

## CASE REPORT

# Alleviation of Peanut Allergy Through Nambudripad's Allergy Elimination Techniques (NAET): A Case Report

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## Disclosure

The author was the treating physician for this patient. He is also the current director of research for the NAR Foundation, which is a non-profit organization whose main goal is to investigate the risks or benefits of NAET.

## Key Words

Anaphylaxis, peanut, acupuncture, allergy

## ABSTRACT

This case report illustrates the reduction of immunoglobulin E titers and clinical reactivity of peanut allergy in a patient, using Nambudripad's Allergy Elimination Techniques (NAET). The patient's initial symptoms and immunoglobulin E result correlated with an oral challenge test that showed signs of anaphylaxis upon ingestion of a fragment of dry-roasted peanut. The symptoms subsided after the patient completed a program of treatments, which lasted approximately 18 months. Moreover, the immunoglobulin E titers decreased in two different types of immunoassays after a total of 18 months: HY\*TEC enzyme immunoassay (Hycor Biomedical Inc, Garden Grove, California) and ImmunoCAP system (Phadia, Uppsala, Sweden). A repeat oral challenge test was performed with peanut concentrate solution (1:20 weight/volume extract by Greer Laboratories, Inc, Lenoir, North Carolina), and the patient exhibited no reaction after ingesting up to 1 gram of peanut protein gradually over a 3-hour period. This report could support further investigation into the possibility of successful desensitization toward food allergies using NAET.

## INTRODUCTION

Peanut allergy and anaphylaxis have been increasing in prevalence, in recent years, warranting attention and research due to their potential risk of anaphylaxis and death, particularly in children.<sup>1</sup> Immunoglobulin E (IgE)-mediated peanut allergy is generally a lifelong condition with minimal treatment options available at the present time.<sup>1</sup> Skin prick tests, serum IgE levels, and patient history are the typical data that are used to diagnose allergy, while the oral challenge test is confirmatory.<sup>2</sup>

Nambudripad's Allergy Elimination Techniques (NAET), developed in 1983, is an unconventional treatment for food allergies that combines aspects of traditional Chinese medicine with nutritional and chiropractic principles.<sup>3</sup> The technique is noninvasive, as acupuncture points may be stimulated by pressure alone.<sup>3</sup>

Patients who undergo NAET receive a protocol set of treatments consisting of firm, rapid pressure stimulation that is applied to the "Hua To JiaJi" points from traditional Chinese medicine (TCM), as well as designated points down the spine and along the paraspinal muscles which help stimulate the intercostal nerves.<sup>4</sup> The patient then receives standard acupuncture or acupressure along the front of the body on Large Intestine 4, Large Intestine 11, and Liver 3 points from TCM.<sup>4</sup> At times, the practitioner may decide to use additional acupuncture points such as spleen and heart points.<sup>4</sup> The entire procedure is performed while the patient holds a homeopathically prepared vial of an allergen, such as peanut.<sup>4</sup>

Similarly, patients who suffer from anaphylaxis also receive treatment while holding real food samples that are sealed in glass jars.<sup>4</sup> Patients with a history of severe allergies are required to undergo a basic proto-

col of treatment using the homeopathic vials, however, before advancing to the step using real food samples in glass jars.<sup>4</sup>

Although acupuncture alone has been studied and shown to be highly effective in allergic conditions, NAET has yet to be fully researched.<sup>4,5</sup> The efficacy of NAET in treating allergic conditions, however, has been preliminarily investigated through a randomized, controlled trial of 60 subjects diagnosed with allergy-induced autism.<sup>6</sup> The results indicated that 77% of the experimental group were able to attend regular school after completing a program of NAET treatments for 1 year, whereas none of the subjects in the control group improved during the same time period.<sup>6</sup> An allergy symptom survey also showed significant improvement in subjective symptoms for the experimental group in contrast with the controls.<sup>6</sup>

In addition to this study, a small and non-controlled trial of six subjects with peanut anaphylaxis showed that NAET was able to relieve allergy symptoms significantly in 67% of the patients, although no significant change was seen in serum IgE levels. However, the subjects treated with NAET did not show a change in serum tryptase levels although they were exposed to peanut. Normally, serum tryptase would elevate with a severe allergic reaction.<sup>7</sup>

The only other published report details the case of a child with eczema from food allergies that may have been cleared after receiving NAET.<sup>8</sup> Thus NAET has yet to be accepted conventionally due to paucity of research studies, although the mechanism of acupuncture has been well-studied in the literature and even accepted by the standard medical community.<sup>5,7</sup>

This report describes the first case of a patient with documented peanut allergy experiencing alleviation of

symptoms of anaphylaxis as well as reduction in serum IgE levels after NAET treatments. The results of oral challenge tests during the initial phases and after NAET treatments also support these findings.

### PRESENTING CONCERNS

A 19-year old woman presented to our clinic for symptoms, upon multiple occasions of peanut exposure, which included tongue swelling, bronchospasm, erythema, and edema at points of contact. She had been able to manage each of these episodes with 50 mg of oral diphenhydramine. Her problems began in preschool, when she was served celery with peanut butter and immediately developed hives. The symptoms worsened as she became older.

### CLINICAL FINDINGS

In addition to peanuts, the patient also had similar anaphylactic reactions to walnuts. With other nuts, she would get skin irritation around her mouth but not anaphylaxis. Past medical history also includes anaphylaxis to shrimp ingestion, childhood asthma, eczema, allergic rhinitis, and sinusitis.

She also had an extensive family history of eczema, allergies, and asthma. Her physical examination was remarkable for erythema and eczema on the limbs and neck. Lab work done on December 12, 2011, showed positivity for immunoglobulin E to peanut (Table 1).

**Table 1** HY\*TEC Serum Immunoglobulin E Levels for Peanut Protein (IU/mL)

	Before NAET	During NAET	After NAET
Date	12/30/2011	3/7/2013	11/09/2013
HY*TEC	28.54	13.00	11.14

Abbreviation: NAET, Nambudripad's Allergy Elimination Techniques.

### DIAGNOSTIC FOCUS AND ASSESSMENT

According to the patient's symptoms and IgE test results, a diagnosis of severe peanut allergy was determined. After discussing all possible benefits, risks, and alternatives with the patient, it was mutually decided to begin NAET in order to see if overall reactivity and lab results would decrease.

### THERAPEUTIC FOCUS AND ASSESSMENT

Treatments were started on May 8, 2012, with an epinephrine injector and oral diphenhydramine on-hand during the entire procedure; treatment lasted until November 9, 2013. Serial immunoglobulin E measurements were taken by two different types of enzyme immunoassay, HY\*TEC (Hycor Biomedical, Inc, Garden Grove, California) and ImmunoCAP (Phadia, Uppsala, Sweden) at different points in time (Tables 1 and 2).

During treatment with NAET, the patient held various, homeopathically prepared solutions involving food, chemical, mold, and environmental allergens based on protocol from NAET formulas. Additional

**Table 2** ImmunoCAP Serum Immunoglobulin E Levels for Peanut Protein (kU/L)

	Before NAET	During NAET	After NAET
Date	7/13/2012	3/7/2013	11/09/2013
ImmunoCAP result	36.20	20.10	12.60

Abbreviation: NAET, Nambudripad's Allergy Elimination Techniques.

office visits were spent treating the patient for real peanut samples sealed in glass jars. A board-certified allergist (not affiliated with our clinic/research) was responsible for the first oral challenge test, on May 24, 2012, using a roasted, dry peanut. It showed a positive reaction, with itching and hives as well as a 55% decrease in peak flow after ingestion of half a peanut. The test was stopped approximately 45 minutes into the procedure for patient safety. A skin prick test showed a result of 4+ reaction with appropriate controls.

After a majority of the NAET treatments were completed, a second board-certified allergist (not affiliated with our clinic/research and unknown to the first allergist) performed another oral challenge test with peanut concentrate (up to 1 g). A skin prick test was done again and showed a result of 3+ reaction with proper controls.

The second oral challenge test, on April 5, 2013, showed no symptoms with up to 1 g (1:20 weight/volume extract) of peanut protein concentrate from Greer Laboratories, Inc (Lenoir, North Carolina). The patient was monitored at gradually increasing doses of peanut concentrate for the total duration of 3 hours.

### FOLLOW-UP AND OUTCOMES

The patient has since noticed clinical improvement upon exposure to peanut, allowing her to travel internationally without any signs or symptoms that had previously been problematic for her. Finally, serum IgE levels were monitored throughout the process and eventually decreased after NAET (Tables 1 and 2).

### DISCUSSION

Currently, the only established option for peanut anaphylaxis is avoidance, but researchers have tried to use forms of immunotherapy to help with the reactions.<sup>9,10</sup> Anaphylaxis with immunotherapy for food allergies is a known risk, and its use has been limited to environmental allergens or contactants.<sup>9,10</sup> There is an abundance of literature supporting ancient Chinese medicine in the treatment of atopic and allergic disease with minimal side effects.<sup>1,5,11</sup> NAET, which is based on these acupuncture theories, would then logically be a good candidate for further study regarding the treatment of food allergy.

Although there have not been many studies describing the natural variation of IgE levels in patients over time, most references state that IgE levels for peanut do not decrease over time.<sup>12</sup> This patient's levels dropped two classes within 18 months. Recent literature shows that serum IgE testing may be highly predictive (>95%) of reaction to oral challenge testing, especially when the

peanut level reaches 15 KU/L according to ImmunoCAP technology.<sup>13</sup> So it is plausible that the patient's reactivity to oral challenge testing diminished with NAET treatments since the serum level dropped from 36.2 to 12.60 KU/L, well below the cut-off of 15 (Table 2).

In addition, different modalities of IgE testing have been shown to have different results.<sup>14</sup> To account for this possibility, blood specimens from the patient were sent to two different labs, ImmunoCAP and HY\*TEC for two immunoassay methods. Significant differences between different methods is seen in only 5% to 10% of cases, but reliability within a single type of assay is considered to be very consistent.<sup>14</sup>

The oral challenge test is a very good indicator of anaphylaxis, given the correct food protein is used in the test.<sup>12</sup> In this report, the oral challenge test was initially positive and then became negative after the NAET sessions. The standard medical approach is to look at the clinical history of symptoms, not just the serum IgE or skin-prick test outcomes.<sup>15</sup>

Although it is difficult to evaluate the efficacy of NAET based on one case report, this case supports the idea that, if done correctly and sufficiently, NAET could decrease immunoglobulin levels and increase the threshold of sensitivity to peanut on oral challenge test. It is possible that in the prior trial of NAET for peanut anaphylaxis done by outside researchers in Utah, the number of treatments given was insufficient to decrease immunoglobulin level despite reducing symptoms of allergic reactions.<sup>7</sup>

The anaphylactic response that this patient experienced to the peanut allergen prior to NAET was no longer evident after treatment for about 1 year. However, the possibilities that either the patient naturally outgrew the allergy or that the acupressure itself was responsible for the reduction in allergy can only be researched in larger and controlled trials.

A three- or four-arm trial with a larger number of subjects would be able to determine the efficacy of NAET in a better fashion. Controls would also be needed for the homeopathic vials and food samples to determine if acupuncture itself would be sufficient. The reduction in clinical symptoms as well as IgE levels for peanut allergy, in this case, suggests that acupuncture techniques, specifically NAET, may be beneficial for certain individuals with anaphylaxis. This report strongly supports further research into NAET to determine if it will be of benefit in helping to mitigate the dangerous effects of immunotherapy or accidental ingestion.

## PATIENT PERSPECTIVE

*I started NAET 2 years ago due to my high peanut allergy. In the beginning of the treatments, I wasn't fully certain what the outcome would be. Coming into this, I knew it was going to be a tough process. One year after, results really start to show. I then realized that this process takes*

*patience and if you are mentally strong and determined that the treatment will work, results will show. Two years later, my perspective on doing the NAET treatment has changed. I am not just doing this for myself but also to help other people who have the same condition as me and will open a door to what hopefully could eliminate peanut allergies.*

## INFORMED CONSENT

The patient was fully informed of all risks, benefits, and alternatives when discussing the NAET treatments for peanut allergy. She accepted these terms and signed an informed consent before starting any treatments or evaluations for peanut allergy.

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