NATIONAL INSTITUTES OF HEALTH

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INTERVIEW WITH DR. DEAN METCALFE

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STENOTECH, INC.

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P R O C E E D I N G S

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QUESTION: Dr. Metcalfe, people often say they're allergic to a certain food when what they really mean is that it disagrees with them in some way. How do you define a true food allergy?

DR. METCALFE: A true food allergy is distinguished from other problems with foods by the fact that it has an immunologic--

MR. : Do you want a place to sit?

MS. : I'm fine. Thanks.

QUESTION: Would you like me to repeat the question?

MS. : You might want to wait until--

DR. METCALFE: It's a very long question. It was hard for me to repeat that.

QUESTION: Okay. I know. Okay. Then, I guess, basically, to define a true food allergy as opposed to a food intolerance.

DR. METCALFE: That would be fine. Yes. That's really what you're getting at.

QUESTION: That's really what I'm getting at.

DR. METCALFE: Or you could say something like, "A lot of people think they're allergic to foods, but many

times it's not a true allergy. How do you distinguish them?"

QUESTION: In fact the question-- I didn't realize that my questions were not going to be heard, because that was what I was trying--

MR. : They're heard. They're just a little off mike.

QUESTION: And they were going to be eliminated. That they are going to be edited out. That's what I mean. Because I wanted people to realize-- You know, it was for those people who have a food intolerance.

DR. METCALFE: The question made sense. It's just that I thought, "Boy, if I have to repeat that whole question--"

QUESTION: Yes. You can't do that. Yes.

Okay. Are we ready?

MR. : We're rolling. Okay.

QUESTION: Dr. Metcalfe, how do you define a true food allergy as opposed to an intolerance that people have to certain foods?

DR. METCALFE: A true food allergy, versus a food intolerance, is defined as a reaction that has as its basis--

MR. : Sorry. I--

DR. METCALFE: Try again. You don't have to state

it again. A true food allergy is distinguished from a food intolerance on the basis of what causes the reaction. In the case of a food allergy it's an immunologic reaction of the body against the food, which is an abnormal response, obviously, to eating a food. A food intolerance, in contrast, is a term given to any reaction to a food whose basis is unknown or may have something to do with the quality of the food or the chemicals within the food.

QUESTION: Okay. Also, and when you finish the question, just continue to look at me and just pause. Have a few seconds pause.

How common are food allergies?

DR. METCALFE: The question is how common are food allergies. Food allergies are rare in contrast to what the public perception of food allergies is. In other words, people think that food allergies are extremely common. If you survey families you'll find that as many as one in three families may change the way they eat based upon believed or perceived problems to foods or food additives. In reality, less than one percent of adults are probably truly allergic to a food and probably three percent, or less, of children.

QUESTION: Are food allergies inherited?

DR. METCALFE: The question is frequently asked whether food allergies are inherited. Food allergies themselves, or the pattern of food reactivity, is not

inherited. By that I mean that if you find a child who is allergic to peanuts and you talk to the parents and the siblings you'll almost never find someone else in that family that has that same specific food allergy. But what you do find is that people with food allergies come from allergic families that have a history of such things as allergic rhinitis and allergic asthma and eczema. And in fact sometimes you'll find other members of the family with selected food allergies, but they won't be the same.

The answer to the question then is that the tendency to develop food allergy is inherited, but the specific pattern is not.

Another question asked frequently along that line is, "If I have a child that's sensitive to peanuts, will my other children be sensitive to peanuts?" And the answer is no, although they'll probably be allergic if the parents are allergic, in general.

QUESTION: All right. Is there any way to prevent a child from having a food allergy? For example, are there any precautions a pregnant woman can take if allergies run in the family?

DR. METCALFE: One of the issues that comes up frequently in terms of management of allergies is the question, "Can I do something to prevent my child from having a food allergy?" And the answer is a complex one.

There is nothing that a parent can do, or a mother can do, to prevent their child from developing allergies later in life, it does not appear. But there are some strategies that can be taken to try to avoid problems, in children in particular, in families where infant feeding problems have been common.

Now, it's not recommended currently that women who are pregnant alter their diet to try to prevent a problem. There is no evidence that that works. But it is generally recommended that if at all possible, if there is a history of allergies and infant feeding problems, that the child be breast fed. And if the problems have been severe in the past it's recommended also that the mother, while breast feeding, alter her diet to eliminate foods that are highly allergenic such as peanuts, for instance, or even milk. This, then, means that the child will receive normal breast milk, and children do not become allergic to human milk, and will also avoid small amounts of proteins that are excreted into the milk that the child could become sensitive to. If the mother can't breast feed, then there are hypoallergenic formulas that can be used.

Now, that will generally take the infant through a critical period of the first 6-9 months where allergies are quite frequent in these families. After that, then the child is put on a regular diet and, of course, may or may

not develop into the usual pattern of allergies that are seen in that family.

QUESTION: Good. How do you make a diagnosis of food allergy?

DR. METCALFE: Food allergy is diagnosed on the basis of the history of the reaction and there are classical patterns of reactions. Food allergy comes on suddenly, for instance, and others don't get ill eating the same food. So the doctor then makes a tentative diagnosis of food allergy based on history. Then he has two things he can do:

He can do tests to see if there is a specific immunoglobulin to food called IgE, either by skin testing the patient with food extracts, or doing tests that can be done *in vivo*. That is serum is taken from the patient which is tested for the presence of these immunoglobulins;

And finally, if there is confusion, and if it can be done safely, the patient can be tested with small amounts of the food to see if they do indeed react.

Then, based upon all that information, the doctor will decide if it's a food allergy and what the foods involved consist of.

QUESTION: Once a food allergy is diagnosed, what is the treatment?

DR. METCALFE: The treatment of food allergy, once properly diagnosed, is simple food avoidance. That is the

concept is simple: identify the foods to which the patient reacts and remove them from the diet.

Now, in a practical sense that's difficult because patients have to learn how to read food labels and so on.

The second part of the recommendation is, if the food allergy is life-threatening or severe, or may be severe in the future, patients must be prepared to self-medicate if they have inadvertent exposure to a food to which they're sensitive. This usually consists of the patient being trained in the use of self-administered--by syringe--a drug called epinephrine or adrenalin. The patient will carry then an adrenalin syringe and use it if needed.

Then, of course, the recommendation is seek medical aid quickly because that adrenalin, or epinephrine, may wear off and the food allergies can come back and they need to be in an emergency room.

There is no medication that can be taken before eating a meal that will reliably prevent a true food allergic reaction.

MR. : Time out just for a second. Do you need to clear your throat?

DR. METCALFE: Yes.

QUESTION: Okay. Well, you just answered my next question.

DR. METCALFE: You could ask it again though--Do

you want to do it again--because they can always split it.

MR. : Can I get you something to drink?

DR. METCALFE: No. I'm a little bit hoarse, but I think it's because I've got a cold or something. So, this is as good as it's going to get today.

MS. : It sounds sexy. It's good.

MS. : Ooh, Esther.

DR. METCALFE: That's what I need.

QUESTION: Next question. Are any drugs used to treat food allergies?

DR. METCALFE: There are only-- The drugs used-- Let me start again. The drugs used to treat food allergies are used after inadvertent exposure. No drug can prevent a food allergic reaction.

MR. : Do you want to start that again?

DR. METCALFE: Yes. I'm having trouble. Maybe you'd better get me something to drink.

MR. : Okay. Rolling.

DR. METCALFE: There are a number of drugs that can be used to treat food allergies, but it's always in the context of inadvertent exposure to a food to which a person is sensitive. For instance, if a person is sensitive to peanuts and eats those peanuts, then that patient may have

to be treated, even self-treated, with epinephrine and then go seek medical aid. If the reaction results in asthma or wheezing they can then be treated with anti-asthma medications. If it results in a rash they can take antihistamines for the rash. But again, there is no medication that you can take to prevent a food allergic reaction.

Thanks. I don't think it's going to help, but--Thank you.

QUESTION: Okay. Next question. What kinds of conditions can be confused with food allergy?

DR. METCALFE: There are a number of conditions that can be confused with food allergy. Remember that food allergy is manifested by problems such as stomach pain, vomiting, rashes, trouble breathing and maybe light-headedness, even loss of consciousness. Now, a myriad of medical conditions can show up as those kind of symptoms. The most common confusing diseases, however, in terms of food allergy are things such as eating a food that's spoiled so you have what is commonly referred to as "food poisoning"--there is some bacteria or bacterial product that causes you to get sick--or toxins that can sometimes occur in foods such as histamine, which can sometimes contaminate poorly prepared fish. And there are things like scallops that can actually concentrate toxins from the red tides or

the adenoflagellates and they, when eaten, will cause you to become ill. But it's generally things that come naturally in foods as toxins or contaminants. That's our biggest problem in trying to sort out a food allergy.

However, under those conditions, many times a number of individuals eating that food will become sick, so it helps us sort it out.

In rare cases, however, there are some things that we worry about because we don't want to miss them. We worry about people with stomach pain blaming it on a food allergy when, in reality, it might be an ulcer, or the most feared problem would be a malignancy of the gastrointestinal tract which would be falsely attributed to a food allergy, and then the patient would not seek medical attention for a critical period during which they could be cured.

We urge all people that think they have a food allergy to bring that to the attention of their internist or, if it's a child, that the child be taken to the pediatrician and let them decide if a work-up for food allergy is indicated or whether some other disease should be considered.

QUESTION: Okay. You just knocked scallops out of my diet. It's my favorite food.

DR. METCALFE: Did I? You know, the scallops are actually regulated and during certain times of the year

they're not to be gathered and processed because the reactions are more common.

QUESTION: But they're safe at the Safeway, right?

DR. METCALFE: I'm sure.

QUESTION: Okay. What are the foods most often involved in allergies?

DR. METCALFE: The foods most often involved in allergies depend upon the age of the patient and actually where the patient lives. But for children and infants it's what they're exposed to. So it's milk protein and often soy protein. And then mothers begin to feed children early with such things as peanut butter, so peanut becomes an issue. And sometimes things like corn and wheat will become minor problems.

In adults, the most common food allergies in this country are eggs, tree nuts such as walnuts, peanuts, and seafood, particularly whitefish and crustacea, which includes lobster, crayfish and crab.

Now, if you go to other areas in the world where other foods are more commonly eaten--for example in Scandinavia they eat a lot of cod fish, so cod fish allergy is common there, and in Japan they eat a lot or rice and rice allergy is more common--so it depends upon age and where a person is living.

QUESTION: Do children outgrow allergies or, in

the case of adults, do they ever just go away?

DR. METCALFE: The problem with allergies to foods in terms of whether or not they resolve is a commonly asked question. In children, some allergies are lost more commonly. That is, a child sensitive to milk stands a good chance of losing that milk allergy. But to some of the other materials, such as peanuts, will probably remain sensitive perhaps through adulthood to peanuts. In adults, when food allergies develop, particularly in the 20s and 30s, these seem to persist for long periods of time.

Now, there is some evidence that if you identify yourself as an adult of being sensitive to a particular food, that if you avoid that food for maybe a year or two, that some people can go back and eat it safely. But about half the people will re-experience their allergy after a few feedings. We have to say then that outside of children outgrowing some materials such as milk that aren't as allergenic, most food allergies have to be considered permanent once they develop.

QUESTION: So then, in a sense then, allergies can develop at any time during life?

DR. METCALFE: Food allergies can have their onset at any time during life, although we see clustering, of course, in infants and children, and we see an onset of food allergies through the 20s and early 30s. After that, it

becomes more unusual, but people can, in reality, develop food allergies virtually at any time. This is obviously confusing because they say, "Gee, I now have a rash when I eat shrimp. I never had it before. There must be something else going on." But in fact a person in their 20s or 30s can develop a shrimp allergy and, for the first time, have even a life-threatening reaction.

QUESTION: Hmm, next question. Anaphylactic shock is a serious medical emergency. How important is it for people with food allergies to know about this and be prepared to take action in the event that it occurs?

DR. METCALFE: Anaphylactic shock is a severe, life-threatening, allergic reaction which can occur to many different substances. One of the substances consists of foods, so that it is not uncommon for someone with a true immunologic food allergy to develop reactions that can develop into anaphylaxis. Particularly with tree nuts and peanuts and seafoods this is seen. Those patients must be identified and instructed on how to self-medicate if they inadvertently consume a food that they know they shouldn't be eating. It's extremely important that they do that because this can essentially save their lives. There are a number of deaths every year that occur when someone who knows they're sensitive to a food eats that food inadvertently, experiences a drop in blood pressure,

inability to breath, sometimes throat swelling so they can't breath, and this can result in death. This is preventable if the person administers themselves epinephrine, which is sometimes called adrenalin, immediately after the reaction and then goes to seek medical aid.

Now, the problem with anaphylactic shock is particularly difficult in young children, where the young children may not be able to self-medicate. And when the child is at home, of course, around parents, the parents can recognize the reaction if inadvertent exposure occurs and they can treat the child with epinephrine. But in school this has to be worked out very carefully. The school nurse needs to know the problem, the teacher in the room, the principal, and a plan needs to be developed so that the child is promptly treated with adrenalin and then taken to a situation where there is full life support, really to an emergency room. This must be planned out in advance because of the severe nature of this.

QUESTION: There has been a lot of media attention in recent years about health problems such as chronic fatigue syndrome, women's yeast infections, arthritis, other perhaps vague aches and pains, relating these things to food allergies. What can you tell us about this?

DR. METCALFE: Many times people associate a number of problems, including recurrent yeast infections,

sometimes nervousness or attention deficit disorders, fatigue--chronic fatigue--and arthritis to foods they eat and they assume that this is a food allergy. In reality there is little or no evidence that any of these problems are due to true food allergies or, in fact, are even associated with a particular diet. These problems have been looked at and can be looked at in an individual patient with a procedure called double-blind, placebo-controlled food challenge. In this procedure food is administered to the patient in capsules and the patient is asked to see if their problem gets worse or gets better. Sometimes they're getting the food that they're concerned about and sometimes they're getting a placebo, that is something simple such as sugar that's known not to cause the reaction. So these questions can be evaluated. But the majority of these problems have nothing to do with true food allergies.

QUESTION: Okay. How about migraines? Are they ever caused by food allergies?

DR. METCALFE: Migraines are often suggested to be due to food allergies, and there is no question that this is a controversial area. There is some evidence to suggest that true food allergies can be associated with severe headaches. One way to look at this is if you have an allergic reaction and if you're prone to have migraines it could bring on a migraine headache. There are also

materials within foods called vasoactive amines and there are certain alcohols within foods, or beer and wine, of course, obviously have alcohols and higher alcohols that are known to precipitate migraine type headaches in people who have recurrent migraine headaches. So, yes, I think there is an association with diet, both in the possibility that some people are truly food allergic but, more importantly, in that some normal constituents of foods can bring on a migraine headache. Both of these problems, of course, can be evaluated and, if found to be implicated in migraine headaches, a diet can be constructed to at least decrease the frequency of migraine headaches.

Now, some of these answers may be to convoluted. We can go over them. What I'm trying to do is, I'm trying to structure them so that they can cut them up. I mean--

QUESTION: Yes. I've noticed that. Yes. We'll be able to do this.

MR. : Do we want to revisit the first question?

DR. METCALFE: Sure.

QUESTION: Yes. That's the definition of a true food allergy as opposed to a food intolerance?

DR. METCALFE: Okay. Let me think if I can think of a way to say this.

There are two terms that are used to describe

reactions to foods, particularly associated with a particular group of foods, and the first term is a general term called "food intolerance." And this is applied to people who have reactions to foods perhaps because of materials within the foods or materials that contaminate the foods, but these reactions are not on an immunologic basis. And these are called food intolerances. An example of this might be people who can't tolerate onions because of the pharmacologic properties of the onions, but it's not a food allergy.

True food allergies, however, have an immunologic basis. They're based on an abnormal response of the body to the food and there is a true response on an immunologic basis if the person eats the food inadvertently. And this results in such things as hiving, trouble breathing, swelling of the throat, abdominal pain, vomiting, nausea, and a host of symptoms of true allergic responses.

That's probably better. Probably.

MR. : Excellent. Let me get the mike off you and let you loose.

DR. METCALFE: All right. Well, we'll see what happens.

(Whereupon, the interview concludes.)