



# Behind Your Smile

From teeth to toes, a revealing look at what a healthy smile says about the health of the rest of our body

In collaboration with  
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**Dr Megan Rossi**



Smiling is good for you! From improving mood and reducing stress, there's a host of research<sup>1</sup> which shows the health benefits associated with smiling.

Thankfully, it is often the little things which can brighten up our day and turn our frowns upside down - whether it's a smiley stranger in the street, hearing a baby giggle, the food we eat, or even coming across a silly meme.

# What's in a smile?

The average adult will encounter **11 things a day** that make them beam



## Top 10 things which make Brits smile



Spending time with family



Seeing an old friend



Waking up to sunshine



Getting a surprise from someone



Making someone else smile



Spending time in the great outdoors



Finding money in your pocket you didn't know you had



Eating your favourite meal



Getting a bargain



Hearing a joke

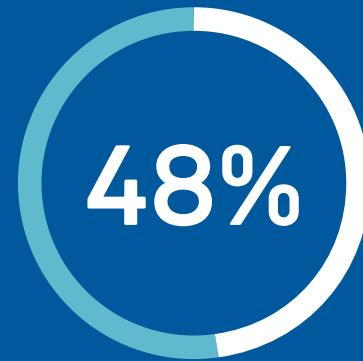
<sup>1</sup><https://www.waldenu.edu/online-bachelors-programs/bs-in-psychology/resource/the-power-of-smiling>

But do you know the many other ways in which our smiles are linked to our wellbeing?

While most people know that poor oral health can lead to cavities and tooth decay, many are unaware that our teeth and gums can reveal a raft of underlying health conditions.

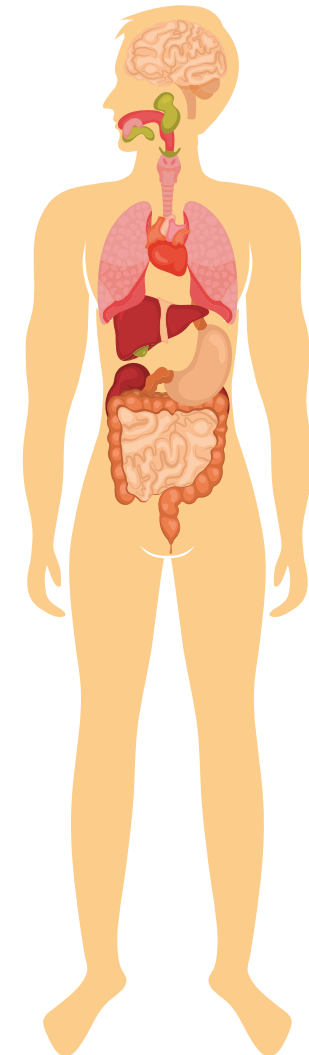
What's more, poor dental hygiene can have unexpected health consequences, possibly leading to increased risk of conditions such as diabetes, arthritis and even heart disease.

That's why keeping your smile in tip top shape is so important!



of people are unaware that **poor oral hygiene** has been linked to **long-term health conditions**

Here we take a revealing look **behind the smile** to explore what a healthy smile says about the health of the rest of our bodies...







**Amanda Sheehan**  
Dental Therapist and  
Clinical and Educational  
Support Specialist at TePe

## Healthy smile, healthy body

Just like regular exercise and eating a balanced diet, looking after your teeth and gums is an essential part of a healthy lifestyle.



 Made in  
Sweden



## But what does a healthy smile look like?

Healthy gums are pale, pink, and fit firmly around each tooth. Healthy teeth are intact and show no signs of tooth decay.

If plaque (the sticky film of bacteria that forms on the teeth) is left to accumulate around the tooth, it causes gum inflammation (gingivitis), one of the most common diseases in the world.

Signs of gum inflammation include redness and swelling, and the gums may bleed when you clean your teeth.

The good news is, with proper oral hygiene gingivitis can be reversed, and your gums will return to a healthy state.



Regular tooth brushing can only clean up to **60% of the tooth surfaces**. An interdental brush cleans the areas where your **toothbrush can't reach**



Without treatment, gingivitis can develop into periodontitis, that can affect the supporting bone and lead to potential tooth loss.

**“A YouGov survey in 2017 found only 31% of people say they clean between their teeth on a typical day<sup>2</sup>. However, dental professionals recommend cleaning between the teeth everyday with floss or interdental brushes.”**

Amanda Sheehan, Clinical and Educational Support Specialist at TePe

Unfortunately, evidence is starting to point to periodontitis being linked to other conditions in the body, including diabetes and cardiovascular disease. It's important to understand these links and equip yourself with the knowledge to keep gum disease at bay.

<sup>2</sup> <https://yougov.co.uk/topics/politics/articles-reports/2017/10/23/three-ten-brits-only-brush-their-teeth-once-day>



# Reasons to smile

Laughter is said to be the best medicine, but don't underestimate the power of a simple smile. When you smile, the brain releases dopamine, endorphins and serotonin, neurotransmitters associated with lowering anxiety and increasing feelings of happiness.

Yet sadly many people feel self-conscious about their smile, whether it's when catching their appearance on a video call or the way their grin looks in a photograph. In fact, just 30% of people in the UK smile with their teeth on show.

This not only highlights the role a healthy smile plays in our social wellbeing, but also raises the important question of just how closely our dental health links to our mental health. Like many conditions, the two often go hand in hand.



## Reasons people feel self-conscious about their smile



Discoloured teeth



Crooked teeth



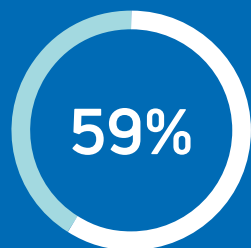
Shape of their teeth



Missing teeth



Fillings



**59% of people** have felt self-conscious about their smile





## How does stress affect our dental health?

- Stress can impair the immune system and be a contributing factor to inflamed gums and bleeding gums
- Grinding or clenching your teeth, known as bruxism, can be a symptom of stress
- If you grind your teeth often, you could experience heightened tooth sensitivity, chips, flattened tips, or sharp edges in the teeth as well as difficulties in opening and closing your jaw. In severe cases, excessive grinding can contribute to tooth loss
- When experiencing stress, you may repeatedly clench and unclench your jaw. This can lead to temporomandibular (TMD) disorders which involve the jaw joints

As much as stress can wreak havoc on your teeth and gums, poor dental health can exacerbate stress because you may be worried about symptoms such as tooth pain or the way your teeth look.

It's important to visit your dentist and hygienist regularly to put your mind at ease.

# The lowdown on diabetes

For people living with diabetes, ensuring healthy teeth and gums is particularly important, with research suggesting a two-way relationship between diabetes and gum disease<sup>3</sup>.

Diabetes is a condition where the body is not able to control blood sugar levels. High blood sugar levels over time will cause damage to other parts of the body, such as the eyes, kidneys, and heart.



**Dr Sarah Jarvis** has over 30 years' experience in the NHS, and over 26 years as a GP

Dr Sarah Jarvis explains:

“High blood sugar can result in more sugar in your saliva<sup>5</sup>, which makes it easier for bacteria to multiply. In addition to plaque, these bacteria can produce acid which attacks your gums and tooth enamel.”

“High blood sugar can lead to damage to your blood vessels, including the blood vessels in your gums.”

“Link that with the fact that people with diabetes are more prone to infections because of the effect of high blood sugar on the immune system<sup>6</sup> and it's understandable that people with diabetes are at higher risk of tooth and gum infection.”

“Keeping blood sugar tightly controlled can reduce these risks – but so can good oral hygiene.”

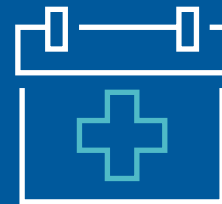
At least

**3.9 million**



people have been diagnosed with **diabetes** in the UK<sup>4</sup>

People with type 2 diabetes are



**x 3 more likely<sup>7</sup>** to develop dental issues

<sup>3</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3228943/>

<sup>4</sup> <https://www.bloodpressureuk.org/news/media-centre/blood-pressure-facts-and-figures/>

<sup>5</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6203925/>

<sup>6</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7475801/>

<sup>7</sup> <https://www.diabetes.org.uk/guide-to-diabetes/complications/gum-disease>



# A healthy heart

As with diabetes, a raft of studies has shown a link between dental health and heart disease.

According to Dr Sarah Jarvis:

“High blood pressure is a major risk factor for heart attack and stroke – it’s probably responsible for about 75,000 deaths a year in England alone<sup>9</sup>. Poor oral hygiene and gum disease have been linked to an increased risk of high blood pressure<sup>10</sup>.”

“Likewise, poor oral health has been linked to a higher risk of heart attack, stroke, and heart failure. Importantly, people who have good oral hygiene have been shown to have a lower risk of these devastating events<sup>11</sup>.”

<sup>8</sup> <https://www.bloodpressureuk.org/news/media-centre/blood-pressure-facts-and-figures/#:-:text=Around%20one%20in%20three%20adults,that%20are%20undiagnosed%5B6%5D>

<sup>9</sup> <https://ukhsa.blog.gov.uk/2017/01/24/health-matters-combating-high-blood-pressure/>

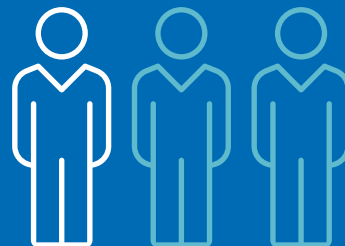
<sup>10</sup> <https://pubmed.ncbi.nlm.nih.gov/20706132/>

<sup>11</sup> <https://pubmed.ncbi.nlm.nih.gov/30561631/>



Over half (53%) of people are unaware that **heart disease** could be affected or worsened by **poor oral care**

High blood pressure affects around  
**1 in 3**  
adults in the UK<sup>8</sup>



“This may be because bacteria in inflamed gums can travel to blood vessels elsewhere in the body; or because inflammation in the gums can trigger damaging inflammation in the blood vessels of the heart and brain<sup>12</sup>.”

### Top tips to prevent gum diseases



Brush teeth for two minutes twice a day (once before bedtime) using a toothpaste containing fluoride



Clean between teeth once a day, using floss or interdental brushes



Have regular dental check-ups. When detected early, gum disease is easier to treat.

<sup>12</sup> <https://www.health.harvard.edu/diseases-and-conditions/gum-disease-and-the-connection-to-heart-disease>





# From head to toe

Arthritis is the medical term for joint inflammation. Some types of arthritis – like rheumatoid arthritis and psoriatic arthritis - are auto-immune conditions, where your body's immune system attacks part of your own body. People with this kind of arthritis are more than twice as likely to develop gum disease .

The exact reason for the link is unclear, explains Dr Sarah Jarvis, but it may be a combination of:

- Inflammation from gum disease leading to wider inflammation, which could increase the risk of autoimmune disease
- Inflammation of the bone holding teeth in place in psoriatic arthritis
- Joint problems in the hand making oral hygiene harder



Just **15% of UK adults** are aware that arthritis may be affected by **poor oral health**

The link between oral health and heart disease and the fact that people with rheumatoid arthritis are more likely to develop heart disease makes oral hygiene all the more important for people with these conditions.

A good dental routine that includes interdental cleaning is key, but for people with limited dexterity, flossing is not always the best option. Interdental brushes remove plaque from between the teeth and are often easier to use.



# Tooth tips!

Amanda Sheehan shares her top dental products to assist people with limited dexterity and strength:

Amanda says "It's important to clean all of your teeth, and to reach the up to 40% of the tooth surface normal brushing misses. If you're dealing with dexterity issues, or caring for someone else's teeth, TePe have developed a range of products that can help with your grip, and make hard to reach areas more accessible. In addition to toothbrushes, we also offer products such as the mini-flosser and Universal Care brush. All of our toothbrushes can be adapted and shaped for easier access."



**TePe Interdental Brush** is specifically designed to clean between the teeth. The short broad handle makes it easy to hold, and there are nine sizes, so you can find a comfortable fit for your teeth.

## TePe Angle Interdental Brush

has a long handle and angled head to allow easier access when cleaning between the back teeth.



**TePe Supreme Toothbrush** has a broad handle with thumbpad ergonomically designed for a comfortable hold, along with multi-level bristles to reach further between the teeth and along the gumline.

**TePe EasyPick** is a great 'on the go' option for removing food and debris from between the teeth. Their design makes them easy to hold, and the flexible silicon tip is ideal for gentle yet effective cleaning.



**TePe Extra Grip** is designed to help people with reduced manual strength by providing a comfortable, stable grip that will fit TePe Select and GOOD toothbrushes and special brushes.



# Cancer considerations

We know a healthy smile can transform our appearance and mindset, but did you know that keeping teeth and gums healthy may reduce the risk of certain cancers?

Mouth cancer can affect any part of the mouth, including the tongue, lips, gums, and skin lining the mouth.



**1 in 55**

UK men and

**1 in 108**

UK women

will get mouth cancer in their lifetime<sup>15</sup>

<sup>15</sup> <https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/head-and-neck-cancers>

# But what should you be looking out for?

According to Dr Sarah Jarvis, whether you're at high risk or not, it's important to know the signs of mouth cancer.

Visit your doctor if you have:

- Persistent white or red patches
- A lump on your lip, tongue, mouth, or throat
- Unusual bleeding or numbness in the mouth
- A change in your voice, speech problems
- Unexpected weight loss
- A sore or ulcer in your mouth that doesn't heal
- Pain that doesn't go away

## Healthy habits for a healthy smile:



Stop smoking



Cut down on the amount of alcohol you drink

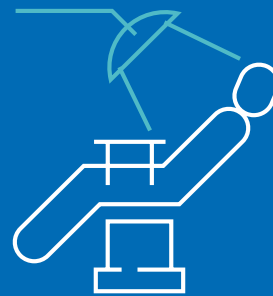


Eat a balanced, healthy diet. Aim for five portions of fruit and vegetables a day

## Visit your dentist!

Mouth cancer can often be spotted in its early stages by your dental team during a thorough mouth examination. If diagnosed early, the chances of a cure are good, but sadly, many people with mouth cancer go to their dentist or doctor too late.\*

\* <https://www.mouthcancerfoundation.org/>





# Gut feeling

You may be familiar with the fact that trillions of microbes have made their home in your gut. This community is known as your gut microbiota. But something that's less on the public radar is that a community of tiny organisms is also present in your mouth. This team is known as your 'oral microbiota', with recent science showing that, much like your gut microbiota, they are key to your overall health.



**Dr Megan Rossi - @TheGutHealthDoctor**  
- is a Registered Dietician and Nutritionist with a PhD in gut health.

Here, Dr Megan Rossi explains why.

"It's true that some of these mouth microbes are involved in the dental problems you know – think bad breath and cavities.

But around 700 species of oral microbes have been identified so far (you're probably providing rent-free accommodation to 250-300) and it's only a clutch of nefarious actors who cause issues. The majority work in fascinating and health-giving ways."



**"Your gut microbiome is your gut's bodyguard"**

Dr Megan Rossi

The healthier your oral microbiome the healthier your gut microbiome. Why? A thriving community of bacteria in your mouth not only play a role in digestion itself, but they also act as a bodyguard of your gut.

Certain strains are primed to kill disease-causing pathogens, preventing them from entering your digestive tract, where they would be able to mess with the delicate balance of bacteria who live there.



A happy oral microbiome lends itself to a happy mouth. People without cavities in their teeth, for example, **appear to have a species of bacteria** that is able to regulate the acidity of the area<sup>16</sup>.

But that's not all. **Some mouth microbes turn the nitrate in the fruit and veg you eat into nitrite**<sup>17</sup>. This becomes nitric oxide, which regulates blood pressure and can support a healthy heart.

**“An imbalanced oral microbiome can mess with your gut health”** Dr Megan Rossi.

Alternatively, every time you swallow, thousands of microbes from your mouth travel down into your gut. This means that an imbalanced oral microbiome might have negative consequences.

Take one example: research indicates that inflammation-causing bacteria in your mouth can flow down your digestive tract and into your gut. This matters because there is **science**<sup>18</sup> which suggests a link between oral disease and diseases with an inflammatory link, such as inflammatory bowel disease and rheumatoid arthritis.

<sup>16</sup> <https://www.nature.com/articles/d41586-021-02920-w>

<sup>17</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6147587/>

<sup>18</sup> <https://www.nature.com/articles/s41368-022-00163-7>



### How to nourish your oral microbiome:

Your diet can play an important role. Certain bacteria in your mouth convert sugar that you eat into acids which can weaken the teeth. It's worth limiting an excess of added sugars, like fizzy drinks and sweets.

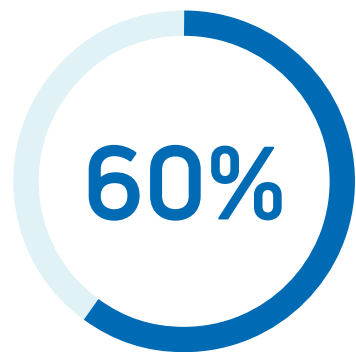
The good news is the microbes in your mouth love the same nourishment as the microbes in your gut.

From crunchy apples and carrots to chewy quinoa and buckwheat; herb-y extra virgin olive oil to earthy turmeric, they all help. But be sure to rinse your mouth with water after each meal, including snacks, particularly after sweeter foods like fruit.



# Keep smiling

As we know, the smile is a window to the rest of the body. Keeping your mouth clean and fresh is an investment in your overall wellbeing. For a sparkling smile, prevention is key.



**60% of people aged 55 – 64 wish they had taken better care of their teeth when they were younger**



## Tooth truths

- Brush your teeth twice a day using a fluoride toothpaste
- Clean between the gaps in your teeth at least once a day
- Find an Interdental cleaning tool that works for you. Use dental floss if you have tight spaces between your teeth, or TePe Interdental Brushes if the gaps are wider
- Always go to bed with clean teeth – the production of saliva is reduced at night, which lowers the saliva's capacity to protect your teeth
- Change your toothbrush regularly, at least every three months
- Use a tongue cleaner to remove plaque build-up from the surface of your tongue







**Fluoride** can strengthen the **tooth enamel** and heal early signs of **tooth decay**



Remember, a good dental routine is just part of the equation, and other lifestyle factors have an important role to play. Here's some smile friendly tips to keep tooth decay at bay:

- Don't rinse after brushing, spit instead of rinsing so you don't wash away the beneficial ingredients in toothpaste like fluoride
- Avoid snacking between meals. Saliva rinses and neutralises acids but needs time to work. Let your teeth rest!
- Time your mouthwash. Avoid using mouthwash straight after brushing as again, you'll rinse away the benefits of toothpaste. Use it after meals instead
- Say cheese! Finish a meal with cheese as it restores the pH levels in your mouth
- Drink up. Sip on water after meals to wash away debris and dilute acids



# Dental care for today and tomorrow

Raising awareness about preventive oral care is more important than ever. For over 50 years, TePe has been designing and manufacturing functional oral hygiene solutions which promote long-term oral health and quality of life for people worldwide.



## Here's what you need to know:

Traditional tooth brushing cleans only up to 60% of your tooth surfaces: the top, front and back. However, most dental disease starts between your teeth where food and plaque accumulate. It's important to try to clean the remaining 40% that the toothbrush misses so your teeth and gums are as healthy as they can be.

Enter TePe's Interdental Brushes.

These clever little tools are developed in collaboration with dental professionals. With daily cleaning, they can help to prevent gum disease and cavities by ensuring as much debris is removed as possible.

Manufactured at its Swedish Malmö factory, which has the largest solar power plant in the city, TePe's Interdental Brushes come in a variety of sizes, so you can find the perfect tool for getting between all of your teeth.



No wonder **94% of dental hygienists** recommend them<sup>19</sup>.

<sup>19</sup> Source: A survey of 201 dental hygienists in the UK, Ipsos (2019)

# Be clean and green

Did you know that keeping your mouth healthy is now greener than ever? TePe Interdental Brushes are made in our factory which is run by 100% green energy. We are committed to reducing our environmental impact work continually find new ways to do this and publish an annual sustainability report. <https://www1.tepe.com/uk/sustainability/>



## GOOD news!

For daily brushing, the TePe GOOD™ toothbrush is the UK's first plant based plastic toothbrush made using sugarcane and castor oil.

The use of renewable raw materials enables TePe to recirculate up to 95% of the CO2 emissions during the product's lifecycle, offering a more sustainable choice without compromising on product quality, design, or hygiene.



TePe has been certified to **ISO 14001 environmental standard** for **over 15 years.**

To find out more about how TePe can help to keep your smile healthy, visit [www.tepe.com/uk](http://www.tepe.com/uk)





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