Oral Microbiome Report

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Date of Birth:	Subject ID: 30005
Gender: Female	Date: 10/30/2026

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NAME	DATE OF BIRTH	REPORT DATE	SUBJECT ID
		10/30/2026	30005

Summary

Diversity and balance

Richness 169.0
115 – 300

Shannon 5.2
4.25 – 7

Evenness 0.7
0.65 – 1

F/B ratio 1.19
0.2 – 1.7

Community composition

relative abundance



p Firmicutes	40.1%
p Bacteroidetes	33.8%
p Proteobacteria	14.6%
p Fusobacteria	6.3%
p Actinobacteria	3.1%

These 5 phyla cover 97.9% of the assigned reads in this sample.

On every scale above, the shaded band is the reference range for this population and the dot is this sample.

Community signals 22

59 taxa measured against the reference population

Protective taxa
1 of 10 outside reference
9 within reference, 1 increased

Associated taxa
17 of 44 outside reference
27 within reference, 15 increased, 2 decreased

Dominant phyla
4 of 5 outside reference
1 within reference, 3 increased, 1 decreased

Condition scores

a lower score is the more disease-associated result; lowest six shown

Periodontitis	14	low
Halitozis	33	normal-low
Bipolar Disorder	50	normal-low
Diabetes T2	57	normal-high
Gingivitis	58	normal-high
Chronic obstructive pulmonary disease	63	normal-high

0 30 55 80 100

Each value on this page is shown in full detail later in this report. Scores describe how closely this sample resembles published case cohorts and are not a diagnosis.

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Name **Gender** Female **Date of Birth** **Sample Type** Saliva **Report ID**

MICROBIAL COMPOSITION

Overview of All Bacteria

Firmicutes | Bacteroidetes | Proteobacteria | Actinobacteria | Verrucomicrobia

Overview Of All Bacteria

The rich and dynamic structure of the microorganisms residing in the oral cavity is of critical importance for understanding our dental health and related diseases. The human mouth hosts a diverse array of microorganisms, including bacteria, fungi, viruses, and protozoa. This oral microbiome, which inhabits distinct environments such as the teeth, gums, tongue, and cheeks, possesses a highly complex organization.

The balance of these microorganisms plays a key role in maintaining oral health. Beneficial microbes contribute to digestion, vitamin synthesis, and protection against pathogenic species. However, any disruption to this delicate ecosystem may lead to oral diseases such as dental caries, periodontal disorders, and halitosis.

Multiple factors influence this microbial balance, including diet, oral hygiene practices, genetic predisposition, and environmental exposures.

Explanation

Your oral microbiome is distinct and individualized. Just as every person has a unique fingerprint, each individual has a specific bacterial composition in their mouth. Streptococcus, Neisseria, Veillonella, Actinomyces, and Fusobacterium are some of the predominant bacteria in the human oral cavity. In this report, we will compare the bacterial composition in your oral environment with the reference population. It's crucial to understand that your values might differ from the general population because of the unique characteristics of your oral microbiome.

Microbiome Analysis Disclaimer

The presence, absence, or difference in abundance levels of a particular microorganism is not sufficient by itself for the diagnosis of a particular disease or disorder. This test is not an alternative to conventional methods used in the detection of bacteria species or their antibiotic sensitivity profiles. The microorganisms associated with health conditions are simply an indication of potential issues. The test results are not a diagnosis and should not be treated as such.

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Detailed Information

Microorganism	Population (%)	Result (%)	Your level
p Firmicutes	13.692 - 32.615	40.12259	**Increased**
p Bacteroidetes	49.467 - 73.383	33.75901	**Decreased**
p Proteobacteria	2.942 - 11.932	14.57706	**Increased**
p Fusobacteria	<0.0001	6.3319	**Increased**
p Actinobacteria	0.739 - 3.777	3.06937	Normal

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Firmicutes / Bacteroidetes (F/B) Ratio



Analysis

Your microbiome is well balanced. This means that the bacteria are evenly distributed.

Definition

The Firmicutes-Bacteroidetes ratio in the oral microbiome has become a significant focus of health research, particularly regarding its potential connection to obesity and metabolic health. Studies have found that obese individuals tend to have a higher Firmicutes to Bacteroidetes ratio, which may contribute to weight gain and metabolic problems. Conversely, a lower ratio is often observed in leaner individuals, suggesting a protective effect against obesity . One of the most critical factors influencing this ratio is diet. High-fat and high-sugar diets tend to increase the Firmicutes-Bacteroidetes ratio, while diets rich in fiber from fruits, vegetables, and whole grains appear to promote a lower ratio. This connection suggests that dietary choices can directly affect the balance of these bacterial groups and potentially impact body weight and metabolic health. By manipulating the Firmicutes-Bacteroidetes ratio through diet or other interventions, individuals may have a path to combating obesity and related diseases. Promoting a lower ratio, often associated with leanness and metabolic health, may allow individuals to take some control over their weight and overall health.

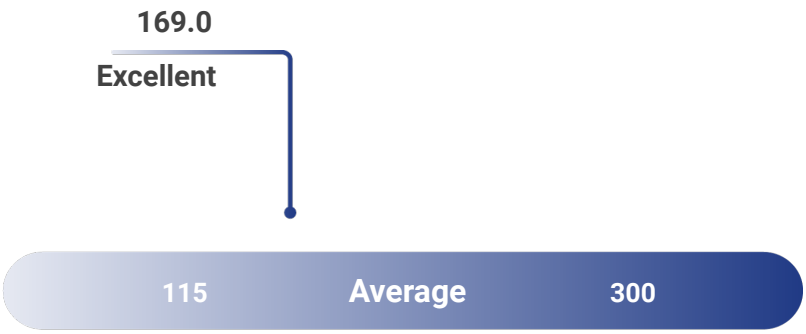
Note

You can increase the number of Bacteroidetes by changing your diet to one rich in fiber from sources such as flaxseed, legumes, and whole grains.

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Richness





Analysis

Your microbiome is well balanced. This means that the bacteria are evenly distributed.

Definition

Species richness within the oral ecosystem relates to the variety of bacterial species found and the broad spectrum of functions they can fulfill. This diversity in bacterial populations facilitates better oral health maintenance and bolsters the body's defense against oral diseases. However, a decrease in species richness within the oral microbiome can be associated with dental issues like cavities and gum diseases. Numerous lifestyle and environmental factors play a role in diminishing species richness, such as excessive consumption of sugary foods, poor dental hygiene, smoking, and certain medications. These factors can disturb the intricate balance of the oral microbiome, resulting in decreased bacterial diversity and potential repercussions for dental health.

Note

The enrichment of diet with insoluble fiber promotes microorganism diversity. Whole grain, rice, fruit, and vegetables contain loads of fiber.

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Evenness





Analysis

Your microbiome is well balanced. This means that the bacteria are evenly distributed.

Definition

Evenness of your oral microbiome denotes how uniformly various microorganisms are distributed in your mouth. Think of a lush garden where a diverse range of plants thrive, with no single plant overshadowing the rest. Similarly, in a mouth with balanced evenness, no single type of bacteria or microbe outcompetes the others. Each organism in the oral cavity has a unique role, from aiding in the breakdown of food particles to influencing oral health and potentially impacting overall systemic health. An optimally balanced oral microbiome ensures that no specific microbe unduly dominates, preventing dysbiosis—a state where the microbial balance becomes skewed.

Such balance is vital as an overabundance of certain bacteria can lead to oral health problems like cavities, gum disease, and bad breath. Conversely, a diverse and balanced oral microbiome is often linked with better oral health outcomes. The makeup of the oral microbiome is shaped by various factors. Diet, especially the consumption of sugary and acidic foods, plays a significant role, with certain foods fostering a more balanced microbiome. Lifestyle habits like oral hygiene practices, smoking, and alcohol consumption also impact the microbial balance. Moreover, external factors such as medications, particularly antibiotics, can significantly affect the oral microbiome's evenness.

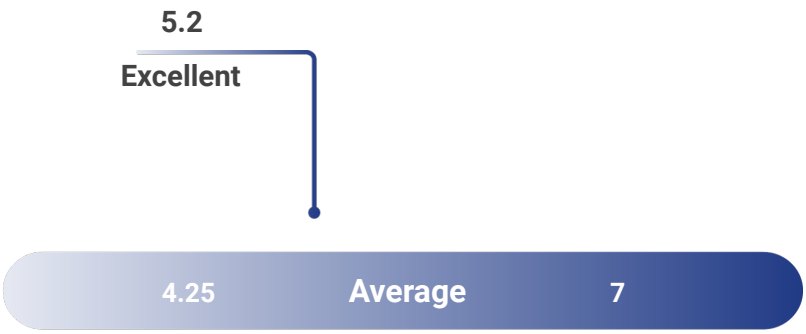
Note

Overall microbial diversity increases as a result of consuming probiotics, fermented foods, vegetables, and other healthy foods while reducing the intake of sugar, red meat, and processed foods.

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Diversity





Analysis

Your microbiome is well balanced. This means that the bacteria are evenly distributed.

Definition

This diversity in the oral microbiome plays a pivotal role in maintaining the equilibrium of this ecosystem. Much like a diverse forest, a varied oral microbial population can adeptly navigate disruptions, whether they arise from dietary shifts, oral hygiene habits, or medications. Additionally, a diverse oral microbiome is crucial for maintaining oral health, as specific microbes are adept at countering harmful pathogens. This diversity also aids in modulating the immune response within the oral cavity, training it to differentiate between benign and harmful microbes, which can impact oral conditions like gingivitis and periodontitis.

Emerging research is unraveling the fascinating interplay between the oral microbiome and wider health implications [17]. The diverse bacteria in the mouth can impact local inflammatory responses and produce compounds that interact with other body systems, highlighting the complex and interconnected relationship between the oral microbiome and systemic health. The significance of oral microbial diversity isn't limited to physical health; it has nuanced influences on various physiological processes, emphasizing its integral role in comprehensive well-being.

Note

The enrichment of diet with insoluble fiber promotes microorganism diversity. Whole grain, rice, fruit, and vegetables contain loads of fiber.

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Relationship Between Microbiome and Disease

Cardiovascular
Hypertension 9

Dental
Dental caries/cavities 12
Gingivitis 15
Halitozis 18
Periodontitis 21

Gastrointestinal
Inflammatory bowel disease 24

Mental Health
Bipolar Disorder 27
Depression 30

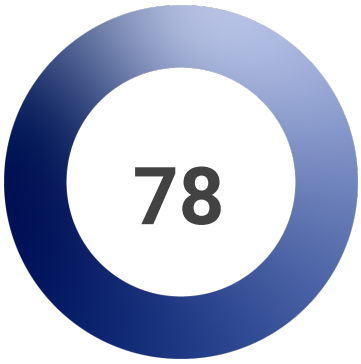
Metabolic
Diabetes T2 33

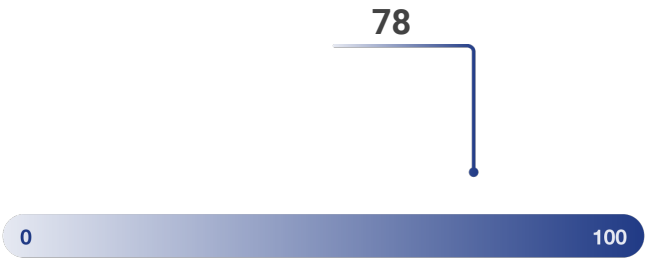
Musculoskeletal
Osteoarthritis 36
Rheumatoid arthritis 39

Respiratory
Chronic obstructive pulmonary disease 42
Chronic throat and nose inflammation 45

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Hypertension





Analysis

You have acceptable bacteria levels associated with hypertension.

Definition

Emerging research has begun to unravel the fascinating link between hypertension (high blood pressure) and the oral microbiome, the diverse community of microorganisms residing in our mouth. Preliminary studies suggest that oral bacteria may contribute to the pathogenesis of hypertension by influencing nitric oxide (NO) production, a critical molecule that regulates vascular dilation and consequently, blood pressure. Certain oral bacteria can convert dietary nitrates to nitrites, which the body can then use to produce NO. Disruptions to the oral microbiome, or dysbiosis, may therefore impair this pathway, potentially leading to hypertension [8]. Further, chronic periodontal disease, marked by an imbalanced oral microbiome, has been found to be more prevalent among hypertensive individuals, suggesting a potential association. These findings open an exciting avenue for potentially managing hypertension through strategies targeting oral health and microbial balance, though more extensive research is needed to fully understand the dynamics of this complex relationship.

Suggestion

A dietary approach with reduced salt and fat content is recommended. Consuming fermented foods rich in probiotics, fibrous foods with prebiotic properties, vegetables, whole grains, and foods containing plant-based oils will positively promote and maintain healthy bacteria.

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Hypertension

Associated Species

Species	Level

Associated Genus

Genus	Level
g Neisseria	Increased
g Veillonella	Normal
g Streptococcus	Normal
g Rothia	Increased
g Prevotella	Normal
g Fusobacterium	Normal

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Hypertension

Protective Species

Species	Level

Protective Genus

Genus	Level
g Leptotrichia	Normal
g Porphyromonas	Increased
g Haemophilus	Normal

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Dental caries/cavities





Analysis

Oral bacterial species scientifically associated with lowered risk for dental caries are at an excellent level!

Definition

The oral microbiome plays a pivotal role in dental caries, commonly known as cavities. Dental caries result from a shift in the balance of our oral microbiome towards harmful acid-producing bacteria. These bacteria, notably Streptococcus mutans, metabolize sugars from our diet and produce acids as a byproduct. When produced in excessive amounts, these acids demineralize the tooth enamel, the hard, outer layer of our teeth, leading to the formation of cavities [5]. However, a well-balanced oral microbiome can keep these harmful bacteria in check. Beneficial bacteria in our mouth can neutralize the acidic environment, produce protective compounds, and inhibit the adhesion of harmful bacteria to the teeth [6]. Moreover, some oral bacteria even contribute to the formation of dental biofilm, or plaque, which in moderate amounts can serve as a protective barrier against acid attack. Therefore, maintaining a healthy oral microbiome is a critical component of cavity prevention and overall dental health.

Suggestion

You might be considered at a low risk for dental caries. However, it's crucial to continue eating healthily to maintain cholesterol at an optimal level. This involves consuming foods that are low in saturated fats and rich in fiber and fresh produce. Maintaining a healthy weight and engaging in regular physical activity will help keep the risk of dental caries in check.

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Dental caries/cavities

Associated Species

Species	Level
s Streptococcus mutans	Normal
s Scardovia wiggsiae	Normal
s Streptococcus sobrinus	Normal

Associated Genus

Genus	Level
g Stomatobaculum	Normal
g Selenomonas	Normal
g Prevotella	Normal
g Porphyromonas	Increased

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Dental caries/cavities

Protective Species

Species	Level
s Streptococcus sanguinis	Normal
s Streptococcus gordonii	Normal

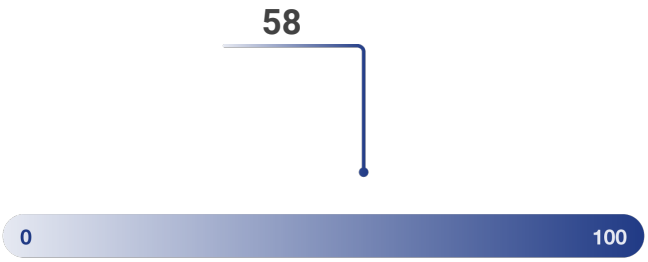
Protective Genus

Genus	Level
g Actinomyces	Normal

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Gingivitis





Analysis

The abundance of oral bacterial species associated with lowered risk of gingivitis is good.

Definition

Gingivitis, a common form of gum disease, shares a deep-rooted connection with the oral microbiome, the diverse ecosystem of bacteria within our mouths. While a balanced oral microbiome promotes dental health, a disruption in this biological community can drive the development of gingivitis. A healthy mouth typically houses beneficial bacteria that help protect against harmful pathogens. However, poor oral hygiene, certain dietary habits, or other risk factors can provide an opportunity for harmful bacteria to proliferate, outcompeting the beneficial species. These detrimental bacteria produce toxins and induce inflammation, leading to the reddening, swelling, and bleeding associated with gingivitis. Research also suggests that certain bacteria may create biofilms, a type of protective shield that allows them to adhere to gum tissue, evade our immune system, and establish a stronghold within the oral microbiome, thus perpetuating gum disease [1,2]. Thus, understanding and maintaining a balanced oral microbiome is crucial in preventing and managing gingivitis.

Suggestion

The oral microbiome is in good shape concerning gingivitis risk, but there's room for improvement. For this purpose, it's crucial to increase dietary fiber while maintaining a diet that regulates cholesterol. Reducing saturated fat has a significant effect on gingivitis. It's recommended to follow a diet that's low in fat and rich in polyphenols.

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Gingivitis

Associated Species

Species	Level
s Treponema denticola	Increased
s Prevotella intermedia	Normal
s Campylobacter rectus	Normal
S. Aggregatibacter actinomycetemcomitans	Increased
s Tannerella forsythia	Increased
s Porphyromonas gingivalis	Increased
s Fusobacterium nucleatum	Increased

Associated Genus

Genus	Level
g Peptostreptococcus	Normal
g Eubacterium	Normal

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Gingivitis

Protective Species

Species	Level
s Streptococcus sanguinis	Normal
s Streptococcus gordonii	Normal

Protective Genus

Genus	Level
g Actinomyces	Normal

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Halitozis





Analysis

Seems like your protective oral bacteria level is inefficiently associated with a halitozis. Help your oral microbiota to get better!

Definition

Halitosis, commonly known as bad breath, is a condition that can significantly impact an individual's social interactions and self-esteem. Its principal cause is the accumulation of volatile sulfur compounds (VSCs) produced by bacteria residing in the oral cavity, which illustrates the crucial role of the oral microbiome in this condition. The oral microbiome, a complex ecosystem of hundreds of microbial species residing in our mouths, maintains oral health by contributing to digestion, immune response, and preventing pathogen colonization. However, when the equilibrium of this microbiome is disrupted, potentially harmful bacteria can proliferate and create issues such as halitosis. These bacteria often thrive in low-oxygen environments, like the crevices of the tongue and deep gum pockets, where they metabolize proteins from food debris, dead cells, or saliva into VSCs [7]. These compounds, especially hydrogen sulfide and methyl mercaptan, are responsible for the unpleasant odor associated with halitosis. Therefore, maintaining a balanced oral microbiome through proper oral hygiene and regular dental visits can play a key role in preventing and managing halitosis.

Suggestion

Foods that are difficult to digest, fried and roasted dishes, deli products, fast food, foods high in saturated fats, and acidic beverages can trigger ulcers. Hot chili flakes, fried and roasted dishes, acidic beverages, caffeinated drinks, and spicy foods should be avoided. Factors like imbalanced nutrition, excessive alcohol consumption, eating unhygienic foods, and overeating can also trigger ulcers. Some foods, such as citrus fruits and those containing tomatoes, are naturally acidic. Even though they have beneficial effects on your health, they can intensify the symptoms of a halitozis. It has been established that deficiencies in vitamins or minerals can significantly hamper the healing of halitoziss. Therefore, it's essential to ensure that you're receiving an adequate intake of vitamins and minerals in your diet.

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Halitozis

Associated Species

Species	Level
s Treponema denticola	Increased
s Prevotella intermedia	Normal
s Tannerella forsythia	Increased
s Solobacterium moorei	Normal
s Porphyromonas gingivalis	Increased
s Fusobacterium nucleatum	Increased

Associated Genus

Genus	Level

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Halitozis

Protective Species

Species	Level

Protective Genus

Genus	Level

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Periodontitis





Analysis

The oral microbiome should be improved to support a healthier heart.

Definition

Periodontitis, a severe form of gum disease, is one such condition that arises from a disharmony in our oral microbiome. This disease, characterized by inflamed gums, bone loss, and eventually tooth loss, is driven by an unhealthy shift in the oral microbial community. Normally benign or beneficial microbes become overpowered by certain pathogenic bacteria, which thrive under disease-favoring conditions. A key culprit often associated with periodontitis is Porphyromonas gingivalis, a bacterium that skillfully evades our immune system and disrupts our oral microbiome's equilibrium. As scientists delve deeper into this microbial world in our mouths, we are beginning to understand the intricate connections between the oral microbiome, periodontitis, and overall health, shedding light on new strategies for prevention and treatment [3, 4].

Suggestion

You might be considered at risk for periodontitis. Still, the dietary approach to prevent periodontitis largely mirrors the principles of maintaining overall bodily health. The American Heart Association (AHA) recommends that those with periodontitis limit their consumption of saturated fats, cholesterol, and salt as much as possible. Caffeine should also be consumed sparingly. The diet should prioritize fruits, vegetables, whole grains, low-fat or fat-free dairy products, lean meats (mainly white meat), and nuts. These dietary recommendations align closely with the Mediterranean Diet. Thus, we can advocate the Mediterranean Diet as the most suitable dietary approach for those with periodontitis.

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Periodontitis

Associated Species

Species	Level
s Tannerella forsythia	Increased
s Treponema denticola	Increased
s Prevotella intermedia	Normal
S. Aggregatibacter actinomycetemcomitans	Increased
s Porphyromonas gingivalis	Increased
s Fusobacterium nucleatum	Increased
s Dialister invisus	Increased

Associated Genus

Genus	Level

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Periodontitis

Protective Species

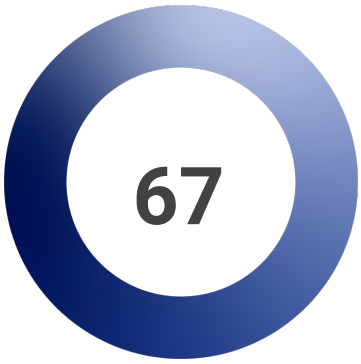
Species	Level

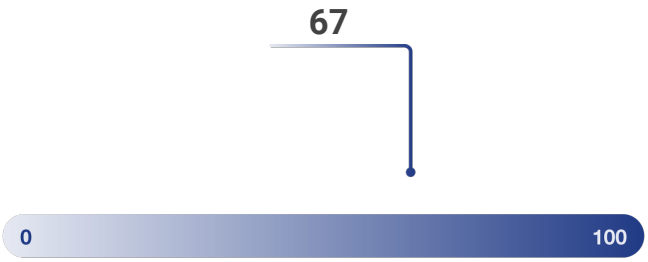
Protective Genus

Genus	Level

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Inflammatory bowel disease





Analysis

Looks like you have normal levels of oral bacteria associated with Chron's disease which can get better!

Definition

In the rapidly evolving field of microbiome research, the connection between oral microbiota and inflammatory bowel disease (IBD) has sparked considerable interest. IBD, including Crohn's disease and ulcerative colitis, has been associated with dysbiosis, or a disruption in the balance of the gut microbiome. Recent studies suggest that changes in the oral microbiome might mirror these alterations in the gut, signifying a potential systemic microbial interplay [10]. Certain harmful bacterial species, found in higher levels in the oral cavity of IBD patients, could trigger an inflammatory response, thereby potentially contributing to the pathogenesis and course of the disease. Additionally, the presence of oral ulcers and periodontal disease, both linked to oral microbiota imbalance, are common extra-intestinal manifestations in IBD patients. This novel area of research might pave the way for new diagnostic and therapeutic strategies in managing IBD, underlining the critical role of the oral-gut microbiome axis in your health.

Suggestion

The risk of developing Crohn's disease can be assessed as moderate. For overall oral health, the following recommendations can be considered:
Maintain a balanced diet with natural foods.
Avoid unnecessary use of antibiotics.
Steer clear of industrially produced artificial foods and those containing chemical additives, as well as foods that might harm the oral microbiota.

Additionally, be cautious about factors that might trigger Crohn's disease, such as:
Smoking and alcohol consumption.
Use of rheumatoid drugs and aspirin.
Hormonal changes.
Infections.
High levels of stress.

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Inflammatory bowel disease

Associated Species

Species	Level

Associated Genus

Genus	Level
g Neisseria	Increased
g Haemophilus	Normal
g Fusobacterium	Normal
g Campylobacter	Increased

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Inflammatory bowel disease

Protective Species

Species	Level

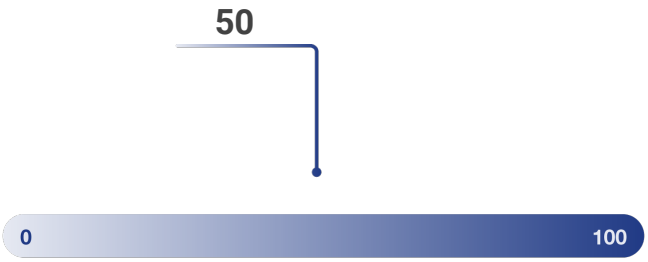
Protective Genus

Genus	Level
g Streptococcus	Normal
g Bacteroides	Normal

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Bipolar Disorder





Analysis

Oral bacterial composition has no positive or negative correlation with bipolar disorder. You ought to raise your level.

Definition

Bipolar disorder is a complex condition characterized by mood swings, changes in energy levels, and atypical behavior. Recently, potential links between the oral microbiome and the pathogenesis of psychiatric disorders, especially bipolar disorder, have begun to attract the attention of the scientific community [11]. The oral microbiome, the community of microorganisms found in the mouth, is one of the richest microbial habitats in our body and contains important interactions that may play a role in the development of both local and systemic diseases. Research shows that oral microbiome imbalances can affect the central nervous system through systemic inflammation, which may be a risk factor for psychiatric diseases.

Suggestion

Our intestines maintain a close relationship with our brain. Healthy eating habits, a consistently functioning digestive system, and a strong oral structure can have a positive impact on our mood. Omega-3 fatty acids, folic acid, and vitamin B are vital for safeguarding mental health. It's advisable to reduce the consumption of processed and refined foods. This means opting for whole grain breads over white bread, brown rice instead of white rice, and choosing pasta made from whole wheat or bran flour. It's also best to limit the intake of ready-to-eat foods containing refined sugars whenever possible.

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Bipolar Disorder

Associated Species

Species	Level
S. Aggregatibacter actinomycetemcomitans	Increased
s Porphyromonas gingivalis	Increased

Associated Genus

Genus	Level
g Lactobacillus	Normal
g Bifidobacterium	Normal

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Bipolar Disorder

Protective Species

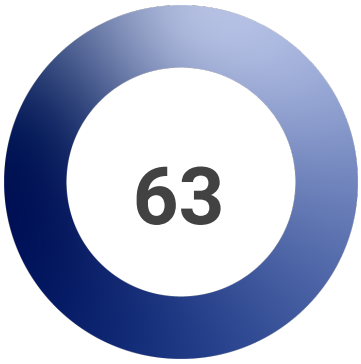
Species	Level

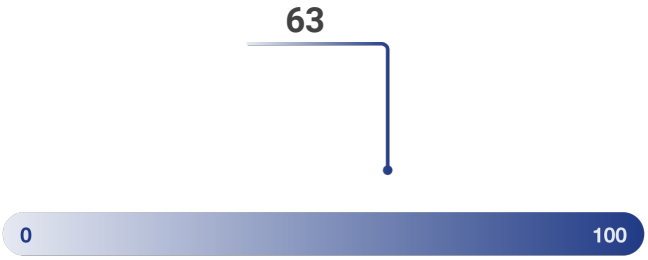
Protective Genus

Genus	Level

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Depression





Analysis

It is neither beneficial nor bad to have this level of oral microorganisms associated with depression. It would help if you raised your microbial level.

Definition

An exciting frontier in neuroscience is the exploration of the links between the oral microbiome and mental health, an association that's gradually emerging from a multitude of recent studies. The oral microbiome, a complex ecosystem of microorganisms living in our mouths, interacts with our bodies in ways we're just beginning to understand, and its role in mental health conditions like anxiety and depression is proving to be crucial [12]. For instance, specific bacterial species such as Porphyromonas gingivalis and Prevotella intermedia, often associated with periodontal disease, have been found in greater amounts in people experiencing depression and anxiety. The proposed mechanism involves the body's inflammatory response to these harmful bacteria. Inflammation triggers the production of certain cytokines that can cross the blood-brain barrier and induce changes in neurotransmitter function, potentially leading to mood and anxiety disorders. Furthermore, these bacteria produce metabolites that can affect brain health directly. Conversely, stress and anxiety can also alter the oral microbiome, creating a detrimental feedback loop. This body of research underscores the importance of oral hygiene not only for physical health but also for maintaining mental well-being.

Suggestion

Daily attention should be paid to the intake of vitamins B, C, D, and magnesium. Vitamin B can be met through grains like wheat, bulgur, and lentils; while vitamin C can be sourced from foods like oranges, kiwi, lemon, broccoli, and bell peppers. Vitamin D needs can be met through sun exposure and foods such as fish, milk, and eggs. Magnesium can be obtained from foods like cocoa, sunflower seeds, bran, almonds, and flax seeds. Consuming protein-rich foods like chicken, fish, eggs, kidney beans, hazelnuts, and peanuts can increase the production of serotonin, which in turn may reduce symptoms of depression. Emphasis should be placed on consuming antioxidant-rich foods like tomatoes, broccoli, blackberries, black grapes, garlic, and spinach. The amount of omega-3 can be increased with foods such as fish, nuts, almonds, walnuts, pumpkin seeds, flax seeds, purslane, and spinach.

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Depression

Associated Species

Species	Level
s Prevotella nigrescens	Increased

Associated Genus

Genus	Level
g Veillonella	Normal
g Neisseria	Increased
g Mitsuokella	Increased
g Lactobacillus	Normal
g Bifidobacterium	Normal
g Bacteroides	Normal
g Actinomyces	Normal

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Depression

Protective Species

Species	Level

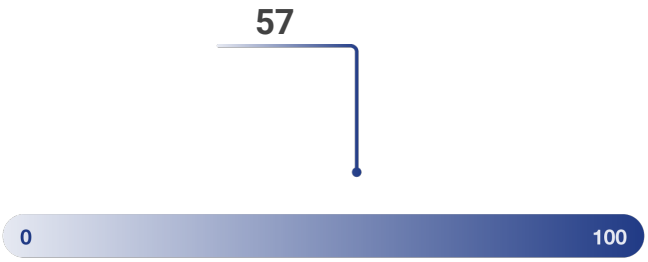
Protective Genus

Genus	Level

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Diabetes T2





Analysis

The abundance of oral bacteria associated with lowered risk of diabetes T2 is acceptable.

Definition

Emerging research has begun to shed light on the intriguing association between type 2 diabetes and the oral microbiome - the vast ecosystem of microorganisms residing in our mouth. Individuals with type 2 diabetes often exhibit significant alterations in their oral microbiome composition, characterized by an increased prevalence of certain pathogenic bacteria and a reduction in beneficial ones. The consequence of such an imbalance, known as dysbiosis, is thought to not only escalate the risk for oral infections and periodontal disease - a common complication in diabetes - but also potentially exacerbate blood glucose control, creating a complex, bi-directional relationship [9]. By contributing to inflammation and insulin resistance, an unbalanced oral microbiome may reinforce the metabolic dysregulation seen in type 2 diabetes. As we uncover more about this intricate relationship, strategies aimed at modifying the oral microbiome could represent a novel therapeutic pathway for managing type 2 diabetes and improving overall health

Suggestion

Your risk for developing diabetes may be considered moderate. Maintaining a healthy metabolism and keeping the risk of diabetes low throughout life remains essential. It's vital to adopt a healthy lifestyle overall. The three primary recommendations remain the same: regular exercise, a healthy diet, and lifelong weight management. Individuals in the moderate risk group should heed the following dietary advice:
- Limit refined sugar consumption.
- Consume foods rich in saturated fats and cholesterol, like meat, milk, yogurt, cheese, and eggs, only in specific amounts.
- Opt for smaller, more frequent meals.

For a healthy diet, foods containing the following nutritional components should be consumed in adequate amounts and in a balanced manner within meals:

- Carbohydrates (grains, flour-based foods, legumes, potatoes, vegetables, fruits, milk, yogurt)
- Protein (meat, eggs, cheese, milk, yogurt)
- Fats (oils and foods like meat, eggs, cheese, milk, and yogurt that contain fats)
- Vitamins and Minerals (primarily from vegetables and fruits, but also from all foods)
- Fiber (vegetables, fruits, whole grains)

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Diabetes T2

Associated Species

Species	Level
s Porphyromonas gingivalis	Increased
s Treponema denticola	Increased
s Prevotella intermedia	Normal
s Tannerella forsythia	Increased

Associated Genus

Genus	Level

Phenome Longevity

Diabetes T2

Protective Species

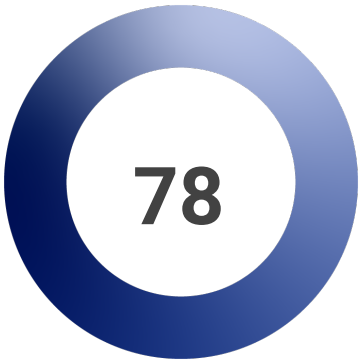
Species	Level

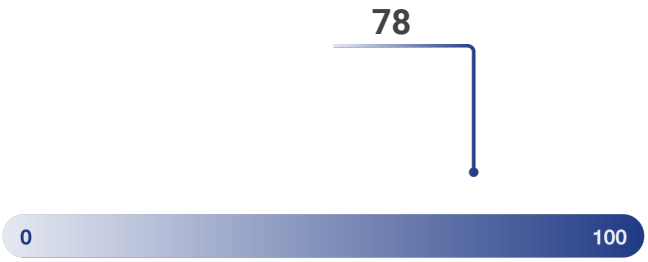
Protective Genus

Genus	Level
g Veillonella	Normal
g Streptococcus	Normal
g Actinomyces	Normal

Phenome Longevity

Osteoarthritis





Analysis

Bacteria in your mouth related to osteoarthritis is in limited values. take action to protect your level.

Definition

Osteoarthritis (OA) is a degenerative joint disease characterized by the breakdown of joint cartilage and underlying bone, most commonly affecting the hands, knees, hips, and spine. While OA is primarily related to aging and wear and tear on the joints, systemic inflammation may exacerbate the condition. Although OA is not typically associated with the upper respiratory system, recent studies have suggested that systemic inflammation, including that which affects the nose and throat, could have a broader impact on overall health, including joint health [15].

The oral microbiome, with its diverse population of bacteria, has been implicated in various systemic inflammatory conditions. If the microbiome is out of balance, it may contribute to a state of chronic inflammation, potentially affecting distant sites such as joints. While direct associations between the oral microbiome, nose inflammation, and OA are not as established as those for other conditions like rheumatoid arthritis, the interplay between systemic inflammation and joint health is a subject of ongoing research. It is hypothesized that the inflammatory mediators from chronic oral and nasal inflammation could contribute to the inflammation seen in OA.

Suggestion

Regular intake of fish oil, along with a diet rich in olives and olive oil, has protective effects on joint and bone structure, working primarily through antioxidant mechanisms. The consumption of antioxidant vitamins, especially when there's sufficient intake of vitamin D, may lower the risk of osteoarthritis. Vitamin D, calcium, and collagen all play supportive roles in maintaining joint health and might help in reducing the risk of developing osteoarthritis. Essential minerals, primarily calcium, but also magnesium, phosphorus, and zinc, alongside vitamins D, K, and C, contribute to the formation of collagen.

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Osteoarthritis

Associated Species

Species	Level
s Ruminococcus gnavus	Normal
s Rothia dentocariosa	Normal

Associated Genus

Genus	Level
g Abiotrophia	Normal
g Oribacterium	Decreased
g Streptococcus	Normal
g Rothia	Increased
g Lautropia	Normal
g Granulicatella	Increased
g Actinomyces	Normal

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Osteoarthritis

Protective Species

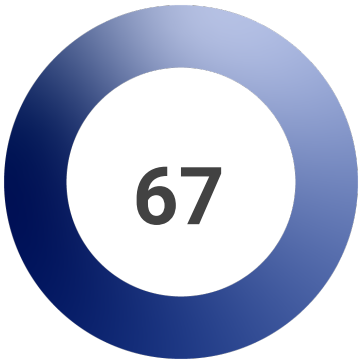
Species	Level

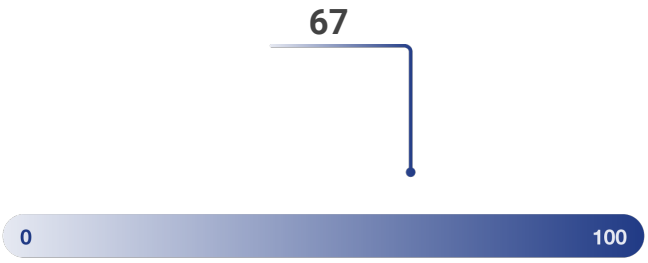
Protective Genus

Genus	Level

Phenome Longevity

Rheumatoid arthritis





Analysis

The bacterial content in your oral flora that causes rheumatoid arthritis is not bad, but the level should be higher.

Definition

Rheumatoid arthritis (RA) is a chronic inflammatory disorder that primarily affects joints but can also impact other systems, including the skin, eyes, lungs, and blood vessels. The exact cause of RA remains unknown, but it is understood to involve a complex interaction between genetic and environmental factors, leading to an autoimmune response where the body's immune system mistakenly attacks its own tissues. Among the environmental factors, the oral microbiome has gained attention for its potential role in influencing the development and progression of RA.

Several studies suggest that dysbiosis, or the imbalance of these microbial communities, can contribute to RA pathogenesis [13]. Specifically, the bacterium Porphyromonas gingivalis, which is known to cause periodontitis, has been linked to RA. It produces an enzyme called peptidylarginine deiminase which can citrullinate proteins, a process implicated in the production of autoantibodies characteristic of RA. Furthermore, other oral pathogens have also been associated with increased inflammation and may contribute to the disease process in RA.

Suggestion

For those in the medium-risk group concerning rheumatoid arthritis, anti-inflammatory nutrition is vital. It's advisable to steer clear of sugar, trans fats, artificial sweeteners, and processed foods. A diet rich in Omega-3 fatty acids is essential. Due to the anti-inflammatory effects of Omega-3 fatty acids, the immune system is bolstered. Seafood, in particular, as well as flaxseeds, chia seeds, purslane, and walnuts, are rich in Omega-3. A collagen-rich diet is also recommended. Collagen foods, like beef-bone-chicken broth, play a role in repairing the gut. It has been observed that the casein proteins in milk and dairy products might exacerbate arthritis symptoms. Therefore, individuals with arthritis should limit their intake of milk and dairy products. In addition to dietary guidelines, incorporating certain supplements can help prevent inflammation. Supplementation with vitamin D, iron, calcium, Omega-3, and vitamin C might be beneficial.

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Rheumatoid arthritis

Associated Species

Species	Level
s Alloprevotella tannerae	Normal
S. Aggregatibacter actinomycetemcomitans	Increased
s Porphyromonas gingivalis	Increased
s Neisseria subflava	Normal

Associated Genus

Genus	Level
g Veillonella	Normal
g Prevotella	Normal
g Neisseria	Increased
g Haemophilus	Normal
g Fusobacterium	Normal

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Rheumatoid arthritis

Protective Species

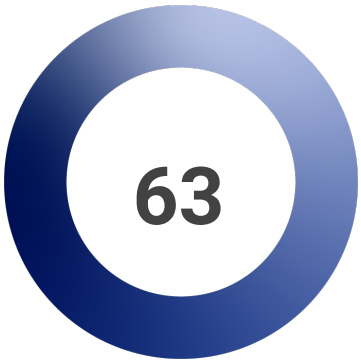
Species	Level

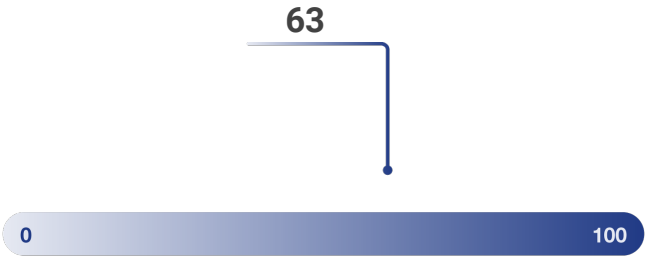
Protective Genus

Genus	Level

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Chronic obstructive pulmonary disease





Analysis

Your oral bacteria associated with COPD are good, but it would be good to improve your score.

Definition

Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease characterized by increasing breathlessness, frequent coughing, and exacerbated lung infections. The disease encompasses conditions such as emphysema and chronic bronchitis, with smoking being the most common cause. However, researchers have also turned their attention to the role of the oral microbiome in COPD, investigating how it may influence the disease's development and progression. The oral cavity can act as a reservoir for respiratory pathogens; when the oral microbiome is disturbed, it may increase the risk of pathogen colonization in the lungs, potentially leading to pulmonary infections which can worsen COPD.

The hypothesis that oral health may be linked to COPD is supported by observations that poor oral hygiene and periodontal disease are more common in individuals with COPD [16]. Pathogens associated with periodontal disease, such as Porphyromonas gingivalis, have been found in the lungs of COPD patients, suggesting that inhalation of oral pathogens could contribute to lung inflammation. Furthermore, inflammation in the oral cavity can lead to the release of pro-inflammatory cytokines into the saliva and respiratory tract. These molecules can potentially trigger or exacerbate the inflammatory processes in the lungs that are characteristic of COPD. This association underscores the importance of oral health in the context of respiratory diseases and suggests that oral microbiome management could become part of comprehensive COPD care strategies.

Suggestion

For individuals with a moderate risk of developing COPD (Chronic Obstructive Pulmonary Disease), the following recommendations can be made:
Consume a limited amount of carbohydrates, and when you do, opt for complex carbohydrates like legumes, whole grains, oats, and buckwheat.
While increasing fat intake, it's essential to choose healthy fats such as coconut oil, avocados, olive oil, and fatty seeds.
Prioritize the consumption of protein, which is a crucial part of a healthy diet. Regularly consume healthy protein sources like meat, chicken, turkey, fish, eggs, and cheese.
Dark leafy greens, arugula, asparagus, beets, potatoes, bananas, oranges, apples, pumpkin, turmeric, tomatoes, cocoa, blueberries, and yogurt are foods that support respiratory function.
Vitamins like A, C, and E have antioxidant properties which are known to protect lung health and improve breathing functions.
Vitamin D supplement is also recommended.

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Chronic obstructive pulmonary disease

Associated Species

Species	Level
s Capnocytophaga sputigena	Increased
S. Aggregatibacter actinomycetemcomitans	Increased

Associated Genus

Genus	Level
g Moraxella	Increased
g Catonella	Decreased
g Streptococcus	Normal
g Haemophilus	Normal

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Chronic obstructive pulmonary disease

Protective Species

Species	Level

Protective Genus

Genus	Level
g Veillonella	Normal
g Prevotella	Normal

Phenome Longevity

Chronic throat and nose inflammation





Analysis

Your oral flora has the perfect balance of bacteria for treating chronic throat and nose inflammation.

Definition

Chronic inflammation of the throat and nose, often manifesting as chronic rhinosinusitis or pharyngitis, can significantly impact a person's quality of life, leading to persistent discomfort, breathing difficulties, and other systemic symptoms. The causes of such chronic inflammation are multifactorial, with potential triggers including allergies, environmental irritants, and underlying health conditions. However, recent research has begun to explore the connection between the oral microbiome — the complex community of microorganisms in the mouth — and chronic inflammation in the upper respiratory tract[14].

The oral microbiome's influence on throat and nose health is an emerging area of study. The mouth serves as a gateway to the respiratory tract, and an imbalance or dysbiosis in the oral microbiome can lead to the translocation of pathogenic bacteria to the throat and nasal passages. This can provoke an immune response, resulting in inflammation. Furthermore, certain oral bacteria can produce biofilms that resist normal clearance mechanisms, thereby sustaining inflammatory states. These insights suggest that maintaining a healthy oral microbiome might be an important component in managing or preventing chronic inflammation in the nose and throat, opening avenues for new treatments that include microbiome-modulating therapies.

Suggestion

During periods when viral infections are prevalent, drinks made from turmeric, ginger, and linden (with honey added if there are no health contraindications) can be consumed as teas. Due to their healing, antiseptic, and anti-inflammatory properties, these can potentially act as protective agents.

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Chronic throat and nose inflammation

Associated Species

Species	Level

Associated Genus

Genus	Level
g Staphylococcus	Normal
g Corynebacterium	Normal

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Chronic throat and nose inflammation

Protective Species

Species	Level

Protective Genus

Genus	Level
g Bacteroides	Normal
g Prevotella	Normal

Phenome Longevity

Dictionary

Microbiome

The microbiome is the community of microorganisms (including fungi, bacteria, and viruses) that live in a specific environment. This term is often used to describe the bacteria living in or on specific parts of the human body, such as the skin or the digestive tract. These microorganisms are dynamic and respond to a wide range of environmental factors, including exercise, diet, medications, and other stimuli.

Metagenomics

Metagenomics refers to the study and investigation of the structure and function of all nucleotide sequences obtained from all microorganisms (mainly bacteria) in a sample. Metagenomics is often used to study a specific microbial community, such as those found on human skin, in soil, or in water.

DNA Sequencing

DNA sequencing is a laboratory technique that precisely determines the sequence of nucleotides in a DNA molecule. Some sequences encode the biological information used by cells to grow and function. The order of these bases encodes the biological information that cells use to grow and function. Identifying the roles of genes and other elements in the genome depends on determining the DNA sequence. Currently, there are several alternative techniques for DNA sequencing, each with its own unique characteristics; developing new methods is an active area of genomics research.

Next-Generation DNA Sequencing (NGS)

The term 'Next-Generation DNA Sequencing' refers to next-generation DNA sequencing technologies, which became widely available shortly after the completion of the Human Genome Project. NGS is more efficient and cost-effective compared to previous technologies.

Shotgun Sequencing

Shotgun sequencing is a technique used in laboratories to determine the nucleotide sequence of an organism's genome. This process involves randomly breaking the genome into small pieces of DNA, each of which is individually sequenced. Computer software searches for overlapping DNA sequences and uses these sequences to piece the genome back together in the correct order.

Precision Medicine

Precision medicine, also known as personalized medicine, is a new approach that combines information about an individual's genetic, environmental, and lifestyle factors to guide medical care decisions. The goal of precision medicine is to more accurately prevent, diagnose, and treat diseases.

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Microbiome-Disease Relationship

The human oral microbiome has been associated with various health issues, but comparing these effects across different disorders has been limited. A recent meta-analysis discovered that some oral microbiome relationships are common across many disorders, although comparisons between studies are inevitably constrained by experimental and analytical differences.

Species

A species is a group of bacteria that are genetically and/or phenotypically much more similar to each other compared to other bacterial communities.

Genus

A genus is a generic name that includes species closely related to each other.

Bioinformatics

Bioinformatics is a scientific discipline related to genetics and genomics that involves using computer technology to collect, store, and analyze biological data and information. Databases that organize and index such biological information are critical in health and disease research, and are also used by scientists and doctors to improve medical treatment.

About Us

At Phenome Longevity, we leverage cutting-edge technology and comprehensive data analysis to unlock the full potential of the human oral microbiome. After obtaining high-quality genomic DNA, our process continues with Shotgun Next-Generation Sequencing (NGS), which offers superior coverage and sensitivity. The resulting data is analyzed using advanced algorithms that precisely characterize your bacterial microbiome, and our team of bioinformatics experts and medically trained professionals performs rigorous statistical analysis to evaluate the results. This integrated approach empowers you with actionable insights for informed health decisions.

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