



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكروفيلم

# بسم الله الرحمن الرحيم



**MONA MAGHRABY**



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التوثيق الإلكتروني والميكروفيلم



# شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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# جامعة عين شمس التوثيق الإلكتروني والميكروفيلم

## قسم

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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



**MONA MAGHRABY**



# **Sensitization to Rice in Allergic Children**

Thesis

*Submitted for Partial Fulfillment of Master Degree  
in Pediatrics*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سَبِّحْكَ لَا إِلَهَ إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ  
الْعَلِيمُ الْعَظِيمُ

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# *List of Abbreviations*

<b>Abb.</b>	<b>Full term</b>
ACE .....	Angiotensin converting enzyme
AD.....	Atopic dermatitis
APC.....	Antigen presenting cell
AR.....	Allergic rhinitis
BA.....	Bronchial asthma
BEAT.....	Beating Egg Allergy Trial
CM.....	Cow's milk
CMF.....	Cow milk formula
EAT.....	Enquiring About Tolerance
EC.....	Eosinophilic colitis
EG.....	Eosinophilic gastritis
EGE.....	Eosinophilic gastroenteritis
EIG.....	Early-introduction group
EoE.....	Eosinophilic oesophagitis
EPIT.....	Epicutaneous immunotherapy
FA.....	Food allergy
FLG.....	Filaggrin
FN.....	False negative
FP.....	False positive
FPE.....	Food protein enteropathy
FPIES.....	Food protein-induced enterocolitis syndrome
FPIP.....	Food protein-induced proctocolitis
GIT.....	Gastrointestinal tract
HEAP.....	Hen's Egg Allergy Prevention
HS.....	Heiner syndrome
IEC.....	Intestinal epithelial cells
IgA.....	Immunoglobulin A
IL.....	Interleukin
ITT.....	Intention-to-treat



## *List of Abbreviations Cont...*

<b>Abb.</b>	<b>Full term</b>
LEAP .....	Learning Early About Peanut Allergy
LP .....	Lamina propria
LTP .....	Lipid transfer protein
NHANES .....	The National Health and Nutrition Examination Survey
NIAID .....	National institute of allergy and infectious diseases
NPV .....	Negative predictive value
OAS.....	Oral allergy syndrome
OFC .....	Oral food challenge
OIT .....	Oral immunotherapy
PFAS .....	Pollen-food allergy syndrome
PPV.....	Positive predictive value
QOL .....	Quality of life
SIG.....	Standard introduction group
sIgE.....	Allergen-specific IgE
SLIT.....	Sublingual immunotherapy
SPT .....	Skin prick test
TN.....	True negative
TP .....	True positive
WHO.....	World Health Organization

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# INTRODUCTION

**F**ood allergy is a significant health concern that has adverse medical, psycho social and economic impacts on affected individuals and families (*Stallings and Oria, 2016*).

Food allergy has its origins in early life and affects 6% to 8% of the pediatric population. Some food allergies are commonly outgrown, whereas others are more likely to persist into adulthood. Milk and egg allergies, which are the most common allergies of childhood, are 2 allergies that are commonly outgrown in childhood (*Cecilia, 2019*).

Advances in diagnostic and therapeutic approaches, including implementation and revision of evidence based guidelines, along with enhanced insights into early intervention and prevention, have shifted paradigms and improved the care of individuals with food allergy. Further, progress toward active therapeutic options to mitigate the life-altering effects of food allergy has been substantial, ushering in a new era in food allergy with licensed active therapeutic interventions on the horizon (*Amy and Stacie, 2017*).

Newer strategies that are aimed to help develop tolerance to allergenic foods more quickly have emerged recently. These include: early introduction of baked forms of milk and egg if tolerated in children with cow's milk and egg allergies, desensitization to food allergens, use of probiotics in infants

with cow's milk allergy. There is evidence now in the literature that 70–75% of children with cow's milk and egg allergies can tolerate them when extensively heated. This could potentially make dietary restrictions easier and hasten the development of tolerance, although it remains difficult to predict which children will tolerate baked allergens (*Anagnostou et al., 2015*).

Rice is a cereal produced and consumed in large quantities around the world, but hypersensitivity reactions are rare. Allergic reactions to rice were first reported in patients experiencing asthma following rice flour exposure and eczema exacerbated by rice ingestion (*Villalta et al., 2012*).

Two different routes of exposure leading to immediate hypersensitivity reactions have been documented: ingestion of cooked rice and inhalation of vapors during its boiling (*Crapo et al., 2000*). Most reports describe contact urticaria with raw rice, whereas reports of immediate hypersensitivity reactions after ingestion of rice are scarce. Rice is washed before cooking, hence the water soluble protein allergens cause contact urticaria in patients (*Kumar et al., 2007*).

Skin prick testing is an essential test procedure to confirm sensitization in IgE-mediated allergic disease in subjects with rhino conjunctivitis, asthma, urticaria, anaphylaxis, atopic eczema and food and drug allergy (*Li and Xie, 2016*).



The prevalence of food allergy among Egyptian children is largely unknown, more so for the different food allergens. Although there are several studies reporting on the common food allergens, yet none was done to explore the allergy to rice, a food allergen that is much less recognized both by pediatricians and allergic patients (*Joyce, 2012*).