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# Intake recommendations and labeling of trans fat in processed foods in Brazil: analysis of official documents

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## ABSTRACT

Consumption of trans fat has been proven to be harmful to human health. This lipid is found mainly in partially hydrogenated vegetable fat, which is widely used in processed foods. The aim of this study was to analyze official publications on maximum limits for consumption of trans fat and the regulations for its mandatory notification on the nutritional labeling of processed foods in Brazil. Weaknesses in the content of the documents analyzed were found, especially regarding the need for reformulation of both the maximum recommended consumption and the notification of trans fat on nutritional labeling for processed foods. This paper makes suggestions for this reformulation, through which it is sought to help consumers in controlling their trans fat intake and, consequently, in promotion of health.

**DESCRIPTORS:** Trans Fatty Acids. Industrialized Foods. Food Labeling. Consumer Health Information. Dietary Fats. Legislation, Food.

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## INTRODUCTION

The participation of processed food containing trans fat in contemporary diets is a striking trait of the population's current eating patterns. Its consumption has an impact on health, in relation to both development of chronic diseases and nutritional status.<sup>6,10</sup>

In view of the repercussions of this eating pattern and its deleterious effects on health, the World Health Organization (WHO) has included elimination of the consumption of processed trans fat as one of the goals of the Global Strategy for Promotion of Healthy Diet, Physical Activity and Health.<sup>16</sup>

However, the recommendations relating to consumption of trans fat are controversial and their notification on food labels is a public health issue that has still not been well clarified scientifically. The aim of the present study was to analyze official publications on maximum limits for consumption of trans fat and its mandatory notification on the nutritional labeling of processed foods in Brazil.

## RECOMMENDED MAXIMUM LIMITS FOR CONSUMPTION OF TRANS FAT

Since 1995, WHO has recommended that consumption of food with trans fatty acids should be controlled, but without determining a quantitative amount for consumption.<sup>13</sup> In 2002, a consultation promoted by WHO to update the recommendations on diet, nutrition and chronic disease prevention reiterated

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that diets should supply a maximum of 1% of trans fat within the daily calorie total.<sup>7</sup> In 2003, WHO published the Diet and Nutrition Strategy for Prevention of Chronic Diseases, which also recommended trans fat consumption of less than 1%.<sup>14</sup>

In 2004, WHO released the Global Strategy for Promotion of Healthy Diet, Physical Activity and Health, with the aim of eliminating the consumption of processed trans fat.<sup>16</sup> In 2007, after a scientific update on trans fat, with participation from scientific experts and representatives of the Food and Agriculture Organization of the United Nations (FAO), WHO recommended a revision of the tolerable limit of trans fat consumption, which was up to 1% of the daily energetic intake and which is currently in force in many countries, including Brazil.<sup>12</sup>

In Brazil, the Food Guide for the Brazilian Population (*Guia Alimentar para População Brasileira*, GAPB), which was launched in 2005, restricts the consumption of trans fat to 1% of the daily energy value, which corresponds to approximately 2 g/day in a 2,000 calorie diet.<sup>a</sup> Thus, probably, even though there is a WHO document issued in 2004,<sup>16</sup> the Ministry of Health based the value in the GAPB on the suggestion published by WHO in 1995,<sup>13</sup> which was valid until 2003.<sup>14</sup>

In this light, maintenance of this maximum limit for consumption of trans fat becomes questionable.

The United States Food and Drug Administration (FDA),<sup>2</sup> carried out a consultation in 2005 to approve a maximum recommended value for consumption of trans fat. The document reported that the majority of the votes of the members of the consultation were in favor of maintaining the recommendation of 1% of the total energy value, under the justification that elimination of trans fat would cause extraordinary changes in the diet. The Nutrition Committee of the American Heart Association declared that this limit was established because it would not be possible to eliminate trans fat from the diet, even if it was removed from processed foods, because of its natural presence in food originating from ruminant animals.<sup>5</sup> Thus, although not made explicit in any of the texts studied, it is possible to deduce that, in drawing up this recommendation, natural and processed trans fat were considered to be the same substance, with similar effects on the human organism. However, recent studies<sup>1</sup> have shown that the conjugated linoleic acid (CLA) originating from biohydrogenation, which is present in meats and milk,

presents possible beneficial effects on health, such as anti-obesity and anti-atherosclerosis effects, unlike processed trans fat.

On the other hand, trans fatty acids are not essential and do not offer benefits for health. This is why the Dietary Reference Intakes do not indicate consumption recommendations or maximum tolerated values. Nevertheless, if trans fat is prohibited, some regulatory bodies fear that the food industry might use saturated fat as a replacement.<sup>b</sup> However, the Pan American Health Organization (PAHO) has stated that saturated fat should only be used as a substitute when it is indispensable for the specific application; that technological advances should be taken into consideration in the substitution; and that development of new technologies should be stimulated.<sup>8</sup> Thus, the questioning about the possible justifications for this maximum limit of trans fat consumption persists.

In 2007, PAHO presented recommendations for the elimination of industrially produced trans fat and planned to establish a deadline for prohibiting trans fat in the Americas. Thus, the “Trans Fat Free Americas” working group recommended that trans fat should be replaced in foods and that its presence should be no greater than 2% of the total fats in oils and margarines, and no greater than 5% of the total fats in processed food.<sup>9</sup>

From this, the following reflection arises: can it be considered by health entities in Brazil that any safe consumption limit for trans fat exists, considering the proven harmful effect on health resulting from its consumption and the WHO recommendation to eliminate trans fat from the diet?

## NOTIFICATION OF TRANS FAT ON PROCESSED FOOD LABELS

In 2003, the National Sanitary Surveillance Agency (*Agência Nacional de Vigilância Sanitária*, Anvisa) included notification of trans fat as a mandatory item on the nutritional labels of processed food commercialized in Brazil.<sup>c</sup>

In analyzing the approval process for this regulation, it was seen that during the period in which it was available for public consultation, the majority of the votes were for voluntary declaration of trans fat. However, Anvisa maintained a policy decision to define mandatory

<sup>a</sup> Ministério da Saúde (BR), Secretaria de Atenção à Saúde, Departamento de Atenção Básica. Guia alimentar para a população brasileira: promovendo a alimentação saudável. Brasília (DF); 2005. (Série A. Normas e Manuais Técnicos).

<sup>b</sup> National Academies of Sciences, Institute of Medicine, Food and Nutrition Board. Dietary reference intakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids. Washington (DC); The National Academies Press; 2005. [cited 2011, Jan 12]. Available from: [http://www.nap.edu/catalog.php?record\\_id=10490#toc](http://www.nap.edu/catalog.php?record_id=10490#toc)

<sup>c</sup> Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Resolução – RDC nº 360, de 23 de dezembro de 2003: aprova regulamento técnico sobre rotulagem nutricional de alimentos embalados, tornando obrigatória a rotulagem nutricional. Diário Oficial União. 26 dez. 2003; Seção 1.

declaration of trans fat. It is important to note that it was Brazil that suggested to the Common Market of the South (*Mercado Comum do Sul*, Mercosul) that the law on food labeling, including mandatory declaration of trans fat, should be reformulated. This stance anticipated the concern and discussion about the theme in relation to neighboring countries.<sup>d,e</sup>

The Executive Board Resolution (*Resolução da Diretoria Colegiada*, RDC) No. 359 made it mandatory to declare the amount of trans fat relative to product portion size, which is also regulated by the same Resolution. In addition, according to RDC No. 360, processed foods that contain an amount of trans fat that is less than or equal to 0.2 g/portion can be considered and published as “does not contain trans fat”. This value was also described as “not significant” in the Resolution.<sup>f</sup>

Thus, since RDC No. 359 and No. 360 are from 2003, they were based on the WHO regulation released in 2003<sup>14</sup> and not on the Global Strategy for Promotion of Healthy Diet, Physical Activity and Health, which was launched in May 2004.<sup>16</sup>

In 2010, the regulations for food advertising in Brazil suggested that “foods with compositions including amounts greater than or equal to 0.6 g per 100 g, in the form in which it is presented for sale were considered to have a high quantity of trans fat”. Thus, foods with this characteristic should carry a warning about the risks of consuming this type of fat.<sup>g</sup> This warning seems to be an interesting initiative for helping consumers to control their consumption of trans fat and for publishing information on its harmful effects on health. However, this recommendation is questionable since it affirms that food considered to be high in trans fat presents more than 0.6 g, although WHO has conceded that there is no recommended safe intake level for this lipid. Therefore, the concern in this is that the suggested value may start to be taken as an indication that any value below this represents safe consumption.

As mentioned previously, the declaration of trans fat on the label refers to a portion size established for each food product. Consumption greater than this portion size, considering the criteria of the legislation itself, may lead to significant intake of trans fat, when source components are observed in the list of ingredients. For

example: according to the regulations, a portion of sweet biscuits is 30 g, which corresponds, on average, to two units. If the trans fat content does not reach 0.2 g in this portion, the label for these biscuits may state “does not contain trans fat”. However, if the list of ingredients of this product contains “partially hydrogenated vegetable fat”, trans fat is present, despite the emphasis on absence of this lipid on the label.

Thus, when the quantity of trans fat does not reach the minimum limit recommended by the legislation, the company is under no obligation to display the content on the label, thus making nutritional analysis on the food regarding trans fat impossible. It is also important to note that “portion” is defined as “the mean quantity of the food that should be consumed by healthy people, over the age of 36 months, on each consumption occasion, with the aim of promoting a healthy diet”, thus suggesting that consumption above this defined portion size may not be nutritionally safe.<sup>f</sup>

In addition to proposing that nutritional information should be presented according to portion size or complete package, the Codex Alimentarius also recommends that the measure for quantifying nutrients should be notified per 100 g, because this makes comparisons between products easier.<sup>15</sup> This recommendation seems interesting with regard to declaration of the trans fat content, because if the food product contains any source ingredient, there is a greater likelihood of it appearing in the nutritional information, in 100 g of the product. Thus, consumers would easily know that the food product contained trans fat, without having to consult the ingredient list.

This situation has been recognized by Anvisa, in that its recommendation to consumers is that “it is also important to observe the list of ingredients of the food, because it is through this list that it is possible to identify the addition of hydrogenated fats during the manufacturing process”.<sup>h</sup>

Thus, notwithstanding the official recommendations, the Brazilian legislation presents significant weakness, because indications of absence of trans fat in the nutritional information cannot be considered safe, given that consumers are required to take the list of ingredients into consideration.

<sup>d</sup> MERCOSUL. Grupo Mercado Comum. GMC/Resolução nº 44/03, de 10 de dezembro de 2003: aprova o regulamento técnico do Mercosul sobre rotulagem nutricional de alimentos embalados, LII GMC. Montevideo. 2003

<sup>e</sup> MERCOSUL. Grupo Mercado Comum. GMC/Resolução nº 46/03, de 10 de dezembro de 2003: aprova o regulamento técnico do Mercosul sobre rotulagem nutricional de alimentos embalados, LII GMC. Montevideo. 2003.

<sup>f</sup> Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Resolução RDC nº 359, de 23 de dezembro de 2003: aprova regulamento técnico de porções de alimentos embalados para fins de rotulagem nutricional. Diário Oficial Uniao. 26 dez. 2003; Seção 1.

<sup>g</sup> Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Resolução – RDC nº 24, de 15 de junho de 2010: dispõe sobre a oferta, propaganda, publicidade, informação e outras práticas correlatas cujo objetivo seja a divulgação e a promoção comercial de alimentos considerados com quantidades elevadas de açúcar, de gordura saturada, de gordura trans, de sódio, e de bebidas com baixo teor nutricional. Diário Oficial Uniao. 24 jun. 2010; Seção 1.

<sup>h</sup> Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Folheto explicativo sobre rotulagem de gorduras trans. Brasília (DF); 2006.

A study by Silveira (2011)<sup>i</sup> showed that in Brazil, trans fat can be found in the list of processed food in the following forms: partially hydrogenated fat, partially hydrogenated vegetable fat, hydrogenated vegetable fat, partially hydrogenated vegetable oil, hydrogenated vegetable oil, hydrogenated oil and partially hydrogenated and/or interesterified oil. These terms were also found by the Nutritional Council of Denmark, which published them in 2003 so that trans fat could be identified in the list of processed food ingredients.<sup>j</sup> In addition to these terms, it can also be asked whether, when the ingredient list contains terms such as hydrogenated fat, fat, vegetable cream or margarine, there can be any certainty regarding the presence or absence of trans fatty acids, because it is not known whether they underwent the process of partial hydrogenation, which forms these fatty acids.

In March 2010, an initial proposal from the Latin-American Project for Alignment of Reference Values for Nutritional Labeling (Lavron) was published, seeking to harmonize the reference values for nutritional labeling among Latin American countries. This standardization initiative is important, both for commercialization of products among these countries and for making it easier for them to be understood by consumers. The proposal of the Lavron project includes recommendations for several nutrients, among which is a reference to 2 g of trans fat as the daily value for a 2,000 calorie diet.<sup>4</sup> However, to present a reference value for trans fat in this proposal seems to be an error, because it does not follow the WHO recommendation.<sup>16</sup> In this regard, it can be seen that trans fat is treated as if it were a nutrient. This is not in agreement with either the GAPB or other official documents that, although not concordant with the WHO strategy, highlight a maximum daily consumption of this fat and not a recommended value for consumption.

In April 2011, Anvisa published public consultation No. 21, which allowed presentation of criticisms and suggestions relating to the proposal of the Technical Regulation Resolution on Complementary Nutritional Information. The proposal determined that the attribute “does not contain trans fat” could only be presented when the food product presented a maximum of 0.1 g of trans fat per portion or in 100 g for prepared meals. Therefore, once again, Anvisa presented an imprecise proposal for recommended nutritional food labeling, since 0.1 g of trans fat does not mean that the food product does not contain this type of fat. Consequently,

it would not be possible to advertise the product as “does not contain trans fat”.<sup>k,1</sup>

Thus, notwithstanding the evidence of the harmful effects of trans fat on health and the worldwide trend towards elimination of its consumption, there are misconceptions in the official Brazilian manifestations on this issue.

## FINAL REMARKS

In emphasizing the importance of the topic discussed in the present study, and following the strategies already developed and tested in other countries,<sup>11</sup> it can be suggested that the Brazilian legislation on maximum recommended consumption and notification of trans fat on the labels of processed food should be reformulated.

In line with the most recent recommendation on trans fat from WHO,<sup>14</sup> it can be recommended that the official Brazilian documents on trans fat should be revised. Thus, it would be important to revise the recommendation of the maximum consumption limit for trans fat in the GAPB,<sup>a</sup> which is currently 1% of the total daily energy value, such that the recommendation becomes no consumption of this type of fat (0%). Consequently, all the other official Brazilian documents that use the GAPB recommendation would be revised, such as the legislation for food advertising for children,<sup>8</sup> among other subsequent documents. This recommendation could be enabled through seeking substitutes for trans fatty acids in industrial processes, going beyond animal fats and tropical vegetable oils rich in saturated fatty acids, as recommended by L'Abbé et al.<sup>3</sup>

To ensure reliability in notifications of trans fat on the labels of processed food, the following are suggested:

1. Standardization of trans fat component terms in lists of ingredients. It can be suggested that the term “partially hydrogenated vegetable fat” should be used as standard and that, when margarines or hydrogenated vegetable creams are used, the term should be “margarine or vegetable cream with partially hydrogenated vegetable fat”.
2. Notification of the trans fat content per portion (g) and per 100 g of the food product in the nutritional

<sup>i</sup> Silveira BM. Informação alimentar e nutricional da gordura trans em rótulos de produtos alimentícios comercializados em um supermercado de Florianópolis [dissertação de mestrado]. Florianópolis: Universidade Federal de Santa Catarina; 2011.

<sup>j</sup> Stender S, Dyerberg J. The influence of trans fatty acids on health: a report of the Danish Nutrition Council. 4. ed. Søborg; 2003. (The Danish Nutrition Council Publication, 34). [cited 2011, Jan 8]. Available from: [http://www.meraadet.dk/gfx/uploads/Rapporteur\\_pdf/Trans%20fatty%20acids\\_4.th%20ed.\\_UK\\_www.pdf](http://www.meraadet.dk/gfx/uploads/Rapporteur_pdf/Trans%20fatty%20acids_4.th%20ed._UK_www.pdf)

<sup>k</sup> Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Portaria nº 27, de 13 de janeiro de 1998: aprova regulamento técnico referente a informação nutricional complementar. Diário Oficial Uniao. 16 jan. 1998; Seção 1.

<sup>1</sup> Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Consulta Pública nº 21, de 6 de abril de 2011: dispõe sobre o regulamento técnico sobre informação alimentar complementar. Diário Oficial Uniao. 12 abr. 2011; Seção 1.

information, without any minimum reference value for such notification. Thus, regardless of the quantity of trans fat in the food, it will always be notified.

3. Highlighting on the front part of the label that trans fat is absent should only occur when the product is free from trans fat, using the standard phrase “free from trans fat”, i.e. when the food product does not present ingredients

that contain trans fat in their composition or when its processing has not led to formation of this type of fat.

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