The Truth about Hidden Sugars: A Risk for Health

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CE Credits: 2 hours
Intended Audience: Dentists, Dental Hygienists, Dental Assistants, Dental Students, Dental Hygiene Students, Dental Assistant Students
Date Course Online: 10/01/2018
Last Revision Date: 02/28/25
Course Expiration Date: 02/27/2028
Cost: Free
Method: Self-instructional
AGD Subject Code(s): 150

Online Course: *www.dentalcare.com/en-us/ce-courses/ce694*

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Conflict of Interest Disclosure Statement

- The author, Diane Vernetti-Callahan reports no conflicts of interest associated with this course. She has no relevant financial relationships to disclose.

Short Description

The Truth about Hidden Sugars: A Risk for Health is a free dental continuing education course that covers a wide range of topics relevant to the oral healthcare professional community..

Course Contents

Overview

Hidden sugars are a pervasive element in our diets, often lurking in foods we consider healthy. Understanding "The Truth about Hidden Sugars" is critical for maintaining optimal health. This course will explore hidden sugars in modern diets, highlight common sources, and assist us in the education of our patients to make informed dietary choices and promote overall health. This course explores the relationship between hidden sugars in foods and how they correlate with disease and systemic health.

Learning Objectives

Upon completion of this course, the dental professional should be able to:

- Develop skills to read and interpret hidden sugars on an ingredient label.
- Assess your knowledge while comparing various food labels.
- Understand the impact of ultra processed foods and beverages on health; gut dysbiosis, oral disease, diabetes, obesity, inflammatory conditions, non-alcoholic fatty liver disease, (NAFLD) and early childhood caries (ECC).
- Explore innovative technologies and tools for consumers to track and monitor sugar intake.
- Utilize practical strategies to find and avoid hidden sugars in food products.
- Understand how sugar marketed to children affect long term physical and mental health.
- Evaluate how carbohydrates differ significantly by using the Glycemic Index.
- Practice using a food scanning app to access nutritional information on food products.
- Understand our role as health care providers regarding education and prevention.

Introduction to Hidden Sugars

Learn about the hidden sugars in food and how it may impact our health. Supporting research from major health organizations including the World Health Organization (WHO), the Center for Disease Control (CDC), Center for Science in the Public Interest, American Diabetes Association (ADA), Healthy Children.org, John Hopkins School of Public Health, and the Food and Drug Association (FDA) suggests reducing caloric intake from added sugars.[10] This course will examine the truth about hidden sugars, associated health risks, and how to choose healthier alternatives.

We are aware of the added sugars in ultra-processed foods such as soda and sports drinks, baked goods, and snack foods. But did you know your salad dressing, soup, bread, pasta sauce, and yogurt may contain added sugars? Even foods marketed as "healthy" may have additional sugars added to the product. Manufactures are required to include added sugars in the ingredient list, based on weight. But they often disguise these names to "camouflage" the amount of sugar in their product. In fact, there are over 61 different names of added sugars on a food label.[9] The Food and Drug Administration (FDA) requires manufactures to use the nutrition label template that includes a line for "added sugars." This will help consumers distinguish between sugars that are naturally occurring in foods, like lactose in milk and fructose in fruit verses "evaporated cane juice" in flavored yogurt.

The Truth about Sugars

Sugars are chemicals made of carbon, hydrogen, and oxygen that taste sweet.[9] They regulate homeostatic energy balance. Sugars are divided into groups, monosaccharides like fructose and glucose and disaccharides like sucrose, maltose, and lactose. Polysaccharides are long

chain monosaccharides made up of starch, glycogen, and cellulose. The body breaks down these sugars and uses them for fuel. However, studies indicate too much sugar as well as the type of sugar, specifically high fructose corn syrup, can place individuals at risk for non-communicable diseases.

Today, the average adult consumes roughly 19 teaspoons of added sugars every day.[9] That averages 60 pounds of added sugar each year.[9] Individuals should consume no more than six teaspoons of sugar per day for women, nine teaspoons of sugar for men and three to six teaspoons of sugar for children.[9] In spite of these recommendations, consumption of added sugar remains high, especially in the form of sugar sweetened beverages (SSB), in the form of high fructose corn syrup. Consumers often do not compensate for the high caloric content by consuming less food throughout the day. A single beverage may contain 34-47 grams of sugar per serving.[4] However, for individuals who are conscious about obvious sugars in foods, reducing sugar intake in an already healthy diet can be tricky. For example, many sauces have 3-16 grams, flavored waters 10-25 grams, vegetable soups 8-24 grams, and industrial breads 8-12 grams.[4]

Hidden Sugars in Ultra Processed Foods (UPF)

As our culture demands cheap, readymade meals, it is no surprise this convenience comes at a price. Ultra processed foods (UPF), such as cereals, microwave dinners, soft drinks, and packaged snacks, make up 73% of the US food supply and account for 60% of daily calories.[16] Emerging evidence identifies the consumption of UPF as potential health risks linking to type 2 diabetes, cardiovascular disease, cancer, and depression.[16] UPF contain added sugars, salts, hydrogenated fats, bulking agents, and starches to enhance the flavor. Foods marketed as healthy often contain extra sugar to help improve their palatability and texture.

Health Impacts of Hidden Sugars

Oral Disease

A collective term representing tooth decay, gingivitis, periodontal disease, tooth loss, and oral cancer affect 3.5 million people worldwide.[1] The World Health Organization (WHO), Global Health Status Report of 2022 states oral disease is greater than the combined global prevalence of the five major non-communicable diseases (NCD) (Neurodegenerative, Type 2 Diabetes, Cardiovascular Disease, Chronic Respiratory Disease, and Cancer).[2] High sugar consumption, along with tobacco and alcohol misuse are key modifiable risk factors for preventing oral disease.

Severe periodontal disease has a global prevalence of 19%.[1] There is mounting research that a high-sugar diet consisting of ultra processed foods (UPF), especially sugar sweetened beverages (SSB), increases the risk of periodontal inflammation.[1] The inflammation stems from dysbiosis of the periodontal microbiota, leading to a loss of supporting structures.

The most diverse microbiome in the human body is in the oral cavity, containing over seven hundred different species of bacteria. Higher free sugar intake along with high glycemic foods, decrease the diversity of healthy bacteria, increase streptococcus species leading to caries risk as well as dysbiosis of the oral microbiome.[1]

The initiation, development and progression of periodontal inflammation caused by dysbiosis of biofilm, the host response to inflammation causing tissue damage, and other mitigating systemic factors in the body, can exaggerate the role excessive free sugars play in the diet.

Oral disease in the form of early childhood caries (ECC) links with other diseases of childhood, primarily due to risk factors shared by other noncommunicable diseases (NCDs).[20] Early Childhood Caries (ECC) is characterized by microbiome dysbiosis with increased cariogenic bacterial load. The frequency and high consumption of sugar intake correlates with obesity, diabetes, and nonalcoholic fatty liver disease with the incidence growing in pediatric patients. In addition, dental caries can lead to abscesses and dental pain, which may compromise the ability to eat, sleep and may restrict life activity of children. Severe

dental caries is associated with poor growth.[20] Moreover, ECC is an economic burden to the family and society.[20] ECC is the most common NCD among children around the globe.[2]

Obesity

According to the World Health Organization (WHO), in 2022, 1 in 8 people are living with obesity, while worldwide the rate of obesity has doubled since 1990.[3] In adolescent, the rate has quadrupled.[3] In most cases, obesity is multifactorial due to obesogenic environments, psychosocial factors, and genetic variants.[3] For example, access to sustainable food at affordable prices, a lack of safety, and physical location barriers, contributes to obesogenic environments, especially in economically challenged populations. At the same time, the overwhelmed healthcare system, lacks preventive measures in initial stages to reduce progression of the disease, with a projected financial burden of $3 trillion dollars by 2030 globally.[3] Childhood and adolescent obesity have adverse psychological consequences including poor school performance, quality of life, and discrimination and bullying. It is common to find obesity co-existing within the same communities. Children in low-income households are more vulnerable to inadequate prenatal care and exposed to high-fat, high sugar diets that are lower in nutrient quality. The diet patterns, in conjunction with inactivity, results in a sharp increase to childhood obesity. The evidence of diet and obesity appears strongest when investigating the impacts of sugar sweetened beverages (SSB) marketed to adolescents, specifically sucrose and high fructose corn syrup, given the unique way they are metabolized by the body.[2] Added sugars during processing and preparation, such as bakery products and ice cream are key contributors to obesity.

The recommendation suggests no more than 10% of total calorie intake from added sugars. The current dietary and physical patterns are often the result of environmental and societal conditions that constrain personal choice. The rise in obesity demands a multisectoral action.

Inflammatory Conditions

Consumption of a diet high in added sugars are linked to several non-communicable diseases, causing systemic inflammation, gut dysbiosis, and metabolic syndrome. For example, dietary factors associated the consumption of a Western dietary are important determinates of gut microbiota diversity, and often are the precursor leading to poor health outcomes.

Inflammation is a protective host response to outside stimuli. Unregulated chronic inflammation can lead to pathology within the body, specifically cardiovascular disease, diabetes, neurodegenerative diseases, cancer, and metabolic syndrome.[1] Poor lifestyle choices, an ultra processed diet, and microbiome dysbiosis are major contributors to systemic chronic inflammation. Current evidence indicates that excessive dietary sugars can induce inflammation through several mechanisms.[1]

Consuming excess sugars increase intestinal permeability leading to inflammation and gut barrier dysfunction.[1] An increased intestinal mucosal lining disrupts homeostasis and leads to the transfer of bacteria into the host, causing systemic inflammation. When the gut microbiota are disrupted, an increase in gram negative bacteria release pro inflammatory cytokines, transferring the endotoxins to the liver, which increases the incidence of both nonalcoholic fatty liver disease (NAFLD) as well as insulin resistance.[1]

Diabetes & Insulin Resistance

Diabetes, mostly in the form of Type 2, is strongly related to diet and lifecycle factors. The disease affects 13% of the population, a decline in glycemic control from a decade ago.[5] Diabetes is associated with sugar consumption, specifically sugar sweetened beverages (SSB).[2] Carbohydrates (fructose) from fruit, vegetables, and whole grains, are protective factors for diabetes risk. Insulin resistance, a precursor to Type 2 diabetes, is a condition when the body's cells become less responsive to the hormone insulin. When cells are resistant to insulin, glucose builds up in the blood, leading to higher blood glucose levels. Studies indicate a plant-based diet may improve insulin sensitivity and better glycemic control.

The Glycemic Index (GI) is a rating system from 0 to 100 that measures how a carbohydrate raises blood sugar levels. Proteins and fats are zero GI foods. Most whole fruits and vegetables are considered low (55 or lower) to medium (56-69) glycemic-index foods apart from dates, kiwi, watermelon, potatoes, rutabaga, parsnips, and pumpkin, which are consider high-glycemic index foods (70 or higher). Ultra processed foods (UPF) and refined carbohydrates are considered high GI foods.[13] Studies demonstrate that a low glycemic index diet reduced levels of the inflammatory biomarker C-reactive protein whereas diets in high-glycemic foods increased inflammation.[13]

Here are key recommendations from the American Diabetes Association's 2023 Standards of Care.[14] Healthcare providers can utilize the "Standards of Care" as a guideline for patient education.

Healthy Eating	Emphasize a balanced diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats. Limit intake of processed foods, sugary beverages, and high-fat foods.
Physical Activity	Engage in regular physical activity, aiming for at least 150 minutes of moderate-intensity exercise per week, such as brisk walking or cycling. Include muscle-strengthening activities at least twice a week.
Weight Management	Achieve and maintain a healthy weight. For those with overweight or obesity, a weight loss of 5-10% can significantly improve blood sugar levels and reduce the risk of developing type 2 diabetes.
Medication Management	Use medications as prescribed to manage blood glucose levels, blood pressure, and cholesterol. The ADA highlights the importance of newer medications that can aid in weight loss and improve cardiovascular and renal outcomes.
Monitoring	Regularly monitor blood glucose levels to ensure they are within target ranges. This helps in making necessary adjustments to diet, exercise, and medications.
Sleep and Stress Management	Ensure adequate sleep and manage stress through techniques such as mindfulness, meditation, or yoga, as these can impact blood sugar levels.
Regular Check-ups	Schedule regular medical check-ups to monitor for diabetes-related complications and adjust treatment plans as needed.
Education and Support	Seek diabetes education and support from healthcare providers, diabetes educators, and support groups to stay informed and motivated.

Non-Alcoholic Fatty Liver Disease (NAFLD)

Nonalcoholic fatty liver disease (NAFLD) is a silent public health problem worldwide. Most individuals are asymptomatic and unaware of their risk, typically associated with obesity and an unhealthy lifestyle. Diets high in glycemic load and sugar sweetened beverages (SSB) are associated with NAFLD. High fructose corn syrup in SSB increase adiposity, insulin resistance, inflammation, and impaired gut permeability together with bacterial overgrowth, causing changes in the gut-liver access.[8] In addition, artificial sweeteners may result in gut microbiome dysbiosis, leaky gut, and the release of proinflammatory mediators, enhancing the effects of NAFLD.[6]

The diagram below demonstrates the intercorrelation between diets high in sugars and non communicable diseases. (NCD).

Periodontal health is inextricably linked to systemic health including several lifestyle factors (see Figure 1).[1] More than one million adults will die from diet-related disease in the US every year.[16] Addressing these issues requires a multifaceted approach, including better nutrition education, policy change, and increased access to healthy foods.

Pediatric & Adolescent Health

Research has linked declining pediatric and adolescent health to high sugar consumption, problems with sleep, learning, and worsening emotional health, as well as an increase in diabetes, obesity, and non-alcoholic fatty liver disease. (NAFLD)[18] The type of sugar, in the form of high fructose corn syrup found in sugar sweetened beverages (SSB) such as soda, energy drinks, and juice may also play a role in inflammatory conditions such as

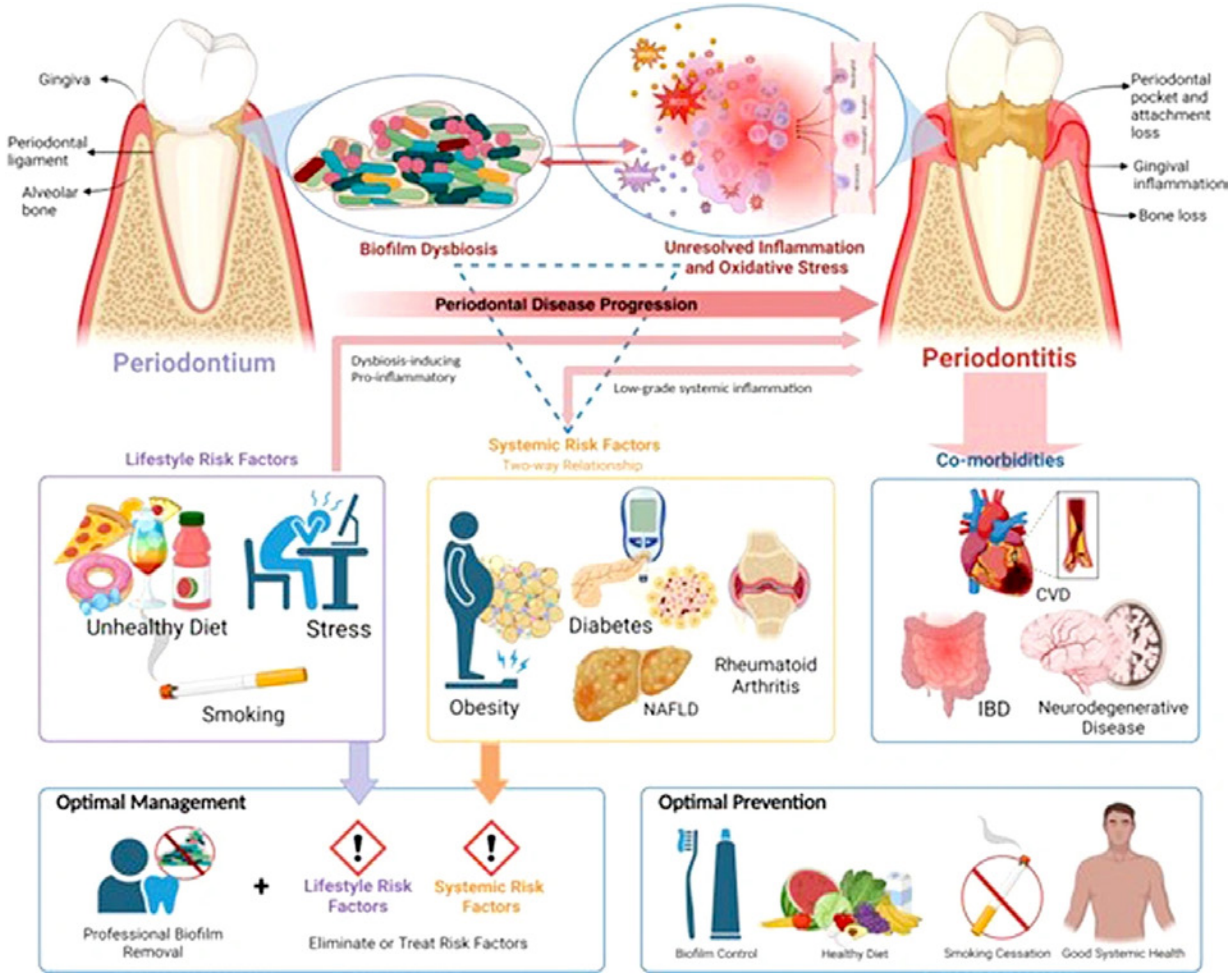


Figure 1. Periodontal Inflammation Overview

asthma as well as digestive disorders and gut dysbiosis.[18] As sugar has become embedded in ultra processed foods (UPF) and beverages, the over consumption of sugars in children and adolescent diets have promoted studies on the correlation between diet and long-term cognitive processes and hyperactivity disorders. The American Academy on Pediatrics recommends limits of less than 10% of total calorie intake of added sugars per day or less than 6 teaspoons. More than 70% of adolescent, in the form of SSB exceed the limit.[18] Key interventions to consider include regulate marketing of ultra processed foods and drinks to children and adolescents and introduce taxation policies on foods and drinks high in free sugars.[20]

Identifying Hidden Sugars in Foods

Foods naturally contain sugars such as fruit, milk, and vegetables like sweet potatoes and beets. These foods come with small quantities of sugar and contain fiber, protein, vitamins, minerals, and phytochemicals that do not affect blood sugars as drastically as free sugars. Added sugars often come with empty calories with little nutritional benefits.

The Nutrition Fact label was changed adding a line for added sugars, similar to total fat and saturated fat. The label allows individual to identify natural occurring sugars from added sugars and make comparisons in food products. In addition to added sugars, the food label includes the daily value for both vitamin D, important for bone health, and potassium, good for controlling blood pressure.[10] The bold font makes the label easier to read while highlighting the calories and serving sizes. In addition to the "added sugars" calculation, consumers will also want to be aware of the daily value of total carbohydrates.

Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving	
Calories 230	Calories from Fat 72
	% Daily Value*
Total Fat 8g	**12%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**12%**
Dietary Fiber 4g	**16%**
Sugars 12g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Figure 2. Previous Label

Nutrition Facts

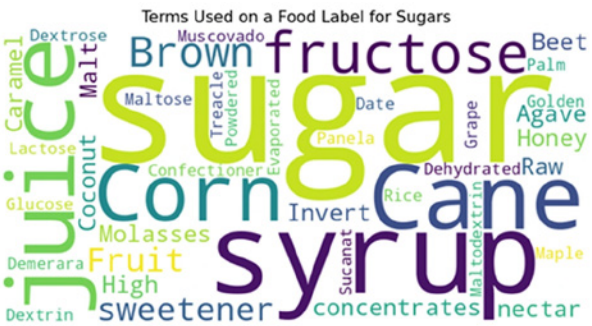
8 servings per container
Serving size **2/3 cup (55g)**

Amount per serving
Calories **230**

	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Figure 3. Current Label



Highlights of the Redesigned Food Label

- Serving sizes have been revised to match actual consumption patterns.
- Calories are in larger and bolder font.
- Calories from fat have been removed, as research shows the type of fat consumed is more important than the amount.
- Added sugars are included in grams and as a percentage Daily Value.
- Vitamin D and potassium are included in the list of nutrients, replacing Vitamins A & C.
- The label also includes footnotes explaining Daily Value.

Nutrition Facts labels are important tools for assisting individuals to select healthy foods. However, only 63 percent of adults understand how to interpret the % Daily Value and only 57 percent know to how tell when a food is "high" in a nutrient. This leads to less inclusiveness and more confusion for consumers with limited formal education.[17]

The Future of Food Labels

Today, more than a dozen countries require that manufactures print nutritional labels on the front of food packages.[16] The Food and Drug Administration is currently developing front-of-package nutrition labels (FOPNL) that could require companies comply as early as 2027. Research has determined that the most effective nutritional labels were those that interpreted information for consumers. Front facing package nutrition labels (FOPNL) is an opportunity to level the playing field and make the information more accessible and inclusive. Research demonstrates that economically disadvantaged Americans eat the most ultra-processed foods. FOPNL will give consumers basic nutrition information to compare products quickly. The labels would highlight when a food contains elevated levels of nutrients that are typically overconsumed, such as sodium, added sugars, and saturated fats in ultra-processed foods. (UPF) On average, adults consume 50 percent more sodium, 40 percent more added sugars, and 30 percent more saturated fat per day than recommend, contributing to the increased incidence of non-communicable diseases (NCD).[17] FOPNL will help make nutrition information more accessible to all consumer, resulting in healthier food choices and food supply. Below are examples of FOPNL under consideration by the FDA.[17] The "High In" scheme with explanation points, along with the "red, yellow, green" stop light scheme are scoring the best in experimental studies.[17]

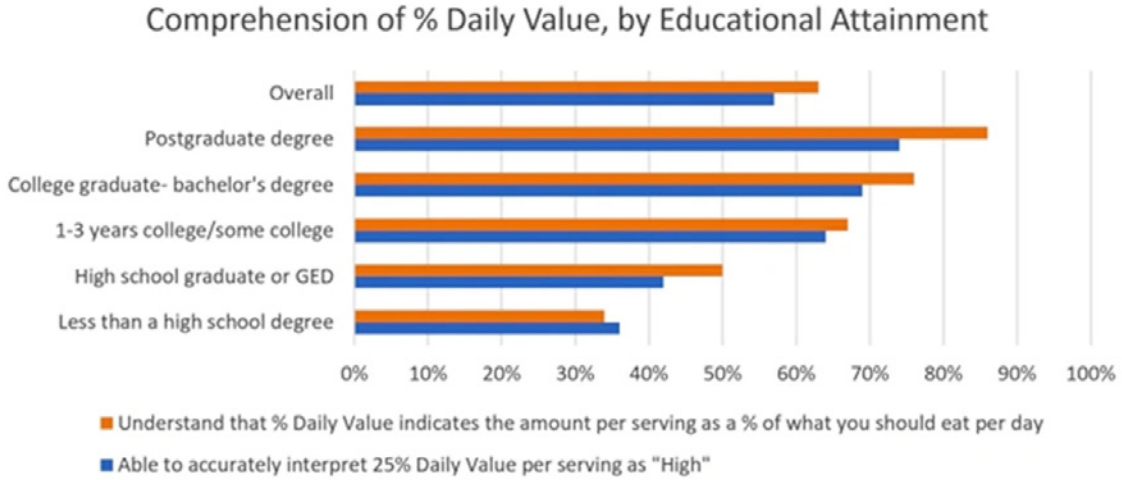


Figure 4. Graph by CSPI using data from FDA Food Safety and Nutrition Survey 2019[17]

Figure 5. Example label images with exclamation points created by CSPI (left). Others are FDA label images (middle and right)[17]

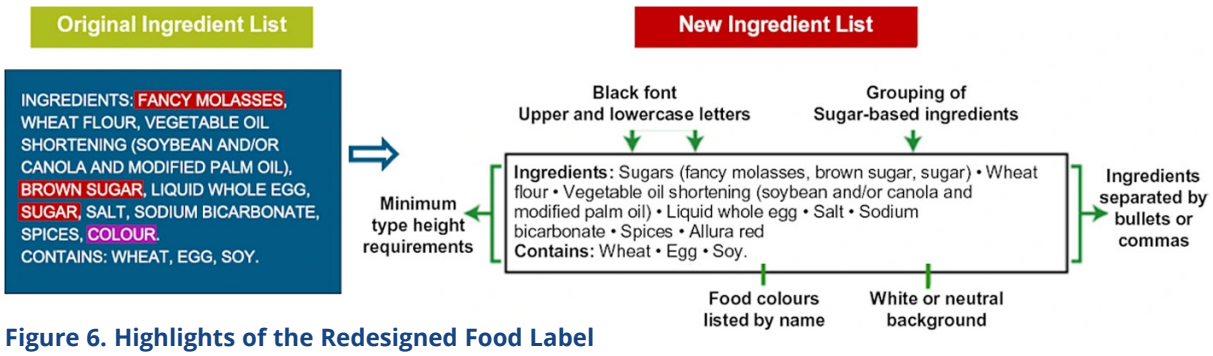


Figure 6. Highlights of the Redesigned Food Label

Free sugars hide under a number of assumed names, especially in ultra processed foods and beverages. Ingredients are listed in descending order by weight, so where sugar is listed in relation to other ingredients can indicate how much sugar a particular product contains.1 The higher it is located on the ingredient list, the more added sugar the product contains. Keep in mind there are also several sugar substitutes used in low-calorie products to provide sweetness, but with fewer calories. Examples include Aspartame, Xylitol and Stevia. However, studies indicate artificial sweeteners may negatively impact gut bacteria and metabolism.

Surprisingly Sweet

It is no surprise that chocolate, fizzy drinks, and baked goods have added sugars. But consumers are fooled by "healthy" sounding foods that contain added sugars to enhance flavor.

- **Granola cereal and bars:** these may look healthy and make for a quick breakfast option in the morning, but can contain as much sugar as a chocolate bar. You are better off mixing walnuts, almonds, or seeds with dried fruit for a quick and healthy breakfast option.
- **Salad dressing:** most people enjoy a salad to fulfill their daily vegetable requirement. But dressing like French, Thousand Island, and even oil-based dressing, claiming to be "low-fat," can contain 9-10 grams of sugar in two-tablespoons. The best option is to make your own dressing using olive oil, balsamic vinegar, and a squeeze of fresh lime or lemon or fresh herbs like garlic, chives or cilantro.
- **Flavored yogurt:** all yogurts contain sugar in the form of lactose, but flavored yogurts contain added sugars, often as high fructose corn syrup. The best option is to purchase plain Greek style yogurt and add a sprinkle of cinnamon or fresh berries.
- **Frozen vegetables and meals:** pre-packaged convenient foods can contain a surprising amount of both sugar and sodium, especially in sauces. Many have as much as 30-40 grams per serving of added sugars. Read labels carefully and choose sauce-free options when available.
- **Condiments:** adding sauces like barbecue, ketchup, mayonnaise, and Sriracha can account for 80% of the calories and twelve grams of sugar, not to mention the amount of sodium in these sweet and savory condiments. Better alternatives include hummus, mustard, and spicy sauce.

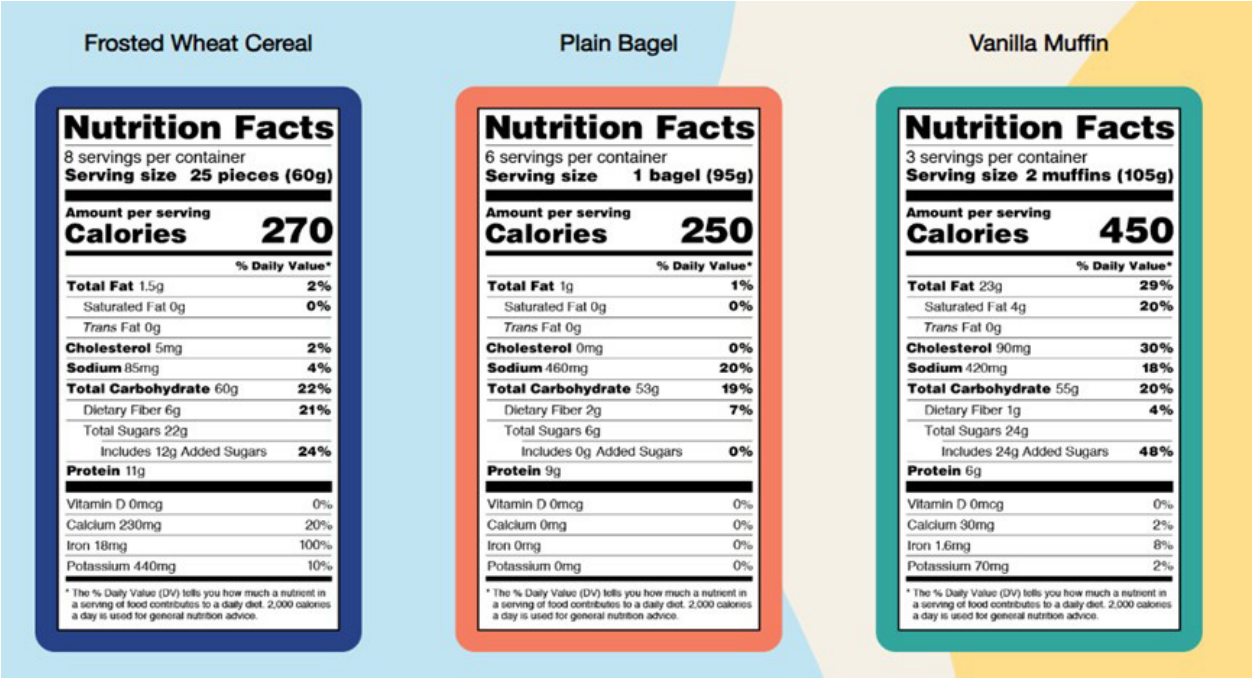
Product Comparison: Choose a Better Option

Reading food labels can be a daunting task while grocery shopping. Here are shortcuts that can help you choose the best options.

- Find the "plain" version of foods, yogurt, oatmeal, and crackers. Stay clear of foods with the label advertising "low-fat, low-calorie, fat-free." They typically have more added or artificial sugars.
- Consider a food scanning application (Yuka, Spoonful, Foodswitch) to determining if the product is a healthy option.
- Food labels using the terms "natural or organic" does not mean a food has less added sugar.
- Scan the ingredient list for "code words" for sugars; Sugars are listed by their weight.
- Check the "added sugars" line and the percentage Daily Value. 4 grams=1 teaspoon of sugar.
- Compare ultra processed foods (UPF) for the best option; even the same manufactured product in a different flavor may vary in sugar content.

Assess your knowledge:

Practice comparing the food labels by answering the corresponding questions below.

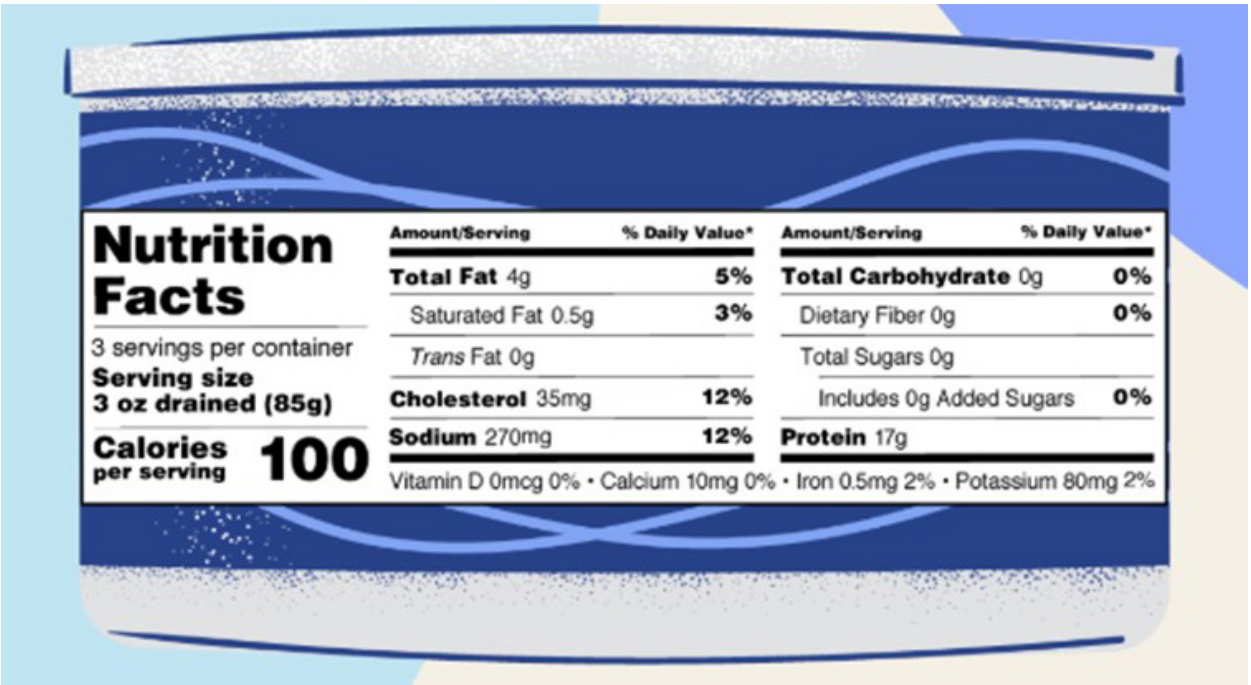


Which breakfast food has the highest source of added sugars?

A. Frosted Wheat Cereal

B. Plain Bagel

C. Vanilla Muffin



If you were to eat the entire can of tuna, how much saturated fat would you consume?

A. 1.0g

B. 1.5g

C. 2.0g

Ingredients: Sugars (fancy molasses, brown sugar, sugar) • Wheat flour • Vegetable oil shortening (soybean and/or canola and modfied palm oil) • Liquid whole egg • Salt • Sodium bicarbonate • Spices • Allura red
Contains: Wheat • Egg • Soy

Which of the following ingredients on the food label is most abundant?

A. Fancy Molasses

B. Wheat Flour

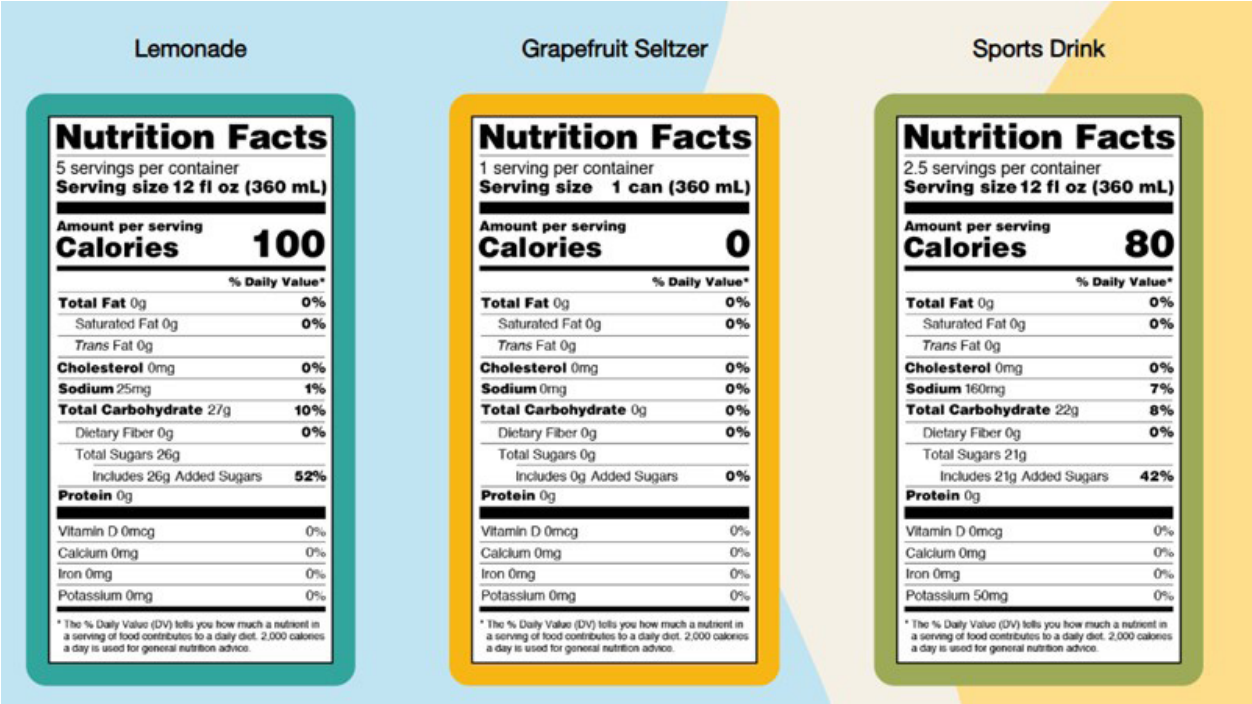
C. Sodium

If you were to eat three servings of peanut butter, what percentage daily value of added sugars would you be consuming?

A. 4% DV

B. 8% DV

C. 12% DV



If you were to eat the entire can of tuna, how much saturated fat would you consume?

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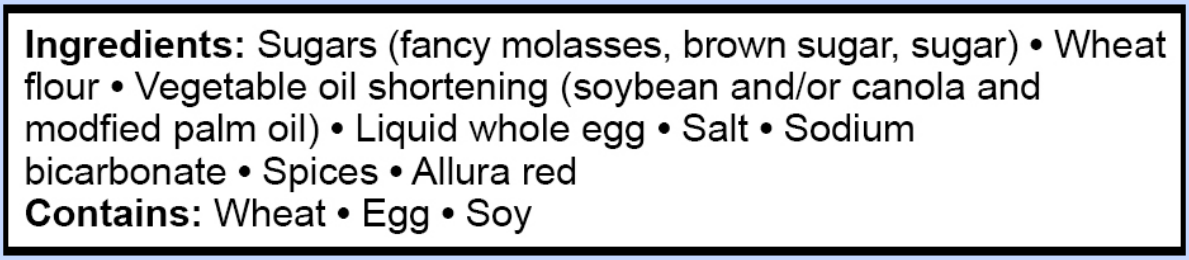

Which of the following ingredients on the food label is least abundant?

A. Salt

B. Spices

C. Allura Red

Healthcare Intervention & Patient Management

Building a supportive environment for interprofessional integrating among healthcare providers is a crucial first step in addressing non communicable diseases from a medical, social, and economic standpoint. Our role as healthcare providers includes;

- Provide nutritional counseling to our patients regarding the importance of diet and lifestyle.
- Monitor noncommunicable disease (NCD) risk factors, (neurodegenerative, type 2 diabetes, cardiovascular disease, chronic respiratory disease, and cancer), and assess the presence of comorbidities including mental health disorders.
- Focus on interprofessional collaborative efforts among healthcare professional for referral options.
- Support behaviors for children and adolescence; limit screen time, consumption of sugar sweetened beverages (SSB) and ultra processed foods, engage in physical activity, and increase consumption of whole foods.
- Endorse policies and actions that promote access to a healthy environment, health sector response, and food industry regulations.

Advancements in Technology

Continuous glucose monitors (CGM) have become increasing available and reliable to improve A1C levels in patients with type 1 and type 2 diabetes, reduce hypoglycemia events, and improve time in target glucose range. The CGM device, which is applied to the skin and synchronized to a smart phone, measures interstitial glucose levels in real-time, allowing a patient to monitor and make improvements in diet, see the benefits of physical activity on glucose levels, and reduce the number of finger sticks. Studies demonstrate it can empower the patient to take control of their health and improve A1C levels by monitoring glycemic variability.[12]

Consumer demand for nutritional information is increasing. Mobile applications like Yuka, Spoonful, and FoodSwitch help with production selection by providing detailed nutritional information. Scanning a foods barcode with these apps gives consumers essential insight, enhancing their knowledge and control over food purchases.[11] Take is an opportunity to try one of the food scanning apps.[1]

Sweets can be enjoyed in moderation but be mindful of added sugars in other parts of your diet, such as in drinks, breads, cereals, salad dressing, condiments, and sauces.

1. **Download the Yuka app to your smartphone.**

2. **Scan the three barcodes below.**
3. **Which beverage option is the heathiest?**
4. **The app provides both positive and negatives qualities of the product. Click the down arrow to see the sliding scale of calories, sugars, additives, saturated fat, sodium, protein, and fiber.**

611269174526
Red Bull Cranberry Energy Drink - 12 fl oz Can

739510002821
SoBe - Lifewater Water Beverage - Fuji Apple 20.00 fl oz

184739000040
Hint - Premium Essence Water - Raspberry-Lime 16.00 fl oz

- Energy drinks, soft drinks, and fruit juice are prime sources of liquid carbohydrates that contribute to extra calories and weight gain with little or no nutritional benefit. Instead, enjoy herbal teas or carbonated water with fresh lemon in place of fruit juices. Add a sprinkle of cinnamon to coffee in place of added cane sugar.
- Choosing whole, unprocessed foods, with a limited ingredient list, is one way to avoid consuming added sugars unintentionally. Whole fruit, steel-cut oats, plain Greek yogurt are healthier breakfast choices compared to ready-to-eat breakfast cereals, bars, and pastries, yet are still convenient.
- Avoid low-fat 'diet' foods which tended to be higher in sugar. Instead, consume smaller portions of the regular version.
- Balance your lean proteins and carbohydrates to help manage food cravings; consuming legumes, low-fat dairy and meats with whole grains can help slow digestion and improve satiety.
- Reduce sugar in recipes by adding spices to boost flavor while adding nutritional value; cinnamon, ginger, nutmeg, allspice, and vanilla all have additional health benefits.
- Snack on fresh fruit, nuts and seeds, string cheese or plain yogurt to balance blood sugar and energy levels.

Conclusion

In conclusion, hidden sugars in food products pose significant health risks, often contributing to non communicable diseases (NCD) such as oral disease, inflammatory conditions, obesity, diabetes, insulin resistance and non-alcoholic fatty liver disease. Children, adolescents, and economically challenged populations are the highest consumers of ultra processed foods (UPF) and sugar sweetened beverages (SSB). Children and adolescents are experiencing sleep, learning, and worsening emotional health problems. Sugars are frequently found in unexpected places, including foods marketed to specific target groups as healthy, making it critical for consumers to read labels carefully. Future front facing food labels, along with advancements in technology, may allow reading labels simplified for all individuals.

As healthcare providers, we play a vital role in educating our patients about the health risks associated with overconsumption of hidden sugars. By providing clear guidance on how to read food labels to make healthier choices, we can help our patients reduce their intake of free sugars, fats, and UPF and improve health outcomes. Our expertise and support are invaluable resources for those looking to make informed dietary decisions. Through interprofessional collaboration, we can work towards a healthier future for our communities.

Course Test Preview

To receive Continuing Education credit for this course, you must complete the online test. Please go to: *www.dentalcare.com/en-us/ce-courses/ce694/start-test*

1. Which does the FDA require manufactures to include on the nutrition label to help consumers identify hidden ingredients?

A. a line for total sugars.
B. a line for natural sugars.
C. a line for sugar substitutes.
D. The FDA does not require a line for added sugars.

2. Which type of sugar potentially places a person at greatest risk for non-communicable disease?

A. Maltose.
B. Lactose.
C. Cellulose.
D. High fructose corn syrup.

3. How many teaspoons of added sugars does the average adult consume daily?

A. 6 teaspoons.
B. 9 teaspoons.
C. 12 teaspoons.
D. 19 teaspoons.

4. What percentage of the US food supply is made up of ultra-processed foods (UPF)?

A. 35%
B. 60%
C. 73%
D. 82%

5. According to the WHO Global Health Status Report of 2022, oral disease prevalence is greater than the combined global prevalence for which of the following?

A. Infectious disease.
B. Non-communicable disease (NCD).
C. Mental health disorders.
D. Genetic disorders.

6. Which effect does sugar sweetened beverages (SSB) have on the oral microbiome?

A. Increases diversity of oral microbiome.
B. Increases dysbiosis of the oral microbiome.
C. Has no effect on the bacterial load.
D. Decrease the presence of streptococcus microorganisms.

7. The development and progression of periodontal inflammation is caused by dysbiosis of biofilm, the host response to inflammation and other mitigating systemic factors in the body.

A. True
B. False

8. Which statement(s) is/are correct regarding Early Childhood Caries (ECC)?

A. It links with other noncommunicable diseases (NCDs) in childhood.
B. It is characterized by microbiome dysbiosis.
C. It is the most common NCD among children around the globe.
D. All are correct statements regarding EEC.

9. Which is the best recommended course of action to address the rise in global obesity?

A. Individual dietary changes.
B. Increase in physical activity.
C. Multisectoral action involving environmental and societal change.
D. Medications and surgery.

10. What is the recommended maximum percentage of total calorie intake from added sugars?

A. 5%
B. 10%
C. 15%
D. 20%

11. How has the rate of obesity among adolescents changed since 1990?

A. Doubled.
B. Tripled.
C. Quadrupled.
D. No change has occurred in the rate of obesity in adolescents since 1990.

12. Which dietary pattern is associated with poor health outcomes due to its impact on gut microbiota diversity?

A. Mediterranean diet.
B. Western diet.
C. Vegetarian diet.
D. Ketogenic diet.

13. How does consuming excess sugars affect intestinal permeability?

A. Decreases intestinal permeability.
B. Increases intestinal permeability.
C. Maintains homeostasis.
D. Decreases gram negative microorganisms.

14. Ultra processed foods (UPF) are regarded as low Glycemic Index (GI) foods that reduce the inflammatory biomarker C-reactive proteins.

A. True
B. False

15. All the following are associated with non-alcoholic fatty liver disease (NAFLD) EXCEPT for one. Which one is the exception?

A. A diet low in glycemic load.
B. Reduced insulin resistance.
C. Bacterial overgrowth.
D. Changes in the gut-liver access.

16. What percentage of adolescents exceed the limit of six teaspoons of added sugars daily, in the form of sugar sweetened beverages (SSB)?

A. 25%
B. 50%
C. 70%
D. 80%

17. What is the intended outcome of front of package nutrition labels? (FOPNL)

A. Highlight sodium, added sugars, and saturated fats in ultra processed foods.
B. Make nutritional information more accessible and inclusive.
C. Allow consumers to compare basic nutrition information on products quickly.
D. All are intended outcomes for front of package nutrition labels (FOPNL).

18. How can continuous glucose monitors (CGM) help patients improve their diet?

A. By measuring cholesterol levels.
B. By showing real-time glucose level changes.
C. By increasing medication dosage.
D. By counting calories.

19. Why is interprofessional collaboration important in healthcare?

A. It reduces the need for patient referrals.
B. It limits the scope of practice for healthcare professionals.
C. It enhances referral option and improves patient outcomes.
D. It increases healthcare costs.

20. How are ingredients listed on a food label?

A. Alphabetically.
B. By nutritional value.
C. In descending order by weight.
D. In ascending order by weight.

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Additional Resources

- No Additional Resources Available

About the Author

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Diane Vernetti-Callahan is a dental hygiene faculty at Madison College, Madison, Wisconsin, since 2000. She received her BS degree from Marquette University and her MS degree from University of Wisconsin, Platteville. Diane was an associate professor at the University of Minnesota, School of Dental Hygiene, where she began her teaching career. She has a combined 30 years' experience in education and clinical practice with an interdisciplinary background in health and wellness. In addition to teaching, Diane is a regular contributor to Procter and Gamble's continuing education courses as well as a published author in ADHA Access magazine on the topic of Nutrigenomics. Diane is the Program Coordinator for "More Smiles Wisconsin" and a Board Advisor for Madison College Honors Program.

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