



FOOD allergy

&

ASTHMA

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FOOD ALLERGY & ASTHMA

- *Prevalence of asthma and atopic disease : 4 decade*
- *Investigation : asthma: vitE, vitc? , vitA(+ effect)
,polyunsaturated fatty acid, vit D, folate, fruits,
vegetables, metals, trace minerals(Na-mag-
selenium?- zinc?- copper)
& Mediterranean diet*
- *(bias: diet control-intake
-randomized- controlled)*



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- *Vit E high intake mothers during pregnancy: decrease wheeze but no relation to AD& AR*
- *Vegetables & fruits in mothers: protect wheeze in children*
- *Vit D in mothers: decrease wheeze in children*
- *vitD<30ng/ml in children & adult: airway hyperresponsiveness, lung function, attacks, GC response, anti-inflammatory of GC*
- *Controversy?*



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- *Fish consumption in early life : decrease asthma in 1-4 y/o*
- *High intake of Na : increase asthma& EI bronchospasm*
- *High magnesium In diet : decrease asthma*



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Breast feeding



- *The effect on subsequent asthma: unclear*
- *Breast milk: Ig –Ab- WBC- macrophages: decrease LRT infections but increase exposure to smoke & allergen*
- *But 2 large metanalysis: strongly suggest breast feeding : protective for asthma during 0-2 y/o*
- & lower protection till school age*
- *Hypothesis: protective effect on viral infections*
- *Protective effect overall 5-18 y, greater in poor countries*



FOOD ALLERGY & ASTHMA

- *PREVALENCE OF ASTHMA IS 1-30% IN DIFFERENT COUNTRIES(9%)*
- *INDONESIA 2%, UK 32%(13-14y-o)*
- *Prevalence of food allergy 1.6-47.5% in 17y/o, but by challenge test 4.2-5.7%*
- *Prevalence of FA by clinical & +ve food challenge: 2.6 to 3.5% during 10 to 20 y*



FOOD ALLERGY & ASTHMA

- *Asthma & food allergy 2 complex T2 mediated disease(environment-genetic)*
- *Similar risk factor : parental or family hx of allergy – AD- allergen sensitization*
- *Children with FA have higher risk of asthma*
- *+VE Asthma relation to non-IgE mediated FA*



FOOD ALLERGY & ASTHMA

- ***AROUND 48% OF ASTHMA HAVE FA***
- ***Half of children with FA have allergen respiratory disease***
- ***+ve SPT to egg predictor for asthma in 22 y/o***
- ***Food sensitization in 1st 2 y/o : increase asthma & AR : 10 -12 y/o***
- ***Hypersensitivity to food : persistent asthma(30%) at 24 y/o***



FOOD ALLERGY & ASTHMA

- *Asthma prevalence in children with FA is increased at 2-3 fold*
- *FA predispose asthma not only in childhood but also in adulthood*
- *Allergic march: infant & children with AD & FA : asthma & AR*



FOOD ALLERGY & ASTHMA

- *Variation of several genes: risk of FA & asthma, C11orf30-STAT6-TSLP*
- *Traffic air pollution- indoor allergen, smoke exposure in utero or after birth*
- *Environmental factor : epigenetic(DNA methylation- microbia alteration)*





FOOD ALLERGY & ASTHMA

- ***Gut microbiota predispose to asthma & FA, modified immune response***
- ***Gut microbiota : vaginal delivery- maternal milk- antibiotic, antacid: allergic disease***
- ***Gut microbiota dysregulation: decrease food tolerance***



FOOD ALLERGY & ASTHMA

- ***Unhealthy western diet : obesity : decrease control of asthma & fatty acid : inflammation***
- ***N-3 long chain polyunsaturated fatty acid : protect from FA BUT NOT ASTHMA***
- ***Low income patients : high indoor outdoor factors- lock of green space- mold-allergen- moisture- low care- underdiagnosed***



FOOD ALLERGY & ASTHMA

- ***Co-existence of FA & asthma : increase severity of both conditions***
- ***ER admitted asthma : 7.4 times :FA***
- ***in one study 50% of ER asthma referred had FA(in other pts. 10%)***
- ***IgE against cross reactive allergens:
Both respiratory & Food allergy***



FOOD ALLERGY & ASTHMA

Anaphylaxis in asthma

- ***In one study only one patient of 64 death of anaphylaxis (food), didn't have asthma***
- ***Asthma is a risk factor for death from other allergies***
- ***Peanut allergy: bronchospasm more severe in asthmatic patients***
- ***On the contrary: metanalysis : no evidence that asthma was a risk factor of severity of allergic Rx to foods***



FOOD ALLERGY & ASTHMA

SENSITIZATION: Intestine- skin

In AD : peanut emollient : peanut allergy

1-In mice : early feeding with food allergen : food tolerance

2-but exposure of inflamed skin to food allergen can cause sensitization : allergic GI Rx when the food eaten(the double exposure hypothesis)

3-In mice : epicutaneous sensitization to ovalbumin: bronchial eosinophilia after ovalbumin inhalation



FOOD ALLERGY & ASTHMA

- *4-Sensitization to food can develop through respiratory route*
- *Children who never ingested peanut and shrimp: asthma in inhaled these food particles*
- *Baker asthma: : flour : asthma due to inhaled wheat proteins*
- *w/u : sIgE test*
- *avoidance*



FOOD ALLERGY & ASTHMA

Goal of treatment : decrease asthma attacks & symptoms

-Treatment : age –symptoms- triggers- PFT-attacks

-Cromolyn- ICS-LA- LABA: decrease bronchial hyperresponsiveness : decrease Rx to foods

-SABA-ipratropium b- Mag sulphate- GC: inhibit effect of FA

*-Sever Rx to food allergens: avoidance –
im Epinephrin*

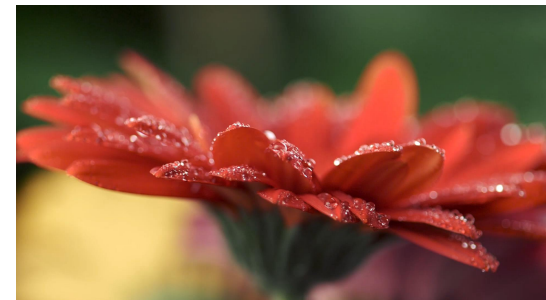




FOOD ALLERGY & ASTHMA

Novel treatment

- *Oral immunotherapy(OIT) to food in children with asthma& FA for IgE mediated FA*
- *Progressive increasing dose over a specific time interval*
- *OIT protocols are not yet standardized*
- *Unfortunately OIT is not cure for FA, but reduce the risk of accidental exposure*



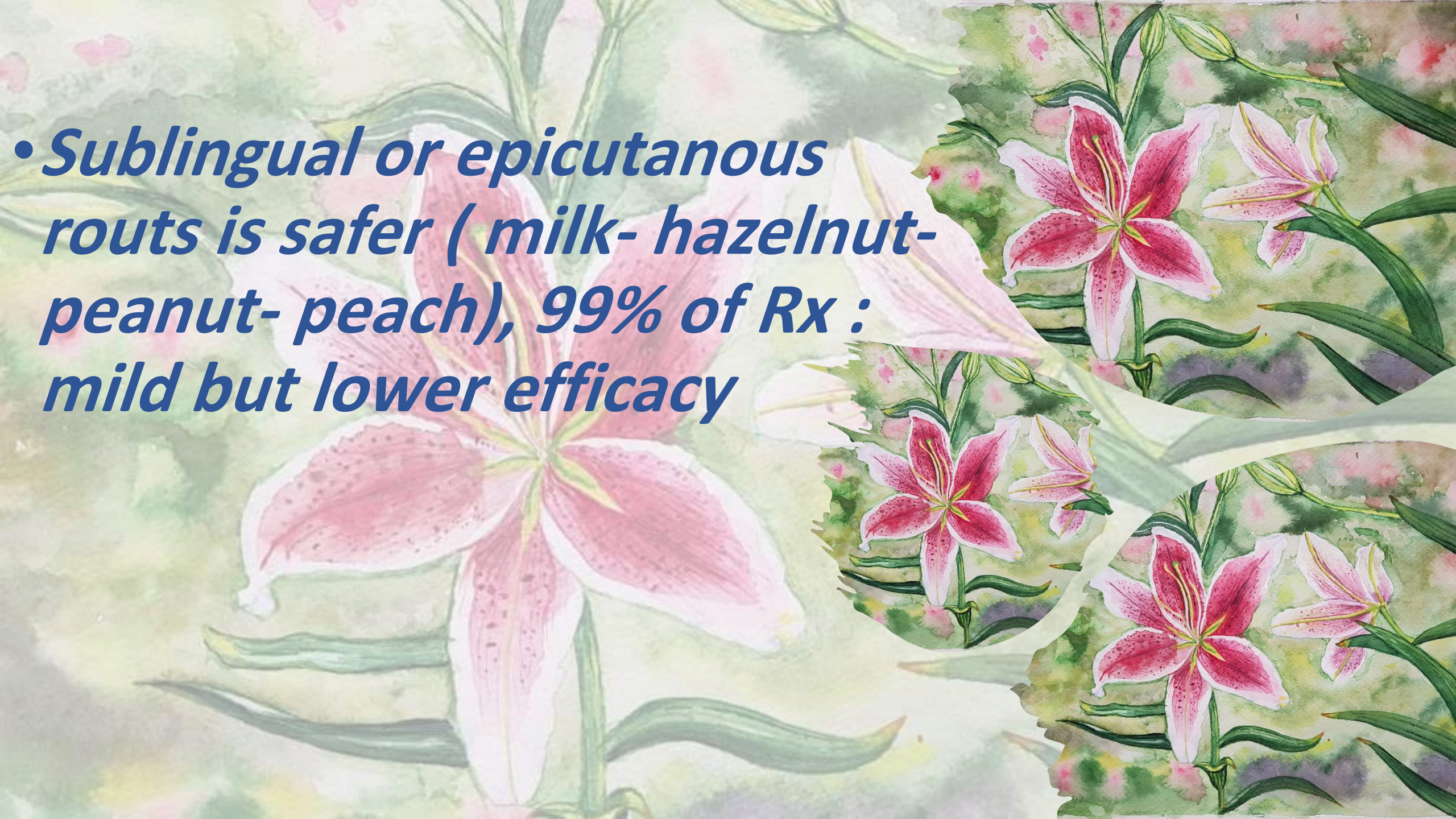
FOOD ALLERGY & ASTHMA

- *OIT Rx: GI- Skin- angioedema*
- *Life threatening Rx needs ICU*
- *Suboptimal control of asthma is a risk factor for Rx*
- *worse control of asthma*





- ***Sublingual or epicutaneous routes is safer (milk- hazelnut- peanut- peach), 99% of Rx : mild but lower efficacy***



BIOLOGICS

- *Omalizumab as monotherapy or added to OIT*
- *Asthma > 6y/o- urticaria- nasal polyp- FA. 1y/o*





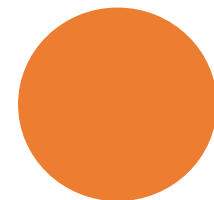




Food allergy



Food allergy























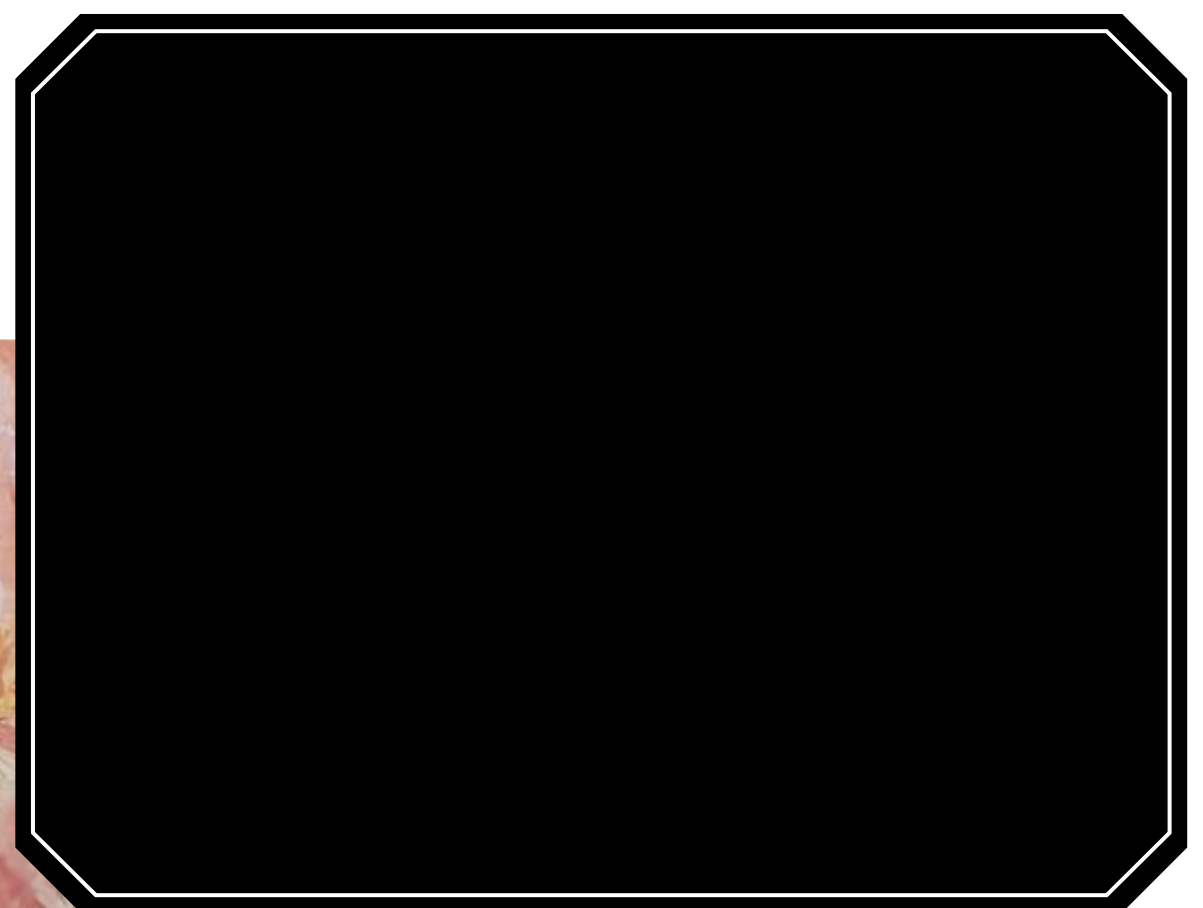














Anaphylaxis

food

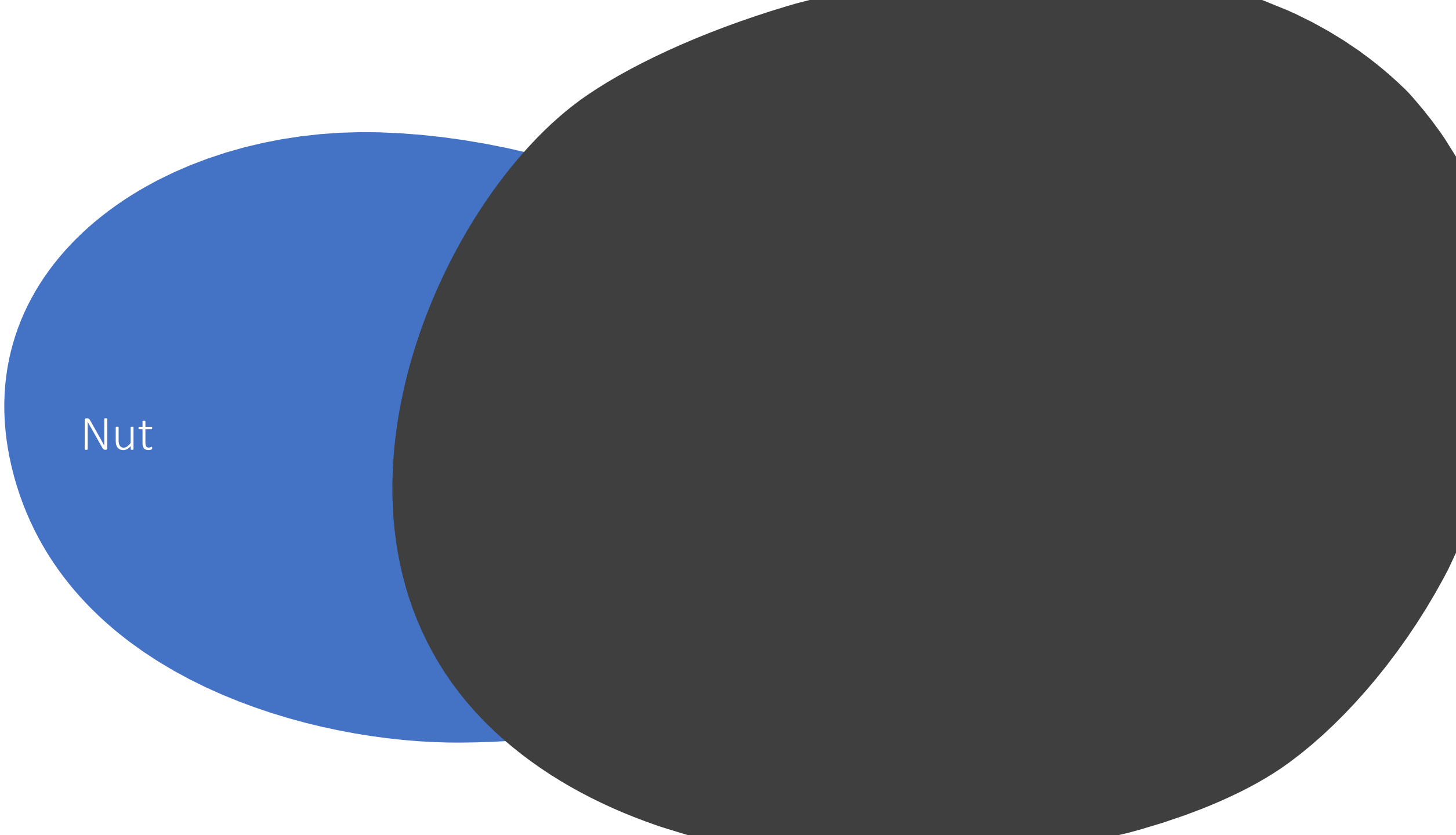
anaphylaxis

fish



Anaphylaxis

food



Nut

The image features two overlapping circles. The circle on the left is a medium blue color, and the circle on the right is a darker, slate blue color. The text is centered within the darker circle.

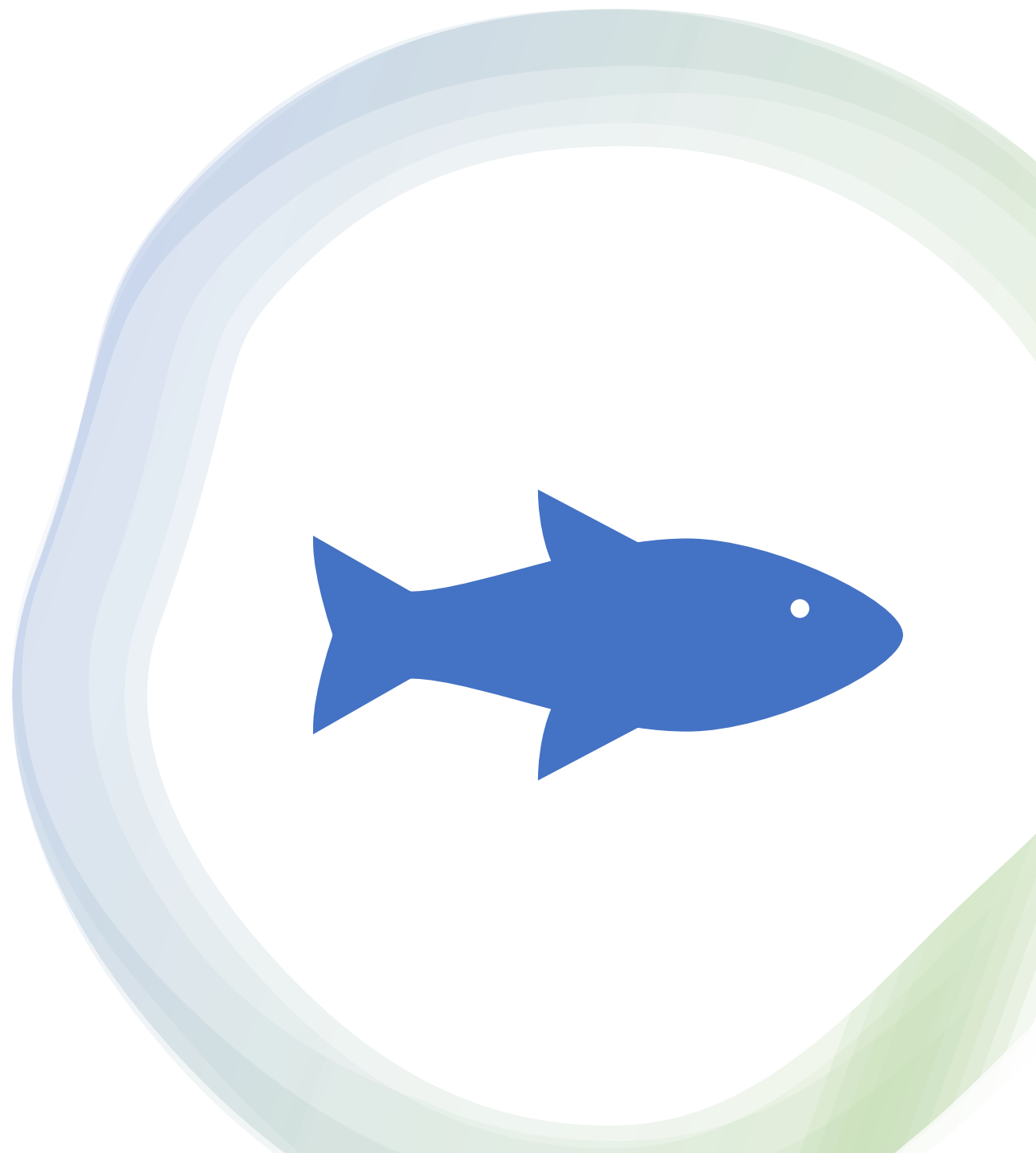
Three nut

Tree nuts



Fish

fish



A top-down view of a white bowl filled with a variety of fresh fruits and nuts. The ingredients include several bright red raspberries, a few green grapes, and several dark red grapes. Nuts are scattered throughout, including a large almond, a cashew, a walnut, and several smaller almonds. The bowl also contains a portion of granola, which is a mixture of oats and other grains. The word "food" is written in a white, cursive font across the center of the bowl, with a thin white underline beneath it. The background is a soft, out-of-focus light color.

food



Shock



food



food

food



A misty mountain landscape with dense evergreen forests and a large white text overlay reading "Shock". The scene is dominated by a thick layer of white mist or fog that fills the valleys and partially obscures the mountain peaks. The trees are dark green and appear as dense, vertical columns against the lighter background. The overall atmosphere is serene and somewhat ethereal. The text "Shock" is centered in the middle of the image in a clean, white, sans-serif font.

Shock



Shock



Shock



Shock

Lab



Shock

Lab



- *allergy*



allergy



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- *allergy*





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- *allergy*