

We are what we eat



Dr Daniela Weiler

Works in medical oncology at the Tumour Center of the Lucerne Cantonal Hospital in Switzerland and is also a specialist in nutritional medicine.

Interview — Bruno Affentranger

Why do the bacteria populating our mouth matter to the rest of our body? And why does proper nutrition lead to overall health through good oral health? What can we ourselves do to prevent cancer? In conversation with Dr Daniela Weiler. She works in medical oncology at the Tumour Center of the Lucerne Cantonal Hospital in Switzerland and is also a specialist in nutritional medicine.

Dr Weiler, is the mouth the gateway to overall health?

That is certainly true. But it's not just bacteria that find their way into the body through the mouth. I see this in an even broader context. The mouth is the gateway for the food we eat, which then influences the diversity of bacteria. Eating and drinking are very important for our health. The gateway-to-health analogy is correct because the mouth cannot be viewed in isolation from the rest of the body. The correlation is particularly obvious when we are talking about inflammation. Inflammation in the mouth can have an impact on the entire body. Chronic inflammation in the mouth has significant consequences for the whole body.

What are the effects of inflammation in the mouth?

Let's take periodontitis (gum disease), for instance. The bacteria in question are located in the mouth, but we can also detect them in tumours. We suspect that these bacteria – here we are talking about *Fusobacterium nucleatum*, *Porphyromonas gingivalis* and *Treponema denticola* – migrate

from the mouth into the intestines. They can be detected in colon cancer in particular. We have also seen evidence of them in oral tumours in the ear, nose and throat area. Likewise in pancreatic cancer. Conversely, it is evident that tumour patients with the aforementioned diseases also suffer more from periodontitis.

Has this been scientifically proven?

Studies confirm this. But the question is always: 'which comes first?'

So it might also be the other way around? Bacteria found in colon tumours can also find their way into the mouth?

A causation has yet to be proven, and I can imagine that is very difficult. But it is clear that there is a link.

Is anyone in research at all interested in these links?

Research into the microbiome has increased exponentially in recent years. A convention in Rome also reported on

bacteria that sit on the biofilms of tumours in the intestines, but which can also be found in the mouth. Research is still in its infancy. However, microbiome research is gradually finding its way into a clinical setting. We are discovering more and more connections and are aware of the importance of the microbiome in the treatment of cancer.

What is a microbiome?

The microbiome is the entire diversity of microorganisms that we carry on and in our bodies. Our guts are host to around one hundred trillion bacteria. Our body consists of 10 percent human cells and 90 percent non-human cells; this includes viruses, fungi and bacteria. That's an impressive ratio. Most of the bacterial flora can be found in the gastrointestinal tract, some is found on the skin.

The Swiss oral hygiene company CURADEN, which conducts intensive research in this area, has found that there are around 15 billion bacteria between two teeth, for example.

The figures are incredible. It is important to realize, however, that not all of these bacteria are harmful. Some are essential.

Research assumes that 80 percent are 'good' bacteria.

The pivotal question, of course, is how to remove the harmful bacteria without destroying the good bacteria.

Is that possible?

I believe it is possible with the right nutrition, which is where I come in with my speciality. People can strongly influence their intestinal bacteria and their diversity with their choice of food. It has been proven that, over the centu-

ries, humans have unfortunately lost a lot of this bacterial diversity.

Why do you put such emphasis on bacterial diversity?

Two major studies have proven a direct link between bacterial diversity and our health.

So the more varied our bacteria, the healthier we are?

Exactly.

What kind of diet is conducive to promoting bacterial diversity?

Eat more fibre. Consume less sugar and fewer trans fats, less white flour or meat. Eat more plants with their fibres.

Less meat?

Absolutely. Saturated fats are unhealthy. We consume far too much protein, saturated fats, salt and sugar today.

Plant-based and wholegrain foods are beneficial. Do you stick to this type of diet yourself?

Yes, most of the time. And more and more consistently in the last five years.

Did you want to lose weight?

No, but it's funny that you should ask. This excessive form of daily protein intake seems to have been ingrained in us since the time of the world wars. We are afraid that we, and especially our children, are not getting enough sustenance. People think they need to build up reserves. The outcome is that on average, we eat more than twice the amount of protein than we should. Every day.

How long does one have to change one's diet before the microbiome reacts?

This happens after a short time. Studies report changes within just one week. It is important to change our diet permanently, not for a limited period of time. Permanence is key.

Did you change your diet from one day to the next?

No, it was a step-by-step process. At first, we ate meat from grass-fed cows, i.e. from cows that are not artificially fattened but only eat grass. We know

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that this meat contains more omega-3 fatty acids and is therefore more similar to fish. We also cut down on saturated fats and only bought skimmed milk. After further study, we then gave up all meat, including chicken, as this has a much higher fat content in our part of the world than it used to.

Do you still eat fish?

Yes, but plant-based foods became my main focus. We don't consume any lacto-proteins at all, because they can trigger flare-ups in autoimmune diseases.

The media are engaging more with nutritional issues than ever before. Does that mean the time is ripe for this?

It's more a question of whether people are interested. Those who are interested are more likely to come across relevant reports in the media. There is also a lot of uncertainty in today's society. It's quite difficult to sort out the good and sensible information from the short-lived trends and fads. When it comes to nutrition, everyone is a specialist and has their own opinion.

Do different types of people require different nutrition?

I don't think so, but that's just my opinion. I've never come across any scientific support for this. It's practically impossible to provide the kind of clinical trial evidence we require for medicines. But it is possible to describe very clearly what is healthy, even if the food industry, among others, holds other interests and opinions.

In one of your nutrition brochures you describe a 3-pillar concept. What does that mean?

This is my very own definition of the important aspects in cancer prevention: diet, exercise and stress management. Alongside treatment, these three pillars can contribute to a better prognosis when coping with cancer. This is scientifically supported and proven. The three-pillar approach can also be applied in primary prevention, i.e. preventing people from developing cancer in the first place. Many observational and interventional studies deal with primary prevention. All too often, however, they only examine small dietary aspects, such as nut or olive oil consumption.

What is the number one cancer risk factor in our part of the world?

Obesity has overtaken smoking as a risk factor.

To sum up: proper nutrition goes through the mouth and leads to better prevention, but also to a greater likelihood of surviving cancer. Is that correct?

There is scientific support for this. The area where we have the least data is in palliative medicine, i.e. where we are already dealing with metastatic cancers. We can even go one step further: a plant-based, wholesome diet also has a positive effect against dementia, cardiovascular disease, diabetes and rheumatic diseases. And although the benefits may not be 100 percent proven in all of these cases: this form of nutrition does no harm – it certainly has fewer side effects than any of the medications used to combat the diseases.



too tied up in their specialist areas and everyday tasks.

You don't shy away from giving recipes to your patients. Why is that?

I want to show them that a healthy diet doesn't have to mean eating boring and bland food. My recipes aim for colour and variety.

Let's look to the future: could a regime that combines oral hygiene with nutrition improve cancer prevention?

It could certainly improve primary prevention. What we put in our mouth is extremely important. Another exciting aspect is the feedback between the microbiome and especially between gut bacteria and the brain. The brain and gut communicate with each other.

How can you tell?

I used to eat meat twice a day. I couldn't imagine a day without eating meat. Around six months after I changed my diet, my craving for meat disappeared completely. I don't miss it at all. I now even find particularly unhealthy forms of meat, such as sausages, repulsive. I am convinced that my intestinal flora has changed and is now signalling different desires to my brain. This makes sense and is verifiable, because my current gut bacteria want to survive and therefore demand that my mouth feeds it the right foods and avoids unsuitable ones.

What is your favourite food?

Salads, all vegetables, nuts, avocado, tofu, seitan, wholegrain rice, quinoa, sweet potatoes, bulgur, wholegrain pasta. I no longer have a favourite food. I used to love beef stroganoff.

Why do you never talk about smoking?

Everyone should know by now that smoking and alcohol are harmful. It's no longer necessary to point that out.

There's another point you don't mention – self-healing power.

Why not?

Self-initiative is important and indeed crucial to the success of any therapy. People who take action themselves have a better prognosis. What strikes me is that patients and nursing professionals are very interested in these topics, more so than doctors, who perhaps simply don't have the time and are

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