[Intro music]

Introduction

Will:
Aloha and welcome back!

This video is the first of three videos where we will focus on the role of diet and nutrition on oral health.

In this video, we are going to introduce four aspects [of] how diet and nutrition impact our oral health on a whole-system view.

And also, we'll cover what we consider to be a foundational fact that is a crucial understanding to have in place to be able to create positive change in our oral health.

Before we jump into today's information, let's get the legal stuff in place.

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We share this material with you in order to support and bless you with the information and insights that we have found helpful on our own path to greater oral health.

Ok, so let's get started.

4 main dietary aspects for optimizing health

So here are the four main aspects regarding the role of diet and how to optimize our oral health.

1. Having sufficient fat-soluble vitamins in our diet. Those are namely vitamins A, D, E, and K2.
2. Having sufficient available minerals in the diet.
3. The consumption of too many foods [that are] high in phytic acid.
4. Eating too much sugar (in all forms).

We have grouped these four main ideas into two different groups: what TO eat and what NOT to eat to help navigate to greater oral health.

In the next video, we will go into detail about how to make sure you're getting sufficient minerals and fat-soluble vitamins in your diet. We'll cover what foods are highest in fat-soluble vitamins as well as what you can do to maximize the bioavailability of the minerals in the foods you eat.

Then we've created a video where we will discuss what NOT to eat to help navigate to greater oral health.

In that video, you'll learn about the research of Drs. Edward and May Mellanby and their research around the role of phytic acid as well as the work of Dr. Ralph Steinman regarding what sugar intake does to our oral health.

The information will most likely surprise many of you, as it's very different than what we commonly understand.

Today's video - Dr. Ralph Steinman's work

In this video, we're going to cover the work of Dr. Ralph Steinman. Dr. Steinman was a dental researcher in the 1970s who did extensive research to determine the cause of tooth decay. He published his work in his amazing book titled, Dentinal Fluid Transport.

Bear with me here as we wade through this information.

For those of you who are passionate about the role of diet in creating optimal health (or others like me who just like to nerd out on old medical journals :), you're going to love this piece of the puzzle.

Dr. Steinman's work uncovers some foundational pieces to the puzzle that we need to have in place in order to really grasp the significance of the role that diet and nutrition play in creating optimal oral health.

Before we get into the work of Dr. Steinman, let me state that when learning from the research from folks like Dr. Steinman, we don't endorse testing on animals. Let's please learn from these studies at least so we don't have to conduct further experimentation like what we're about to study.

Dr. Steinman conducted tens of thousands of experiments on lab rats to determine the cause of tooth decay. What he found is extremely different than what we as a culture understand is the cause of tooth decay today.

Dentinal fluid flow

Fundamentally, what Dr. Steinman discovered is that our teeth are alive.

Contrary to popular cultural belief that our teeth are like, just kind of small rocks in our head, the fact is that our teeth have a flow of fluid through them called "dentinal fluid flow".

The dentin is the layer of tissue in each of our teeth just between the hard outer enamel surface and the soft tooth pulp.

Dr. Steinman discovered that this dentinal fluid flow is part of our blood circulation that occurs into and out of each of our teeth.

Dr. Steinman discovered that when the dentinal fluid flow is flowing from the inside of the tooth outward, the teeth are very resistant to decay.

However, when the fluid flow isn't flowing from the inside out and [it] in fact *reverses* and flows from the surface of the tooth into the inner portion of each tooth, decay quickly sets in.

If you think about what we generally recognize in our culture as the cause of tooth decay being the bad bugs in our mouths, if the dentinal fluid is flowing the healthy way, this keeps the bad bugs from being able to decay the teeth.

The flow literally keeps them out of our teeth. It's like them having to swim upstream to get into the teeth.

If, on the other hand, the dentinal fluid flow reverses, then it's like the bad bugs get a free pass on the highway right into our teeth.

What directs the flow?

He found that dentinal fluid flow is controlled by the parotid glands, which is part of our salivary system and is located in our lower jaw region.

Then he discovered that the parotid gland is controlled by a part of our brain called the hypothalamus.

We'll call this system of the relationship between dentinal fluid flow, the parotid gland, and the hypothalamus simply, "dentinal fluid flow" (for the sake of simplicity of this video).

Then Dr. Steinman asked, "I wonder what causes the parotid gland to promote the proper flow of dentinal fluid and what causes the flow to go the wrong way (which promotes decay)?"

What Dr. Steinman went about then is discovering what factors cause the dentinal fluid to flow the health-giving way as well as what causes the dentinal fluid to flow the way that promotes decay.

What he found is that what causes the dentinal fluid to flow one way or the other was the balance of the mineral phosphorus in our blood.

This is crucial, so I'm going to repeat it: what determines whether our teeth are resistant to decay or prone to decay is the balance of the mineral phosphorus in our blood.

Dr. Steinman found (through expensive experimentation) that when he induced a low blood phosphorus level, the whole dentinal fluid system went into "self-destruct mode" and decay quickly followed.

He also proved that when blood phosphorus was maintained high enough, dentinal fluid flowed the healthy way and he found very little (and sometimes zero) decay.

It's not as simple as just supplementing with phosphorus

Now, remember: a little knowledge can be dangerous.

So, before we run out and go buy some phosphorus supplements thinking that all we need to do is supplement phosphorus, it's not that simple (unfortunately).

While the specific measurement of phosphorus in the blood really isn't important, [for] those of you who would like to know, the magic number [that] Dr. Steinman found was 3.5 milligrams of phosphorus per deciliter of blood [3.5 mg/dl blood].

So if blood phosphorus is greater than 3.5, dentinal fluid flow is healthy. If it's lower, the fluid reverses and promotes decay.

Incidentally, if you have any recent blood work done, phosphorus is a common mineral measured and [it] can give you profound insight into the overall health of your body as well as whether your dentinal fluid is flowing the healthy way or not.

So let me repeat that: blood phosphorus balance causes the cascade through the body which results in how our dentinal fluid flows, which causes our teeth to be resistant to decay or prone to decay.

Yes, bad bugs in the mouth are part of the issue of decay.

However, they're only part [of the issue], and diet plays a foundational role [in] whether we experience a resistance to- or a tendency to easily decay.

With this important foundational bit of information in place, let's cover the last point for today.

What influences blood phosphorus levels?

Since this whole issue is around blood phosphorus, let's begin to look at what factors cause blood phosphorus to raise or lower. For this, we'll use a wonderful graphic we learned from Dr. Hal Huggins.

Dr. Huggins is really the modern blood chemistry dental guru whose work has really contributed greatly to our understanding [of] how blood chemistry impacts the health of the whole system.

Dr. Huggins explained to us that the phosphorus balance is impacted by several other factors in a teeter-totter fashion.

Simply put, if we have phosphorus on one side of the balance [and] then we have on the other side of the balance--we've got some pretty heavy hitters: we have calcium, we have glucose, we also have triglycerides, and we also have cholesterol. So when any of these factors goes up, phosphorus goes down.

With this you can see it's not as simple as taking more phosphorus supplements.

Takeaway gems

So let's quickly review the important points here that we will build on in the following video tutorials:

1. Our teeth are alive and have a fluid flowing through them.
2. When this fluid flows the health-giving way, our teeth easily resist decay. When the dentinal fluid flows the wrong way, decay soon follows.
3. And it's the balance of blood phosphorus that determines which way the dentinal fluid flows in our teeth.

In the next video, you'll learn what foods to eat to promote a healthy blood phosphorus balance in your system.

Please comment below if you find benefit from this information. And, as always, if you know someone who could benefit from this information, please help us help others navigate to greater oral health and share about this video series.

Thank you and Aloha! Until the next video! :)