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**Introduction of Peanuts to the Pediatric Patient**

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**Abstract**

Peanut allergies have been diagnosed exponentially over the last ten years and are more severe now than ever before. (DuToit et al, 2106) Some of the latest statistics are citing more than double the amount of peanut allergies diagnosed in the last 20 years. Guidelines set forth in 2010, by the American Academy of Allergy, Asthma, and Immunology stated that peanut, milk, soy, wheat, egg, and other tree nuts were to be avoided until three years of age, unless these patients have other chronic illnesses such as celiac or other atopic conditions. If so, the patient is to abstain from these items until the age of five years. Once the patient reaches this stage of life, foods are to be introduced slowly, in small quantities, one food at a time. (American Academy of Allergy, Asthma & Immunology, 2010) The guidelines have changed in the last two years after a study known as Learning Early About Peanut Study, LEAP, became published in 2015. It was previously advised to withhold peanut-laden foods until at least three years of age. Recent guidelines suggest children who are exposed to these food sources can allow for desensitization from these allergens. Before these guidelines, the immune systems are completely competent, minimizing potential anaphylactic reactions. (Learning Early About Peanut Study, 2011) The results of this project aim to justify the newest guidelines and research and show that introduction to the peanut protein at age four to six months, allows for immune competency in the pediatric body and quite possibly in utero. The pathophysiology of the immune response is exponentially different as the body continues to be introduced to cross-reactive allergens as you age.

**Introduction**

“Please refrain from any sort of peanut or peanut butter snack in Simmon’s Elementary School. We have a child who is very allergic to peanuts in the school system.” How many times have you had to see a note such as this sent home with your child on the first day of school? Pediatric allergies are becoming more prevalent as seen by your child on the first day of school? (LEAP, 2015) The Persistence of Oral Immunotherapy is showing promising results to those patients with a probable outcome of allergies. (Piliang, 2009) In 2011, a clinical trial called the LEAP study was completed. This trial has shifted the way some providers practice medicine. This study concluded that it is not beneficial to withhold peanuts and other tree nuts from children, and in fact, is thought to be harming the child by not allowing them to be exposed to this at the age of six months. (LEAP, 2011) This research also stated that in the clinical atopy patient, all of these potential allergens should be held until the age of five. New research now suggests beginning these patients at the age of 4 months or upon first consumption of food sources. (AAAAI, 2017) Some research states that in utero the fetus potentially receives some immunity from the mother. Other research is controversial to the statement above, denying any link between the mother and child through the placental barrier prior to cutting the cord.

**Statement of the Problem**

For many years, parents have been advised to withhold peanuts from children before the age of six to prevent a peanut allergy in a small child. In 2015, a clinical trial called the LEAP study was completed that has shifted the way some providers practice medicine. This study concluded that it is not beneficial to withhold peanuts and other tree nuts from children, and in fact, is thought to be harming the child by not allowing them to be exposed to this at the age of six months. (LEAP, 2011) This research also stated that in the clinical atopy patient, all of these potential allergens should be held until the age of five. New research now suggests beginning these patients at the age of 4 months or upon first consumption of food sources. (AAAAI, 2017) Some research states that in utero the fetus potentially receives some immunity from the mother. Other research is controversial to the statement above, denying any link between the mother and child through the placental barrier prior to cutting the cord.

**Research Questions**

- Does the introduction of peanuts to a child at the age of six months decrease the likelihood of IgE-mediated response from the body?
- What effect does atopy play in the increased likelihood of food allergies for children diagnosed with these conditions?
- What are the possible treatment options for desensitization to peanuts?
- What guidelines should be followed? And Why?

**Literature Review**

**Clinical trials are being performed on the introduction of peanuts to patients in the peri-pregnancy state.** These trials are showing promising results to those patients with a predisposed sensitivity to food allergens due to atopy. Other studies, such as the LEAP study have shown that children who are exposed at young ages to food allergens, such as eggs, milk, wheat, soy, and peanuts, are allowed to build up a tolerance to these highly allergenic foods if exposed repeatedly at a young age, before antibodies have been produced. (LEAP, 2011)

**Children with atopy, marked by eczema (atopic dermatitis), allergies, and asthma are 20% more likely to exhibit food allergens to items such as peanuts. There is a link between the body’s abnormal IgE response to pollens and the response to peanuts. It is thought that the dry, sensitive skin of an atopic patient is a result of loss of essential fatty acids, such as linoleic and linolenic acid, which help to create the epidermal barrier. When the epidermal barrier is weakened due to water loss and dryness, atopics, such as pollens, grass and dust mites, are able to initiate the Th2 lymphocyte response.** (Piliang, 2009)

**Summary**

Skin Prick Tests, (SPT) are live doses of allergens used to test the patient for sensitivity to peanuts as those who avoided peanuts throughout the pregnancy and first year of life according to the LEAP-ON study. The study suggests that less than 5% of those research subjects that ingested peanuts were sensitive to them. (LEAP-ON 2015) The group that avoided all peanut-laden foods tripled the amount of allergies to peanuts. Atopic children are more Th2 shifted immunologically, allowing for increased sensitivity to allergens with more probable outcome of allergies. (Piliang, 2009)

**Applicability to Clinical Practice**

Based on the research presented, it has been highly encouraged that children without atopic conditions be offered peanut laden foods at the age of six months. If these patients have an egg allergy or mild to moderate eczema, it is reasonable to introduce the peanut laden foods with a discussion of education to parents and caregivers to carefully introduce small quantities of peanut laden foods. These patients with suspected allergies and severe eczema are to undergo IgE-mediated tests and skin prick tests prior to administration. These patients, if positive to the SPT or IgE tests, suggest a high likelihood of allergy when exposed to a small amount of allergen, most appropriately given in a controlled environment, such as a clinic or hospital. (AAAAI, 2017)

**References**


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