare. Alternatively, it is an ontogenetic deficiency (adult type), which is the physiological decrease of the lactase production, being more common in preschoolers and adults. Secondary-type lactose intolerance is when the production of enzyme decreases due to intestinal diseases.<sup>1,2,3</sup>

Because there were no official lactose intolerance guidelines released by the end of the publication of this guide, the following references have been adopted: 'Diretriz clínica para intolerância à lactose'<sup>1</sup> (Clinical guidelines of lactose intolerance) and 'Manual de orientação sobre a alimentação escolar para portadores de diabetes, hipertensão, doença celíaca, fenilcetonúria e intolerância à lactose'<sup>2</sup> (School feeding guide for diabetes, hypertension, celiac diseases, phenylketonuria and lactose intolerance).

### 6.3 General recommendations

It is widely known that medical nutrition therapy recommends a lower or apportioned amount of lactose for some situations or during some stages of the treatment of lactose intolerance, as long as, the patient does not present side effects. The total elimination of lactose can have a social impact, interfere with the ingestion of other nutrients to turn it into chronic lactose intolerance, or even become irreversible<sup>1,2,3</sup>.

In order to standardize the special menus of the school it was decided to eliminate lactose completely. However, students with dietary prescriptions of small lactose quantities will have more flexibility to receive food with lactose during their individual meals and during meals with their family. Because of that, it is considered fundamental to have a counter-referral to show the prescriber and/or a referral to the nutritionist of the health care service.

### 6.4 Special menu

The recommended criterion to create a special school menu for students with lactose intolerance is to eliminate food sources of lactose<sup>1,2,3</sup>. Special menus with limited and controlled quantity of lactose can be planned based upon medical prescription. This kind of menu might require more attention and training to apportion and distribute.

No changes have been established regarding the intake of energy, macronutrients and micronutrients. Therefore, the nutritional offer should follow PNAE regulations, giving special attention to the calcium amount that will be offered<sup>1,2</sup>. The following foods can contribute to the calcium supply: infant formula, dark green leaves (broccoli, kale, chard and lettuce), and seafood (specially canned sardines, tuna and salmon)<sup>2</sup>.

### 6.5 Elimination of lactose and its sources

To create a special meal free of lactose, remove milk and its derivatives such as yogurt, dairy drink, cheese, whipping cream, cream, cream cheese. Generally, butter is considered practically lactose free or having traces of lactose.

It is also important to look for the presence of lactose in processed foods. Law # 13,305/2016 establishes that product packages must display an identification of lactose<sup>4</sup>. This law has been released on July 4th and had not been regulated by the time this guide was published. Regardless, even after this law becomes official, the recommendation will be to keep examining the packages of the products, their nutritional facts, and to contact the manufacturer customer service when necessary.

Although food handlers should be oriented on how to examine food labels, it is also advised to send to them a list of products that could be offered to students with lactose intolerance (including the products that have been approved and acquired, when applicable). It might be safer to send to school a positive list (of allowed products), preferably containing their respective substitutes, than to send a negative list (of prohibited products).

It is also important to adapt recipes that would be prepared with lactose. When the replacement is not possible, for example on meals that offer cookies, breads and yogurts (which contain lactose), these foods could be replaced by diet or similar products (lactose free), or, even soy-based products (soy yogurt, soy condensed milk, soy extract, soy drink).

Infant formula could be prescribed for students younger than two years old. Its acquisition requires special attention in order to offer the correct product, according to the legislation<sup>5,10</sup>.

### 6.6 Beyond the special menu

Teachers should be careful with daily activities that might expose students direct or indirectly (cross-contamination) to food that may contain lactose, such as lab classes, field trips, cooking activities, classification or food sensory tests, sports contests and other events.

School staff should always consider students with lactose intolerance when planning a school event or a student birthday party. The types of food offered in these events should be suitable for all students, specially for students with special dietary needs. For example, for birthday parties, the person in charge should be reminded about the special dietary need of some students and be encouraged to create a suitable menu. Equally important is to inform in advance the guardians of students with special dietary needs about celebration menus, so they could tell students what type of food

they may eat, or guardians can bring some food options for the students with special dietary needs. The students should be encouraged to identify the foods with allergen among the ones offered. Information and willingness are key factors for this process to work well.

## 6.7 Learn more

### 6.7.1 Basic References

1. **Diretriz clínica para intolerância à lactose.** Prefeitura de Porto Alegre. Secretaria de Saúde. Disponível em: <[http://www2.portoalegre.rs.gov.br/sms/default.php?p\\_secao=829](http://www2.portoalegre.rs.gov.br/sms/default.php?p_secao=829)>.
2. **Manual de orientação sobre a alimentação escolar para portadores de diabetes, hipertensão, doença celíaca, fenilcetonúria e intolerância à lactose.** VASCONCELOS, Francisco de Assis Guedes de et al (Org.) 2. ed. Brasília: PNAE, CECANE-SC, 2012. Disponível em: <<http://www.fn-de.gov.br/programas/alimentacao-escolar/alimentacao-escolar-material-de-divulgacao/alimentacao-manuais>>.
3. **Intolerância à lactose: mudança de paradigmas com a biologia molecular.** MATTAR, Rejane; MAZO, Daniel Ferraz de Campos. Rev. Assoc. Med. Bras. São Paulo, v. 56, n. 2, p. 230-236, 2010. Disponível em: <<http://www.scielo.br/pdf/ramb/v56n2/a25v56n2.pdf>>.

### 6.7.2 Related legislation

4. **Lei nº 13.305, de 4 de julho de 2016:** acrescenta art. 19-A ao Decreto-lei nº 986, de 21 de outubro de 1969, que “institui normas básicas sobre alimentos”, para dispor sobre a rotulagem de alimentos que contenham lactose. Disponível em: <[http://www.planalto.gov.br/ccivil\\_03/\\_Ato2015-2018/2016/Lei/L13305.htm](http://www.planalto.gov.br/ccivil_03/_Ato2015-2018/2016/Lei/L13305.htm)>
5. **Portaria MS nº 2.051/2001:** estabelece critérios da Norma Brasileira de Comercialização de Alimentos para Lactentes e Crianças de Primeira Infância, Bicos, chupetas e Mamadeiras. Disponível em: <[http://portal.anvisa.gov.br/wps/wcm/connect/cbf800474597049f4ddf3fbc4c6735/portaria\\_2051.pdf?MOD=AJPERES](http://portal.anvisa.gov.br/wps/wcm/connect/cbf800474597049f4ddf3fbc4c6735/portaria_2051.pdf?MOD=AJPERES)>.
6. **Resolução ANVISA RDC nº 222/2002:** aprova o Regulamento Técnico para Promoção Comercial dos Alimentos para Lactentes e Crianças de Primeira Infância. Disponível em: <[http://portal.anvisa.gov.br/wps/wcm/connect/6b6c3b004745973b9f89df3fbc4c6735/rdc\\_222.pdf?MOD=AJPERES](http://portal.anvisa.gov.br/wps/wcm/connect/6b6c3b004745973b9f89df3fbc4c6735/rdc_222.pdf?MOD=AJPERES)>.
7. **Lei nº 11.265/2006:** regulamenta a comercialização de alimentos para lactentes e crianças de primeira infância e também a de produtos de puericultura correlatos. Disponível em: <[http://www.planalto.gov.br/ccivil\\_03/\\_Ato2004-2006/2006/Lei/L11265.htm](http://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2006/Lei/L11265.htm)>.
8. **Resolução ANVISA RDC nº 43/2011:** dispõe sobre o regulamento técnico para fórmulas infantis para lactentes. Disponível em: <[http://portal.anvisa.gov.br/wps/wcm/connect/d8361b804aaa96d79ef6de4600696f00/Resolucao\\_RDC\\_n\\_43\\_de\\_19\\_de\\_setembro\\_de\\_2011.pdf?MOD=AJPERES](http://portal.anvisa.gov.br/wps/wcm/connect/d8361b804aaa96d79ef6de4600696f00/Resolucao_RDC_n_43_de_19_de_setembro_de_2011.pdf?MOD=AJPERES)>.

9. **Resolução ANVISA RDC nº 44/2011:** dispõe sobre o regulamento técnico para fórmulas infantis de seguimento para lactentes e crianças de primeira infância. Disponível em: <[http://portal.anvisa.gov.br/wps/wcm/connect/b11b30804aaa974f9effde4600696f00/Resolucao\\_RDC\\_n\\_44\\_de\\_19\\_de\\_setembro\\_de\\_2011.pdf?MOD=AJPERES](http://portal.anvisa.gov.br/wps/wcm/connect/b11b30804aaa974f9effde4600696f00/Resolucao_RDC_n_44_de_19_de_setembro_de_2011.pdf?MOD=AJPERES)>.

10. **Resolução ANVISA RDC nº 45/2011:** dispõe sobre o regulamento técnico para fórmulas infantis para lactentes destinadas a necessidades dietoterápicas específicas e fórmulas infantis de seguimento para lactentes e crianças de primeira infância destinadas a necessidades dietoterápicas específicas. Disponível em: <[http://portal.anvisa.gov.br/wps/wcm/connect/cdcdb100462b28\\_26be7cbfec1b28f937/RDC+45+alterada+pela+48\\_2014+ok.pdf?MOD=AJPERES](http://portal.anvisa.gov.br/wps/wcm/connect/cdcdb100462b28_26be7cbfec1b28f937/RDC+45+alterada+pela+48_2014+ok.pdf?MOD=AJPERES)>.



## Appendix F – Communication material example: flyer

PNAE series – Special Dietary Needs

## Lactose intolerance


<p><b>Lactose intolerance and its treatment</b></p> <ul style="list-style-type: none"> <li>• Lactose Intolerance is characterized by the decrease in the ability to digest lactose (the main milk carbohydrate) due to a deficiency or lack of disaccharidase enzyme called lactase which are in the small intestines walls.</li> <li>• Primary-type lactose intolerance is when there is a deficiency in the hereditary enzyme, which is more serious and rare. Alternatively, it is an ontogenetic deficiency (adult type), which is the physiological decrease of the lactase production, being more common in preschoolers and adults. Secondary-type lactose intolerance is when the production of enzyme decreases due to intestinal diseases.</li> <li>• It is important that guardians of students work with a doctor and a nutritionist for individual supervision.</li> </ul>	<p><b>Special menu</b></p> <ul style="list-style-type: none"> <li>• Student's menu should not contain lactose.</li> <li>• Students with dietary prescriptions of small lactose quantities will have more flexibility to receive foods with lactose during their individual meals and when having meals with their family.</li> </ul>
<p><b>Lactose intolerance vs. milk allergy</b></p> <ul style="list-style-type: none"> <li>• Lactose intolerance is the lack of the ability to digest sugar found in dairy products. It may cause gas and diarrhea.</li> <li>• Milk allergy is a hypersensitivity to milk protein, which may trigger reactions that can be in the skin, in the intestines or even anaphylactic.</li> <li>• Do not mistake these two conditions.</li> </ul>	<p><b>Be cautious when creating the menu</b></p> <ul style="list-style-type: none"> <li>• Two-year old children and younger should receive preferably infant formula without lactose.</li> <li>• Adapt recipes that contain ingredients from milk sources, such as: milk, cheese, whipped cream and other processed foods.</li> <li>• When offering meals with cookies, breads and yogurts that have lactose, replace these foods by diet products or lactose free products, or even soy-based products (soy yogurt, soy condensed milk, soy extract, soy drink).</li> <li>• The following foods can contribute with calcium supply: infant formula, dark green leaves (broccoli, kale, chard and lettuce), and sea food (specially canned sardines, tuna and salmon).</li> <li>• Avoid accidents and swapping food</li> </ul>
<p><b>Birthday parties</b></p> <ul style="list-style-type: none"> <li>• Student's guardians should be informed in advance about the party menu.</li> <li>• Also, the person in charge of the party should be encouraged to create a suitable menu for all students. Food that contains lactose should be identified.</li> <li>• The student should be respected and should not feel uncomfortable.</li> </ul>	<p><b>Processed Food</b></p> <ul style="list-style-type: none"> <li>• Food packages should provide appropriate information about the presence of lactose.</li> <li>• Be attentive and always examine the product ingredients to check the presence of milk and its derivatives. All products should be examined in order to avoid surprises, such as some types of sausages that contain milk powder in their composition.</li> </ul>
<p><b>General orientations</b></p> <ul style="list-style-type: none"> <li>• Some school activities may expose students directly or indirectly to lactose.</li> <li>• Be careful with culinary classes, lad classes and field trips.</li> </ul>	
<p><b>For more information</b></p> <p>Manual de orientação sobre a alimentação escolar para portadores de diabetes, hipertensão, doença celíaca, fenilcetonúria e intolerância à lactose.  <a href="http://www.fnde.gov.br/programas/alimentacao-escolar/alimentacao-escolar-material-de-divulgacao/alimentacao-manuais">http://www.fnde.gov.br/programas/alimentacao-escolar/alimentacao-escolar-material-de-divulgacao/alimentacao-manuais</a></p>	

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## 7 Final considerations: Enhancing dialogue

This Reference Guide final message is on enhancing dialogue. On the one hand, many students with special dietary needs choose for their privacy right regarding their condition. On the other hand, many students with celiac disease, diabetes, and cystic fibrosis, along with their mothers, are active in the dissemination of information about their conditions and rights. These are people that can and should be key partners of nutritionists and teachers.

The most significant associations and civic movements nationwide have been also referenced in the end of each section, for each condition. It is advised to look into these organizations, to find their location when looking for assistance, and to check their websites, where you can find their work and the experiences they acquired and the lesson they learned.

Teachers should be encouraged to go over these important resources. Many teachers would like to have the support of institutions like those, to feel prepared when facing a situation when they have students with a specific condition in the classroom. Schools in which there are many students with the same condition should organize meeting for parents, guardians and teachers to share everyday experiences. The participation of a school adviser or an educational psychologist can contribute to the dialogue. These meetings can be an enhancing moment for all participants.

Many of these special dietary needs affect children in the early childhood, which is a crucial period for their intellectual development. Many experts suggest that there is a strong relation between eating and the process of a child acquiring knowledge, and between eating and the development of a child's independence. This debate goes beyond supplying nutrients. We mean rights, choices, discernment, autonomy and individuality. However, in the cases of children with special dietary needs, most likely they will grow being served, guided, watched, restricted and forbidden.

When approaching this matter with school managers, directors and teachers, it is essential to highlight the relation between eating and the learning process, and to go beyond biologicistic logic. Additionally, it is necessary to remind them about the fact that special dietary needs impact the students' social relations and can affect their learning process. Because of that, the school institutional role becomes even more important. Many families do not even know about the need of having professional assistance (psychologist, educational psychologist, social assistant, etc.) or that these professionals are available in the public health care system. Besides that, some families may overreact and overprotect the child, and avoid assistance. Hence, the school may become an essential support factor for many parents.

Giving support, being trustworthy and allowing integration are the key success factors to provide good assistance for students with special dietary needs in schools.

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