Know Nuts: Detecting the Presence of Peanut Allergens in Food

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Background

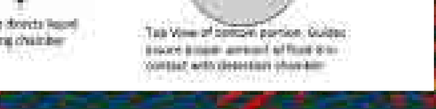
Peanut allergies are one of the most common types of food allergy.
- Not likely to be outgrown
- Currently no cure
- Food avoidance is the only means of preventing reactions.

Many effects beyond a potential histamine response
- Causes social isolation due to reluctance to eat outside of one's home in order to avoid the allergen.
- Relying on food avoidance can be difficult due to unexpected contamination.

Clear need for a robust allergen avoidance method
- Our novel detector:
  - Utilizes antibodies to determine presence of peanut allergen
  - Is portable, reusable, and inexpensive.

Clinical Need

No curative therapies for food allergies
- Avoidance is the only guaranteed method
- Strict dietary restrictions are necessary



Description of Market

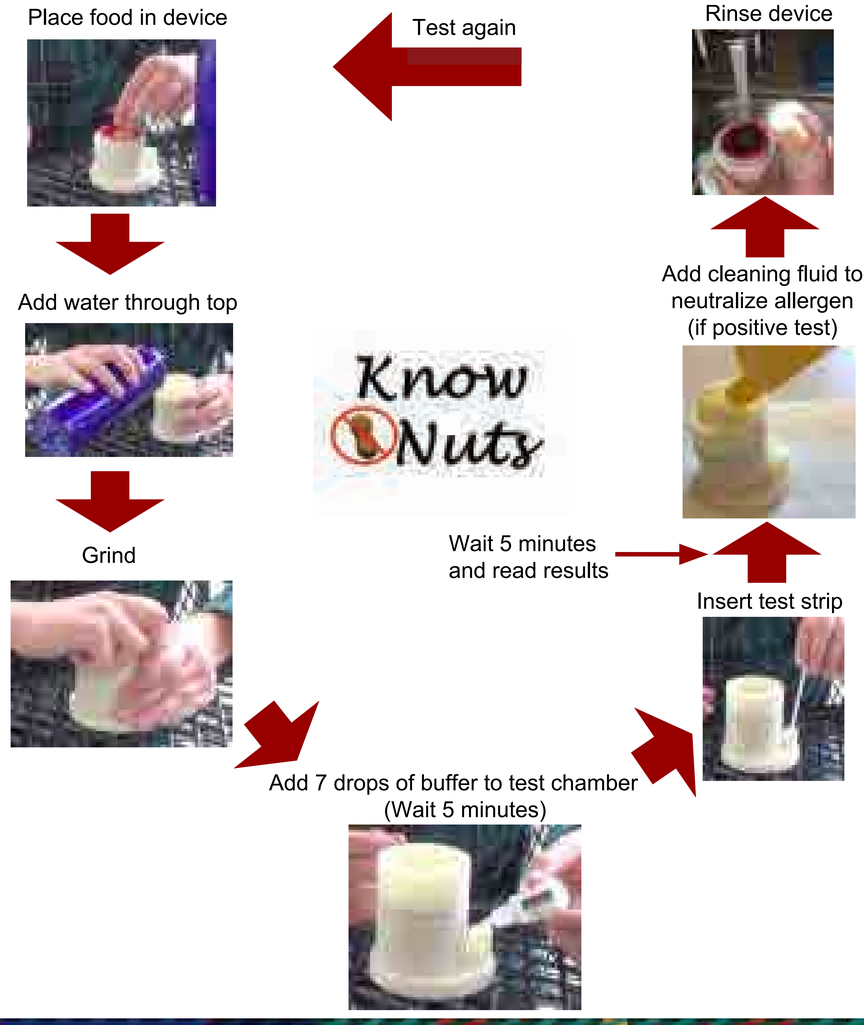
In the United States about 3 million people have peanut allergies.
- Over 1,600 caregivers reported that having a child with a food allergy has a significant economic impact.

Target Market

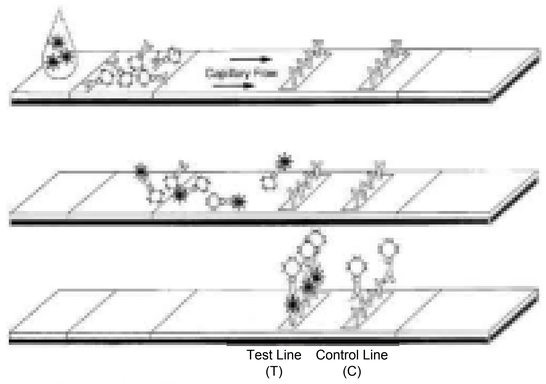
- Our target users require ingestion of the allergen for a reaction, rather than a reaction brought on by allergen present in the air.

Description of Device

Device Workflow



Testing the Lateral Flow Assay

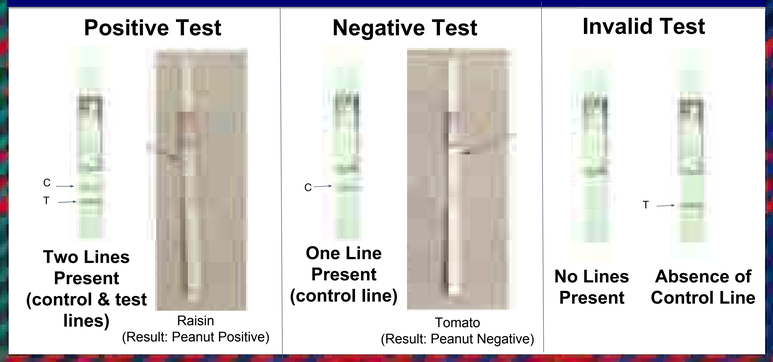


Developed Operating Procedure:
-Tap water works as the solvent
-Coffee filter works to remove food particles
-Bleach works as allergen neutralizer

Food Items Succesfully Tested: Trail mix components, tomato, Special K cereal, Butterfinger, Rice Krispies, bread crumbs

Limitations: Won't detect a 100% peanut sample; qualitative not quantitative result

Reading the Results



Novelty

- Currently no devices on the market made for portable peanut allergen detection.
- Nima uses a similar process to detect traces of the gluten allergen.
  - $279 starting price
  - Starting R&D for a peanut allergen detector

Our Device

Estimated Manufacturing Cost

One time device cost: $2.48 **Recurring cost per test strip:** $8.80

Accounts for:
- Individual parts bought in 5000 unit bulk orders
- Assembly and quality assurance

Regulatory Pathway

Anticipated to be a 510(k) submission
- Comparable devices on the market in terms of risk level.
  - Allows for the user to make a decision that could harm them if the information provided is incorrect.
- No predicate device for detecting peanut allergens

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