

Biomedical Analyses of a Holistic Peanut Allergy Treatment: NAET

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Abstract

Across the United States holistic medicine is being used as an alternative to, or in combination with, traditional medicine. One such treatment is for peanut allergies, which involves a series of kinesiology and energy balancing tests. This rapidly growing treatment is called Nambudripad's Allergy Elimination Technique (NAET) founded by Devi Nambudripad M.D., D.C., L.Ac, Ph.D and is practiced primarily by licensed chiropractors. The difference in allergy treatment techniques applied by traditional versus holistic practitioners is based primarily on the definition of allergy. Although definitions and techniques may vary, the outcomes must be the same – that is, desensitization to the offending allergen. This study is an analysis of NAET peanut allergy treatment using immunological measurements. Participants with peanut allergies had their blood tested for peanut specific IgE and IgG levels, as well as the inflammation marker tryptase. The blood will be collected pre- and post-treatment and will be tested by validated methods at ARUP laboratories. It follows that if a participant is desensitized to the allergen, there would be a measurable biomedical response in the participant when treated using NAET allergy alleviation therapy.

Keywords: Peanut allergy, NAET, Immunology

1. Introduction

The peanut allergy is one of the five most common food allergies. Many individuals seek and find relief from traditional medical immunologists while others turn to alternative treatment methods. It is the purpose of this study to evaluate a relationship between holistic allergy relief treatment and a measurable decrease in allergy specific antibodies and without an elevation in tryptase following oral peanut challenge. With such wide-ranging options for holistic treatment methods, this study focuses on just one, NAET.

Nambudripad's Allergy Elimination Technique (NAET) is a holistic treatment for allergies. NAET is growing in popularity due to its claim that practitioners can eliminate allergies and all other types of sensitivities. Nambudripad's treatment for any specific allergen is a composite of energy balancing techniques, clinical muscle responsive testing, acupressure, and diet schemes. NAET states the ability to desensitize individuals from allergens by non-invasive, pharmaceutical-free intervention⁸.

In November 1983, Doctor Devi S. Nambudripad founded NAET. Since then, healthcare practitioners have incorporated her treatments into their practice. The treatment follows simple sets of techniques and protocols for an allergen. When followed correctly, and determinant upon the severity of the allergen, NAET claims that individual allergens may be eliminated in just a couple of treatments. NAET protocol amends, however, that only one allergen is treated at a time. If an individual is not seriously immunocompromised, each allergen can be alleviated by these techniques and treatments⁸.

The most severe of all allergic reactions is caused by the IgE antibody, which is classified as Type I Hypersensitivity. When the peanut allergen is introduced into the body via ingestion or inhalation the result is a cascade response resulting in a moderate to severe allergic reaction. The complex reaction that follows involves

binding the allergen to the effector cell by a bridge formed from the IgE antibody. The result is a degranulation of the cell, which releases histamines, serine proteinases (e.g. tryptase), and other chemicals into the blood stream and tissues. These chemicals are what cause the physiologic signs of an allergic reaction such as anaphylaxis. Type I Hypersensitivity produces a rapid rate of response and symptoms are seen within 10 – 60 minutes of exposure.

The IgE-mediated reaction is the basis of this study. NAET states that it can eliminate IgE-mediated food allergies through non-invasive, holistic methods. Participants in the study will have their baseline serum, peanut specific IgE, peanut specific IgG and tryptase levels collected before their involvement in treatment and then immediately following oral peanut challenge done by the practitioner.

A limited number of studies and research have been carried out with regards to NAET. However, the vast majority of these studies have been conducted by Nambudripad's Allergy Research Foundation (NARF) and published within the foundation's own non-peer reviewed book: *The Journal of NAET Energetics and Complementary Medicine*⁶. Among these are milk and wheat allergy reduction studies, involving the measurement of IgG, IgM, and IgE antibody levels over a specified period of time. The potential for bias in the conclusions of a private publication enhance the need for further evaluation^{3,7}. Nonetheless, none of these studies have looked at peanut specific antibodies, and NAET's methods are "unproved at this time"¹¹.

Due to the severity of IgE-mediated reactions a physiological change within the participant should be detected. The relationship between this peanut allergy treatment and the change in antibody and tryptase concentrations indicate that NAET's claim could be valid.

2. Methodology

Participants aged 6-12 who presented with a history of a peanut allergy of any severity were recruited from local school districts by means of fliers supplied to school nurses. Inclusion criteria were based primarily on a history of a peanut allergy confirmed previously by scratch tests or allergic reaction. Exclusion criteria were based on any condition requiring immunosuppressive drug therapy or previous treatment for food allergy using NAET⁴. However, the exclusion criteria were not met by any of the subjects. Participants and their parents were questioned using an entrance survey regarding the severity of their peanut allergy and signed the consent form prior to NAET treatments.

NAET protocol suggests that patients be treated for 15 basic allergens, comprising the first 15 treatments of the participants. The basic 15 allergens were treated sequentially: BBF (brain-body formula), egg, calcium, vitamin C, vitamin B complex, sugar, iron, vitamin A, mineral, salt, grain, yeast, stomach acid, base, and hormone mix⁸. The remaining treatments were comprised of a nut mix including peanuts and walnuts, and then anxiety or fear relating to allergen exposure. Each subject underwent 18 NAET treatments within 8 weeks. While holding a glass vial containing the specified allergen, the subjects laid face down as the practitioner stimulated the nerve roots on both sides of the spine. The subject then remained in the clinic for 15 minutes holding the vial, after which they are instructed to avoid exposure to the allergen for at least 25 hours.

During the final treatment the participants underwent a progressive oral peanut challenge. The participants were tested for overall energy balance and for muscle strength while holding the nut mix vial. The initial blood pressure was measured. The participants then held a raw peanut in one hand and were tested for muscle strength. Following ten minutes of lying and holding the peanut, blood pressure was measured and skin evaluated for any signs of reaction or irritation. The participants were then instructed to moisten their lips and thoroughly rub the peanut on the lips, and evaluated for ten minutes. Blood pressure was taken and the participant evaluated for any signs of allergic reaction. The participants were then instructed to consume approximately half of a peanut, and closely watched for ten minutes. In cases where any sign of a potential reaction occurred, participants were quickly treated by spinal nerve root stimulation. A final blood pressure measurement was recorded.

Venous blood specimens were collected prior to starting the series of treatments, and within one hour after the oral challenge. All blood samples were collected in serum separator tubes (SST), centrifuged for five minutes at 3800 rpm, the serum frozen at -70°C, and tested within one month for peanut specific IgG, IgE, and tryptase. Testing was performed at ARUP Laboratories using quantitative ImmunoCAP® and fluorescence immunoassay methods².

3. Results

Results for this study can be divided into observations and then measurable data. Observations consisted of what was observed by the researcher upon exposure of peanut to the participant during the progressive oral challenge. Measurable data constitutes the serum antibodies and tryptase levels measured at baseline and then post challenge.

A member of the research team was present for the progressive oral challenge of each participant. For each case blood pressure and pulse remained within normal ranges for their respective age group. Throughout the progressive challenge participants did not express any significant reaction after ingesting the peanut.

As indicated by Table 1, there were no significant changes in serum peanut specific IgE, peanut specific IgG, or tryptase levels in any of the participants. Figure 1 illustrates the lack of elevation in the baseline of tryptase post-challenge with peanut. Reference ranges for measured levels are given in Table 2². After consultation with statistical analysts, the research team applied no statistical tests, such as paired t-tests, to the data due to the size of the participant group.

Table 1. Comparison of analyte measurements pre- and post-NAET treatment

Participant	Peanut IgE (kUA/L)		Peanut IgG (mgA/L)		Tryptase (µg/L)	
	Pre	Post	Pre	Post	Pre	Post
G03 (1)	>100	>100	16.40	15.20	7.45	6.62
G04 (2)	0.16	0.13	7.09	9.35	6.91	6.85
G05 (3)	>100	>100	9.86	11.40	6.02	8.16
G07 (4)	1.78	1.45	3.46	2.79	13.10	13.60
G08 (5)	21.00	22.20	5.63	6.03	5.79	4.52
G09 (6)	0.10	0.10	3.02	4.70	4.04	4.10

Table 2. Reference intervals for measured analytes

<u>Peanut IgE (kUA/L)</u>		<u>Peanut IgG</u>
<0.10	No significant level detected	<6.8 mgA/L
0.10 - 0.34	Clinical relevance undetermined	
0.35 - 0.70	Low	
0.71 - 3.50	Moderate	
3.51 - 17.50	High	<u>Tryptase</u>
>17.51	Very High	0.40 – 10.90 µg/L

Table 3. Observed symptoms pre-treatment and post-oral challenge for each participant.

Participant	Symptoms	
	Pre-treatment	Post-oral challenge
1	Hives, swelling of tongue and throat, anaphylaxis	No Reaction
2	Rash, hives, throat constriction	No Reaction
3	Rash, hives, swelling, difficulty breathing, anaphylaxis	12 hour-delayed hive reaction on abdomen. Treated with inflammation cream.
4	Swelling lips, dry scratchy throat,	No Reaction
5	Hives, swelling, breathing troubles	Slight dyspnea, 25 mg Benadryl given. No further reactions noted.
6	Sore, scratchy, swelling throat, headaches	No Reaction

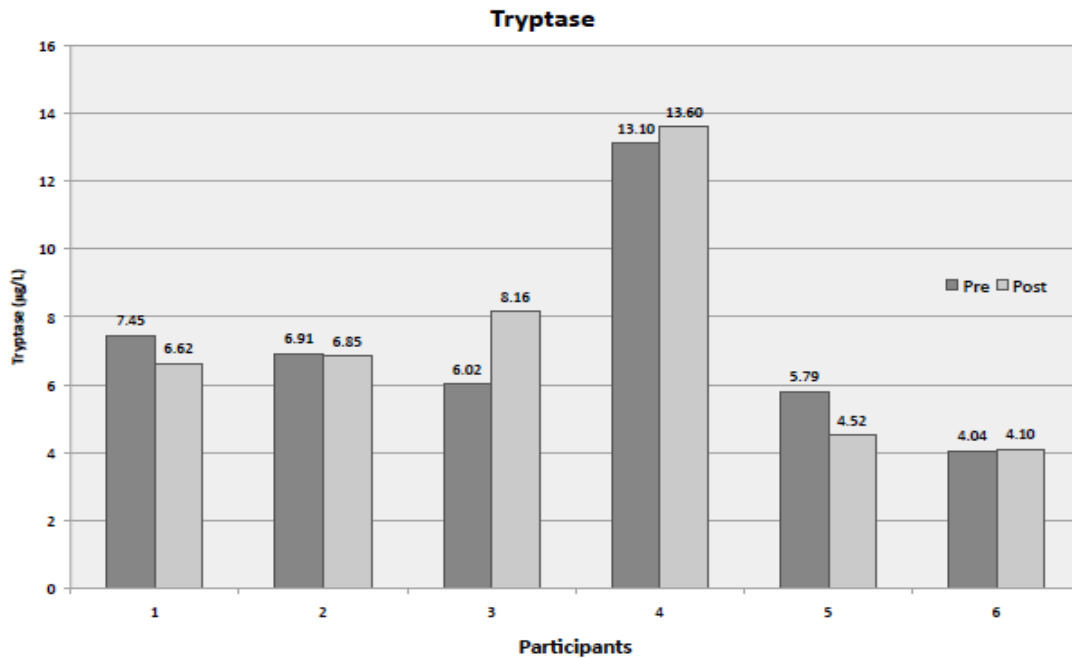


Figure 1. Comparison of the enzyme tryptase pre- and post-NAET treatment

4. Discussion

The NAET hypothesis is that the presence of an opposing electromagnetic field from a substance may adversely affect the energy of the human body. A disturbance in the energy pathways leads to muscle spasms near the spinal nerve roots, causing misalignments of the nervous system and ultimately leading to the symptoms associated with

disease or allergic processes. While in the presence of the allergen, stimulation of the spinal nerves relieves these misalignments, and effectively reprograms the energy pathways to tolerate the allergen and prevent reactions⁸.

During a physiologic allergic response, the immune system activates and causes symptoms of itching, hives or anaphylaxis. IgG and IgE antibodies are produced by lymphocytes upon exposure to a foreign antigen, and remain in circulation for quick antigen recognition. When IgE antibodies are re-exposed to an allergen, they bind to receptor sites on mast cells. Mast cells, a type of granulocyte in the peripheral tissue, are highly concentrated with histamine, heparin, and serine proteases such as tryptase. Binding of IgE antibodies to the mast cell receptors causes subsequent degranulation of the chemical contents, promoting the inflammatory reaction and anaphylaxis^{6,9,10}.

As tryptase is released, nearby mast cells are stimulated to activate and release their contents, and more cells are attracted to the site of activation, thus rapidly amplifying the reaction. Increased serum tryptase levels are indicative of an immunologically mediated allergic reaction, and cause the clinical manifestations of anaphylactic bronchoconstriction and severe hypotension⁹.

Each of the participants had a history of allergic reaction when exposed to peanuts. Documented symptoms included immediate onset of nausea, vomiting, itching, hives, and/or anaphylaxis with the necessity of emergency treatment. The serum concentration of peanut specific IgG, peanut specific IgE, and tryptase were analyzed prior to NAET treatment as well as after the oral peanut challenge. No significant change was seen in any of the concentrations. However, it is important to note that tryptase levels did not elevate to any significant manner (see Normal Reference ranges given in Table 2). There is raised Tryptase level seen in participant 4 both pre- and post-treatment. It should be noted, however, that normal reference ranges are approximated average values seen in the vast majority but not always in the physiology of every patient. Thus, it is noted that while the post-treatment tryptase level of participant 4 is elevated, it is not significant in relation to the pre-treatment draw. Tryptase concentrations maximize after 15-120 minutes, making it an ideal indicator for antibody mediated allergic reaction⁶. It would be expected that the concentration of tryptase would drastically increase during an immune response. With the concentrations of antibodies remaining constant, it seems that an allergic reaction would be inevitable. However, the consistency of tryptase levels indicates that mast cells did not degranulate, perhaps indicating that the antibodies did not bind the mast cell receptor sites⁶.

Each participant was closely monitored during the oral peanut challenge. No significant reaction was observed – only minor complaints of temporary oral tingling, pain, anxiety, and nervousness. Blood pressures were monitored throughout the challenge and remained constant. The participants were contacted 1-2 weeks after the oral challenge. Each had eaten peanuts in some form, with the worst reactions being moderate hives or nausea. Each reported that reactions had significantly decreased and were no longer severe.

The mechanism of action of NAET treatments as it relates to immunological activity is not fully understood at this point. Although it may be thought that the treatment mechanism is due to a placebo effect, this is an illogical argument. For a placebo effect to be effective one must believe that treatments or medications are genuinely authentic and beneficial. Some participants have known for several years that peanuts are hazardous to their health and potentially fatal. During the peanut challenge, these fears often overwhelmed confidence in the NAET treatments. Fear of potential consequences was manifest in many of the participants through anxiety, apprehension, and nervousness. With such emotions present, the placebo effect cannot be successful¹.

Due to the limited number of participants, further research is needed to fully understand the mechanism of NAET. However, one cannot overlook the absence of significant reaction when compared to previous anaphylaxis. Based on the data provided, it appears that clinical improvement may have occurred through a mechanism independent of IgE, IgG and basophils and mast cell responsiveness⁵. Therefore, further studies evaluating different routes of the allergic response with an increased participant population could identify the specific mechanism by which NAET works, and explain the observed lack of allergic reaction.

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