



THE IMPACT OF SUGAR AND PROCESSED FOOD CONSUMPTION ON PHYSICAL APPEARANCE

IMPACTO DO CONSUMO DE AÇÚCAR E INDUSTRIALIZADOS NA APARÊNCIA FÍSICA

IMPACTO DEL CONSUMO DE AZÚCAR Y ALIMENTOS PROCESADOS EN LA APARIENCIA FÍSICA



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ABSTRACT

This study investigates the relationship between the consumption of sugar and processed foods and physical appearance, addressing aspects such as skin quality, body weight, and hair health. Through interviews with nutritionists specializing in clinical and hospital nutrition, and research in databases such as Scielo, Google Scholar, and BVS, the main negative effects of excessive consumption of these foods were identified. The results suggest that replacing these foods with healthy options is essential to maintaining quality of life and self-esteem. This study contributes to the understanding of the importance of healthy eating in maintaining physical appearance and overall health.

Keywords: Diet. Physical Appearance. Processed Foods. Nutrition. Health.

RESUMO

O presente estudo investiga a relação entre o consumo de açúcar e alimentos industrializados e a aparência física, abordando aspectos como a qualidade da pele, o peso corporal e a saúde capilar. Por meio de entrevistas com nutricionistas especialistas em nutrição clínica e hospitalar, e pesquisas em bases de dados como Scielo, Google Acadêmico e BVS, foram identificados os principais efeitos negativos do consumo excessivo desses alimentos. Os resultados sugerem que a substituição desses alimentos por opções saudáveis é fundamental para manter a qualidade de vida e a autoestima. Este estudo contribui para a compreensão da importância da alimentação saudável na manutenção da aparência física e da saúde geral.

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Palavras-chave: Alimentação. Aparência Física. Alimentos Industrializados. Nutrição. Saúde.

RESUMEN

Este estudio investiga la relación entre el consumo de azúcar y alimentos procesados y la apariencia física, abordando aspectos como la calidad de la piel, el peso corporal y la salud capilar. Mediante entrevistas con nutricionistas especializados en nutrición clínica y hospitalaria, e investigaciones en bases de datos como Scielo, Google Scholar y BVS, se identificaron los principales efectos negativos del consumo excesivo de estos alimentos. Los resultados sugieren que reemplazar estos alimentos con opciones saludables es esencial para mantener la calidad de vida y la autoestima. Este estudio contribuye a comprender la importancia de una alimentación saludable para mantener la apariencia física y la salud general.

Palabras clave: Alimentos. Apariencia Física. Alimentos Procesados. Nutrición. Salud.



1 INTRODUCTION

The modern lifestyle, marked by the search for practicality, has led to a significant increase in the consumption of ultra-processed foods and added sugars. This change in eating habits impacts not only overall health but also physical appearance, influencing body composition, skin health, and metabolic balance. According to Monteiro et al. (2011), the need for convenience has driven the consumption of ready-to-eat foods and fast foods, which are often rich in sugars, saturated fats, and chemical additives.

One of the most evident effects of excessive consumption of ultra-processed foods is the increase in obesity, especially among children and adolescents. Costa et al. (2018) highlight that the growth in the prevalence of childhood obesity in Brazil in the last three decades is directly related to the higher consumption of these products. These foods are formulated to be hyperpalatable, which encourages excessive consumption and leads to an increase in caloric intake per meal (LAURA et al., [n.d.]). In addition, ultra-processed diets tend to be low in protein, resulting in reduced lean mass and muscle development, negatively affecting body composition (WANI; SARODE; TECHNOLOGY, 2018).

High sugar consumption plays a crucial role in the accumulation of body fat. When the body receives more sugar than it can store as glycogen (between 300g and 500g), the excess is converted into fat through de novo lipogenesis (ACHESON et al., 1988). Hellerstein (2001) reinforces this relationship by demonstrating that, in extreme situations, excessive carbohydrate consumption can lead to a significant increase in adipose tissue. Foods with a high glycemic index, such as ultra-processed foods, stimulate an exacerbated release of insulin, promoting an exaggerated anabolic response and fat accumulation (LUDWIG, 2002). In addition, the prioritization of sugar oxidation as a primary source of energy suppresses fat oxidation, favoring the storage of lipids in adipose tissue (SARIS, 2003).

Another worrying aspect is the impact of processed foods on the gut microbiota and systemic inflammation. The saturated fatty acids present in these products facilitate the synthesis and release of pro-inflammatory cytokines and alter the composition of the intestinal microbiota, increasing the proportion of gram-negative bacteria that produce lipopolysaccharides (LPS), substances that trigger inflammatory responses (RESPONSES; HEALTH, 2021). The chronic inflammation associated with these changes can affect skin health, contributing to the emergence of acne, dermatitis, and other dermatological problems.

In the Brazilian context, the scenario is even more alarming. Brazilians consume, on average, 50% more sugar than recommended by the World Health Organization (WHO), with a daily intake of approximately 80g, 64% of which comes from sugars added to foods and beverages (BRASIL, 2022). This excessive consumption is directly related to the increase in



chronic non-communicable diseases, such as obesity, which already affects more than 25% of the country's adult population. In addition, data from the Brazilian Institute of Geography and Statistics (IBGE) show that the consumption of ultra-processed foods jumped from 12.6% between 2002 and 2003 to 18.4% between 2017 and 2018 (BRASIL, 2023), reflecting a worrying change in dietary patterns.

At the same time, there is a reduction in the consumption of healthy foods, such as vegetables and fruits, in contrast to the increase in the intake of industrialized products and sugary drinks (POPKIN, 2010). This replacement negatively impacts physical appearance, since a lack of essential nutrients can lead to premature skin aging, loss of elasticity, and dryness.

In summary, excessive consumption of sugar and processed foods has profound impacts on physical appearance, promoting the accumulation of body fat, reduction of lean mass, and the emergence of dermatological problems associated with chronic inflammation. The change in dietary patterns, with the replacement of healthy foods with ultra-processed foods, aggravates these effects, highlighting the need for public policies and awareness to reverse this scenario and promote more balanced eating habits.

2 METHODOLOGY

This study is characterized as a qualitative research, with a descriptive and exploratory approach. The methodology adopted aimed to understand the impacts of sugar consumption and processed foods on physical appearance, focusing on aspects such as skin health, body composition, hair health and self-esteem.

Data collection was carried out through two complementary strategies:

I. Bibliographic Research:

A literature review was conducted in scientific databases such as Scielo, Google Scholar and Virtual Health Library (VHL), using the following descriptors: "sugar", "ultra-processed foods", "nutrition", "physical appearance", "skin health" and "premature aging". Articles published between the years 2000 and 2024 were selected, prioritizing publications with relevance to the theme of food and body aesthetics.

II. Semi-Structured Interview with a Professional in the Area:

An interview was conducted with a clinical nutritionist (identified as A.F.), a specialist in weight loss, hypertrophy and quality of life, who also has training in prescription of herbal medicines and nutritional supplementation. The interview was semi-structured and addressed topics such as the effects of sugar and processed foods on physical



appearance, the most common clinical signs observed in patients and practical strategies for food replacement.

The data obtained were analyzed qualitatively, based on the content analysis technique, allowing the identification of relevant thematic categories such as premature aging, inflammation, fluid retention, and healthy nutritional practices. The triangulation between the theoretical data and the practical reports of the professional enabled a more comprehensive analysis of the impacts of eating habits on aesthetics and general health.

This research respected ethical principles, ensuring the anonymity of the interviewee and using the data exclusively for academic purposes. As the study did not involve intervention or collection of sensitive data, it was not necessary to submit to the Ethics Committee, according to CNS Resolution No. 510/2016.

3 RESULTS AND DISCOURSE

In this section, the main findings obtained from the interview with clinical nutritionist A.F. and the literature review on the effects of excessive consumption of sugar and ultra-processed foods on physical appearance are presented and discussed. The qualitative analysis allowed us to identify consistent relationships between inadequate eating habits and aesthetic changes, such as premature skin aging, increased oiliness, fluid retention, cellulite and changes in body composition.

The clinical perceptions of the interviewed professional were compared with recent scientific literature, with the aim of validating her practical observations and expanding the understanding of the metabolic and aesthetic impacts of processed foods and excess sugar. The discussion is organized into sub-themes that address the main effects observed, viable nutritional strategies in the daily context, and the physiological mechanisms involved, such as the glycation process and chronic inflammation.

Thus, this chapter aims not only to report the results obtained, but also to interpret them in the light of nutrition science, promoting a critical reflection on how food choices directly affect body aesthetics and overall health.

3.1 IMPACTS OF SUGAR AND ULTRA-PROCESSED FOODS ON PHYSICAL APPEARANCE: CLINICAL PERCEPTIONS AND NUTRITIONAL IMPLICATIONS

The interviewee A.F., a clinical nutritionist specializing in hypertrophy, weight loss and quality of life, highlights the importance of individualized follow-up, emphasizing:

"My experiences in the area of nutrition are very rewarding... show patients that the basics really work." (A.F.2025)



This perspective emphasizes the relevance of nutritional interventions that respect personal needs and preferences, aligning with best practices for adherence and therapeutic success.

Regarding the effects of excessive consumption of sugar and processed foods on appearance, A.F. explains that:

"Excess sugar contributes to premature aging of the skin through the process of glycation... favoring wrinkles and sagging." (A.F.2025)

Glycation, confirmed in the literature as a biochemical reaction between sugars and structural proteins such as collagen, reduces skin elasticity and accelerates skin aging (Monnier et al., 2005). This reinforces the interviewee's warning about the aesthetic effects of high sugar consumption.

In addition, the nutritionist relates the consumption of ultra-processed foods to systemic inflammation that affects the skin:

"Ultra-processed foods, rich in trans fats and additives, increase inflammation... causing acne, oiliness and dehydration." (A.F.2025)

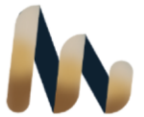
These points reflect current knowledge about the influence of dietary habits on the gut microbiota and inflammatory response, which directly impact dermatological conditions (Calder et al., 2019). Another important aspect highlighted is fluid retention: "The high sodium content and additives unbalance hydration... aggravating the swelling and the tired appearance."

Excessive sodium intake, common in ultra-processed foods, is associated with changes in body fluid balance and increased osmotic pressure, which explains the edema and feeling of bloating reported (He & MacGregor, 2010).

A.F. also points out classic physical signs of inadequate consumption:

"Oily skin, acne, wrinkles, flaccidity, weight gain in the abdominal region and cellulite... in addition to weak hair and nails."

These symptoms are common indicators of poor dietary quality, especially due to the effect of excess simple carbohydrates and trans fats on body composition and skin tissue health (Katta & Desai, 2014). Regarding practical strategies, the interviewee suggests simple substitutions to reduce sugar and ultra-processed foods:



"Swap soft drinks for sparkling water and lemon, industrialized sweets for fruits, and sugary cereals for oatmeal with cinnamon."

"For ultra-processed foods, opt for fresh fruits, nuts and homemade wholemeal breads." (A.F.2025)

These recommendations are in line with current nutritional guidelines that prioritize minimally processed foods and natural sources of nutrients, essential for metabolic and aesthetic health (Brasil, 2014; Monteiro et al., 2018).

Finally, for the control of the desire for sweets, A.F. emphasizes:

"Balance proteins, fiber, and good fats, consume dark chocolate, fruits with cinnamon, and maintain hydration." (A.F.2025)

This approach is supported by the science of functional nutrition, which highlights the importance of glycemic stability and satiety to prevent hunger spikes and excessive sugar consumption (Blundell et al., 2010). In short, the interviewee's clinical perceptions broadly corroborate scientific knowledge, reinforcing that personalized nutritional interventions and encouraging conscious food choices are essential to prevent the negative impacts of excessive consumption of sugar and ultra-processed foods on health and physical appearance.

3.2 PRACTICAL STRATEGIES FOR HEALTHY EATING IN BUSY ROUTINES: HYDRATION AND ANTIOXIDANTS IN COMBATING THE EFFECTS OF ULTRA-PROCESSED FOODS

With the rush of everyday life, many people resort to ultra-processed foods for practicality, compromising the quality of their diet. However, it is possible to adopt simple and effective strategies that fit into the routine and promote health benefits.

Adequate hydration and regular consumption of antioxidant-rich foods are practical examples that help eliminate toxins, prevent premature aging, and reduce the negative impacts caused by a nutrient-poor diet. These actions contribute to maintaining metabolic balance, skin health, and overall well-being, even in the face of tight schedules.

Interviewee A.F. recognizes that the hectic routine is a challenge to maintain a balanced diet, and suggests quick and accessible substitutions for this context:

"For a busy routine, replace fast foods with ready-made salads with proteins, such as chicken or tuna... Swap processed snacks for fruits and nuts, and sodas for water or unsweetened iced tea." (A.F.2025)



This recommendation aligns with evidence indicating the importance of practical yet nutritionally dense meals for maintaining metabolic health on busy days (Slavin & Lloyd, 2012). The use of balanced lunchboxes and natural snacks facilitates adherence to a healthier eating pattern, reducing exposure to ultra-processed foods.

In addition, replacing white breads with wholemeal or wraps contributes to improved satiety and glycemic control:

"Swapping white breads for wholemeal breads or wraps is also a good option to keep you feeling full and energized." (A.F.2025)

This approach is supported by the literature that highlights the benefits of whole foods in controlling blood glucose and promoting energy well-being, crucial factors for daily performance and the prevention of compulsive consumption of foods high in sugar (McKeown et al., 2009).

Another key point highlighted is the importance of hydration and antioxidant consumption to mitigate the negative effects of sugar and ultra-processed food consumption:

"Hydration is essential to help eliminate accumulated toxins... preventing swelling."

"Antioxidants, present in fruits, vegetables and seeds, fight free radicals generated by inflammation and oxidative stress, protecting the skin and body cells." (A.F.2025)

These mechanisms have been widely studied, showing that adequate water intake facilitates the physiological processes of detoxification, while antioxidants act to neutralize free radicals, reducing cell damage and premature aging (Pham-Huy et al., 2008; Popa et al., 2019). Thus, the combination of adequate hydration and a diet rich in antioxidants is an essential strategy for maintaining skin and systemic health, especially in individuals with diets rich in processed foods.

Therefore, the interviewee's suggestions offer a viable and effective set of actions that can be incorporated into the daily routine, promoting not only aesthetic improvement, but also quality of life and integral health.

3.3 THE GLYCATION PROCESS: AND DERMIS LEVEL CHANGES

Excessive sugar consumption has been widely associated with premature skin aging, mainly due to the glycation process (the process by which sugar molecules bind to proteins and lipids), which compromises the integrity of collagen and elastin fibers, resulting in wrinkles and sagging (Silva & Andrade, 2020). In addition, ultra-processed foods contribute



to inflammatory processes, favoring the appearance of acne, oily skin, fluid retention, and increased body fat (Costa et al., 2021).

These findings are particularly concerning considering that excessive consumption of sugar and ultra-processed foods is a common practice in modern society. Additionally, a lack of awareness about the negative effects of these foods on skin health and premature aging can contribute to the perpetuation of these harmful eating habits. It is important to note that the glycation process, mentioned earlier, is a complex mechanism that involves the reaction between sugar and proteins in the skin, leading to the formation of advanced glycation end products (AGEs). These AGEs can accumulate on the skin over time, contributing to the loss of elasticity and firmness of the skin, as well as the formation of wrinkles and sagging.

In addition, chronic inflammation (the immune system's extended response process to an infection) associated with the consumption of ultra-processed foods can have broader negative effects on health, including increased risk of heart metabolic disease, diabetes 2, and obesity risk. Therefore, it is critical for individuals to take a holistic approach to health, including a balanced diet rich in fruits, vegetables, and whole grains, as well as a regular routine of physical activity and stress management.

The most evident physical signs of a diet high in sugar and processed foods include oily skin prone to acne, swelling due to fluid retention, wrinkles and sagging due to collagen degradation, in addition to the accumulation of fat, especially in the abdominal region. Frequent intake of these foods can lead to effects such as hair loss and weakened nails, reflecting a negative systemic impact on the body (Peixoto, 2015).

Not only are these physical signs aesthetically unpleasing, but they can also be indicative of deeper health problems. Oily and acne-prone skin, for example, can be a sign of hormonal imbalance and chronic inflammation in the body. Additionally, swelling due to fluid retention can be an indicator of more serious health problems, such as kidney or heart failure.

Collagen breakdown and the formation of wrinkles and sagging can also be a sign of accelerated cellular aging, which can be influenced by factors such as oxidative stress, chronic inflammation, and exposure to free radicals. In addition, the accumulation of fat in the abdominal region (visceral fat affects vital organs by disclosing metabolic diseases) can be an indicator of insulin resistance and increased risk of metabolic diseases, such as diabetes 2 and heart disease.

Hair loss and weakened nails can also be a sign of nutritional deficiency and hormonal imbalance. Frequent intake of high-sugar and processed foods can lead to a deficiency of essential nutrients, such as vitamins and minerals, which are essential for hair and nail health.



Additionally, chronic inflammation and oxidative stress can damage hair and nail cells, leading to a loss of health and vitality.

3.4 STRATEGIES FOR REDUCING SUGAR CONSUMPTION

Given these issues, strategies to reduce the consumption of sugar and processed foods are essential to improve body health and aesthetics. Among the main nutritional recommendations, the replacement of soft drinks with sparkling water and lemon, the exchange of industrialized sweets for fresh or dehydrated fruits without added sugar, and the choice of whole grains, such as oatmeal with cinnamon, instead of sugary cereals. The use of natural sweeteners, such as stevia or erythritol, and the prioritization of fresh and minimally processed foods are effective alternatives for a healthier diet (Moreira et al., 2023).

Proper hydration plays an essential role in eliminating toxins and preventing swelling. In addition, the consumption of foods rich in antioxidants, such as fruits and vegetables, helps neutralize free radicals, minimizing the effects of premature aging and promoting skin health (Almeida & Rocha, 2021).

Hydration is also essential for maintaining skin health, as it helps to eliminate toxins and residues that can accumulate on the skin, causing problems such as acne, wrinkles, and sagging. In addition, it helps to maintain the elasticity and firmness of the skin, reducing the appearance of wrinkles and fine lines. (Moreira et al., 2023).

Consuming antioxidant-rich foods, such as fruits and vegetables, is equally important for skin health. Antioxidants help neutralize free radicals, which are unstable molecules that can cause damage to skin cells, leading to premature aging and health problems like skin cancer. (Moreira et al., 2023).

Table 1

FOODS RICH IN ANTIOXIDANTS		
	FRUIT	VEGETABLE
1°	Blueberry	Cabbage
2°	Acai	Spinach
3°	Strawberry	Broccoli
4°	Pomegranate	Beetroot
5°	Cabeludinha (or Jambo)	Red Bell Pepper

Source: Moreira et al., 2023.

In addition, antioxidants help protect the skin from damage caused by sun exposure, smoking, and other environmental factors that can affect skin health. (Moreira et al., 2023).

It's important to note that combining an antioxidant-rich diet with adequate hydration can have synergistic effects on skin health, helping to keep skin healthy, radiant, and youthful



for longer. These practices can be complemented with other skincare strategies, such as sun protection, regular cleansing, and the use of skincare products suitable for the skin type. (Souza et al., 2023).

For those who have a busy routine, practical alternatives can facilitate the adoption of healthier eating habits. Options such as ready-made salads with proteins, healthy snacks (nuts and fruits) and balanced lunchboxes replace fast foods without compromising practicality. In addition, quick preparations such as smoothies and natural yogurts are excellent choices to maintain a balanced diet even in the midst of a hectic daily life (Souza et al., 2023).

4 CONCLUSION

Therefore, excessive consumption of sugar and processed foods has a significant negative impact on physical appearance and overall health. Adopting a healthy and balanced diet, rich in fruits, vegetables, whole grains, and lean proteins, is essential to maintain quality of life and self-esteem.

In addition, adequate hydration, consumption of antioxidant-rich foods, and regular physical activity are essential to promote skin health and prevent premature aging. It is important to remember that the skin is a vital organ that reflects the overall health of the body, and that a healthy and balanced diet is essential to maintain your health and beauty.

Adopting healthy habits can also have a positive impact on self-esteem and quality of life. When we feel good about our body and our health, we are more likely to feel confident and happy. In addition, a healthy and balanced diet can help prevent chronic diseases, such as diabetes, heart disease, and obesity.

Therefore, it is essential that we make conscious choices about our diet and lifestyle. With small changes in daily life and the adoption of healthy habits, it is possible to achieve a healthier and more radiant physical appearance, as well as improve quality of life and overall health. Remember that health and beauty start from within, and that eating healthy and balanced is the first step to achieving a healthy body and mind.

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