



**ΕΛΛΗΝΙΚΟ
ΑΝΟΙΚΤΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ**

**ΣΧΟΛΗ ΘΕΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑΣ ΠΡΟΓΡΑΜΜΑ
ΜΕΤΑΠΤΥΧΙΑΚΩΝ ΣΠΟΥΔΩΝ**

«ΕΠΙΔΗΜΙΟΛΟΓΙΑ»

Διπλωματική Εργασία

**ΣΥΣΧΕΤΙΣΗ ΤΗΣ ΚΑΤΑΝΑΛΩΣΗΣ ΖΥΜΩΜΕΝΩΝ ΤΡΟΦΙΜΩΝ ΜΕ ΤΟΝ
ΕΠΙΠΟΛΑΣΜΟ ΑΛΛΕΡΓΙΚΩΝ ΝΟΣΗΜΑΤΩΝ ΣΕ ΕΝΗΛΙΚΕΣ: ΑΝΑΛΥΣΗ
ΔΕΔΟΜΕΝΩΝ ΑΠΟ ΤΗ ΜΕΛΕΤΗ PIMENTO ΜΕ ΤΗ ΧΡΗΣΗ ΤΟΥ
ΕΡΩΤΗΜΑΤΟΛΟΓΙΟΥ 3FQ**

ΑΝΤΩΝΙΑΔΟΥ ΦΕΒΡΩΝΙΑ

ΕΠΙΒΛΕΠΟΥΣΑ ΚΑΘΗΓΗΤΡΙΑ: ΜΑΓΡΙΠΛΗ ΕΜΜΑΝΟΥΕΛΑ

ΠΑΤΡΑ, ΙΟΥΝΙΟΣ 2026

Η παρούσα εργασία αποτελεί πνευματική ιδιοκτησία της φοιτήτριας Αντωνιάδου Φεβρωνίας που την εκπόνησε. Στο πλαίσιο της πολιτικής ανοικτής πρόσβασης η συγγραφέας/δημιουργός εκχωρεί στο ΕΑΠ, μη αποκλειστική άδεια χρήσης του δικαιώματος αναπαραγωγής, προσαρμογής, δημόσιου δανεισμού, παρουσίασης στο κοινό και ψηφιακής διάχυσής τους διεθνώς, σε ηλεκτρονική μορφή και σε οποιοδήποτε μέσο, για διδακτικούς και ερευνητικούς σκοπούς, άνευ ανταλλάγματος και για όλο το χρόνο διάρκειας των δικαιωμάτων πνευματικής ιδιοκτησίας. Η ανοικτή πρόσβαση στο πλήρες κείμενο για μελέτη και ανάγνωση δεν σημαίνει καθ' οιονδήποτε τρόπο παραχώρηση δικαιωμάτων διανοητικής ιδιοκτησίας του συγγραφέα/δημιουργού ούτε επιτρέπει την αναπαραγωγή, αναδημοσίευση, αντιγραφή, αποθήκευση, πώληση, εμπορική χρήση, μετάδοση, διανομή, έκδοση, εκτέλεση, «μεταφόρτωση» (downloading), «ανάρτηση» (uploading), μετάφραση, τροποποίηση με οποιονδήποτε τρόπο, τμηματικά ή περιληπτικά της εργασίας, χωρίς τη ρητή προηγούμενη έγγραφη συναίνεση του συγγραφέα/δημιουργού. Η συγγραφέας/δημιουργός διατηρεί το σύνολο των ηθικών και περιουσιακών του δικαιωμάτων.

**ΣΥΣΧΕΤΙΣΗ ΤΗΣ ΚΑΤΑΝΑΛΩΣΗΣ ΖΥΜΩΜΕΝΩΝ ΤΡΟΦΙΜΩΝ ΜΕ
ΤΟΝ ΕΠΙΠΟΛΑΣΜΟ ΑΛΛΕΡΓΙΚΩΝ ΝΟΣΗΜΑΤΩΝ ΣΕ ΕΝΗΛΙΚΕΣ:
ΑΝΑΛΥΣΗ ΔΕΔΟΜΕΝΩΝ ΑΠΟ ΤΗ ΜΕΛΕΤΗ PIMENTO ΜΕ ΤΗ
ΧΡΗΣΗ ΤΟΥ ΕΡΩΤΗΜΑΤΟΛΟΓΙΟΥ 3FQ**

Αντωνιάδου Φεβρωνία

Επιτροπή Επίβλεψης Διπλωματικής Εργασίας

Επιβλέπουσα Καθηγήτρια:

Μαγριπλή Εμμανουέλα

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Διατροφικής Επιδημιολογίας και Δημόσιας Υγείας

Εργαστήριο Διαιτολογίας και Ποιότητας Ζωής

Τμήμα Επιστήμης Τροφίμων και Διατροφής του
Ανθρώπου

Γεωπονικό Πανεπιστήμιο Αθηνών

Επισκέπτρια Καθηγήτρια

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Τμήμα Ιατρικής

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Βανταράκης Απόστολος

Καθηγητής Υγιεινής

Εργαστήριο Υγιεινής

Τμήμα Ιατρικής

Σχολή Επιστημών Υγείας

Πανεπιστήμιο Πατρών

Πάτρα, Ιούνιος 2026

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ΠΕΡΙΛΗΨΗ

Εισαγωγή:	Τα ζυμωμένα τρόφιμα αποτελούν σημαντικό μέρος της ανθρώπινης διατροφής και έχουν συσχετιστεί με ευεργετικές επιδράσεις στο μικροβίωμα του εντέρου και στη ρύθμιση της ανοσολογικής απόκρισης. Ωστόσο, τα διαθέσιμα δεδομένα σχετικά με τη σχέση τους με τα αλλεργικά νοσήματα παραμένουν περιορισμένα και αντικρουόμενα.
Σκοπός:	Η παρούσα μελέτη διερεύνησε τη συσχέτιση μεταξύ της κατανάλωσης ζυμωμένων τροφίμων και του αυτοαναφερόμενου επιπολασμού τροφικών αλλεργιών ή/και δυσανεξιών σε ενήλικο ευρωπαϊκό πληθυσμό, μέσω δευτερογενούς ανάλυσης δεδομένων της μελέτης PIMENTO με τη χρήση του επικυρωμένου ερωτηματολογίου Συχνότητας Κατανάλωσης Ζυμωμένων Τροφίμων (3FQ).
Μέθοδος:	Πραγματοποιήθηκε συγχρονική παρατηρητική μελέτη συσχέτισης με βάση δεδομένα 10.310 ενηλίκων συμμετεχόντων της μελέτης PIMENTO από 53 ευρωπαϊκές χώρες. Στην ανάλυση συμπεριλήφθηκαν συμμετέχοντες με πλήρη δεδομένα για τις υπό μελέτη μεταβλητές. Η κατανάλωση ζυμωμένων τροφίμων και ροφημάτων αξιολογήθηκε με τη χρήση του ερωτηματολογίου 3FQ, ενώ η παρουσία τροφικών αλλεργιών ή/και δυσανεξιών καταγράφηκε βάσει αυτοαναφοράς. Οι συσχετίσεις διερευνήθηκαν μέσω υπολογισμού προσαρμοσμένων λόγων επιπολασμού (adjusted Prevalence Ratios, aPR), μετά από προσαρμογή για πιθανούς συγχυτικούς παράγοντες.
Αποτελέσματα:	Το 15,7% των συμμετεχόντων ανέφερε παρουσία τροφικών αλλεργιών ή/και δυσανεξιών. Η κατανάλωση ζυμωμένων γαλακτοκομικών προϊόντων συσχετίστηκε με χαμηλότερο επιπολασμό τροφικών αλλεργιών ή/και δυσανεξιών (aPR=0,553, $p<0,001$), όπως και η κατανάλωση ζυμωμένων δημητριακών (aPR=0,577, $p<0,001$), σοκολάτας (aPR=0,798, $p=0,011$) και καφέ (aPR=0,865, $p=0,014$). Αντίθετα, υψηλότερος επιπολασμός παρατηρήθηκε στους καταναλωτές ζυμωμένων μη αλκοολούχων ποτών (aPR=1,124, $p=0,025$), ξιδιού (aPR=1,111, $p=0,049$) και εναλλακτικών φυτικών

	προϊόντων κρέατος και γαλακτοκομικών (plant-based) (aPR=1,620, $p<0,001$). Οι περισσότερες υπόλοιπες κατηγορίες ζυμωμένων τροφίμων δεν παρουσίασαν στατιστικά σημαντικές συσχετίσεις μετά την προσαρμογή για συγχυτικούς παράγοντες.
Συμπεράσματα:	Η κατανάλωση ορισμένων κατηγοριών ζυμωμένων τροφίμων, κυρίως των ζυμωμένων γαλακτοκομικών και των ζυμωμένων δημητριακών, συσχετίστηκε με χαμηλότερο επιπολασμό τροφικών αλλεργιών ή/και δυσανεξιών, ενώ η κατανάλωση εναλλακτικών φυτικών προϊόντων κρέατος και γαλακτοκομικών (plant-based) συσχετίστηκε με υψηλότερο επιπολασμό. Ωστόσο, λόγω του συγχρονικού σχεδιασμού της μελέτης, δεν είναι δυνατή η εξαγωγή αιτιολογικών συμπερασμάτων και δεν μπορεί να αποκλειστεί το ενδεχόμενο αντίστροφης αιτιότητας. Απαιτούνται προοπτικές επιδημιολογικές μελέτες και κλινικές δοκιμές για την περαιτέρω διερεύνηση του ρόλου των ζυμωμένων τροφίμων στην πρόληψη και διαχείριση των αλλεργικών νοσημάτων.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ: Ζύμωση, ζυμωμένα τρόφιμα, τροφική αλλεργία, τροφική δυσανεξία, μικροβίωμα εντέρου, Ερωτηματολόγιο Συχνότητας Κατανάλωσης Ζυμωμένων Τροφίμων (3FQ), μελέτη PIMENTO.

Association Between Fermented Food Consumption and the Prevalence of Allergic Diseases Among Adults: A Secondary Analysis of Data from the PIMENTO Study Using the Fermented Food Frequency Questionnaire, (3FQ).

Antoniadou Fevronia

ABSTRACT

Introduction:	Fermented foods constitute an important component of the human diet and have been associated with beneficial effects on the gut microbiome and the regulation of immune responses. However, the available evidence regarding their relationship with allergic diseases remains limited and inconclusive.
Objective:	This study investigated the association between fermented food consumption and the self-reported prevalence of food allergies and/or intolerances among European adults through a secondary analysis of data from the PIMENTO study using the validated Fermented Food Frequency Questionnaire, (3FQ).
Methods:	A cross-sectional observational study was conducted using data from 10,310 adult participants in the PIMENTO study across 53 European countries. Only participants with complete data for the variables of interest were included in the analysis. Consumption of fermented foods and beverages was assessed using the 3FQ questionnaire, while the presence of food allergies and/or intolerances was determined through self-report. Associations were examined by calculating adjusted Prevalence Ratios (aPRs) after adjustment for potential confounding factors.
Results:	Overall, 15.7% of participants reported having food allergies and/or intolerances. Consumption of fermented dairy products was associated with a lower prevalence of food allergies and/or intolerances (aPR=0.553, $p<0.001$), as was the consumption of fermented cereals

	(aPR=0.577, $p<0.001$), chocolate (aPR=0.798, $p=0.011$), and coffee (aPR=0.865, $p=0.014$). In contrast, a higher prevalence was observed among consumers of fermented non-alcoholic beverages (aPR=1.124, $p=0.025$), vinegar (aPR=1.111, $p=0.049$), and plant-based meat and dairy alternatives (aPR=1.620, $p<0.001$). Most of the remaining categories of fermented foods were not significantly associated with the outcome after adjustment for confounding factors.
Conclusions:	Consumption of certain categories of fermented foods, particularly fermented dairy products and fermented cereals, was associated with a lower prevalence of food allergies and/or intolerances, whereas consumption of plant-based alternatives was associated with a higher prevalence. However, due to the cross-sectional design of the study, causal inferences cannot be drawn, and the possibility of reverse causation cannot be excluded. Prospective epidemiological studies and clinical trials are warranted to further investigate the role of fermented foods in the prevention and management of allergic diseases.

Keywords: Fermentation, fermented foods, food allergy, food intolerance, gut microbiome, Fermented Food Frequency Questionnaire (3FQ), PIMENTO study.

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Αντωνιάδου Φεβρωνία, Συσχέτιση της κατανάλωσης ζυμωμένων τροφίμων με τον επιπολασμό αλλεργικών νοσημάτων σε ενήλικες: Ανάλυση δεδομένων από τη μελέτη PIMENTO με τη χρήση του ερωτηματολογίου 3FQ.

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Υπεύθυνη Δήλωση Συγγραφέα: Δηλώνω ρητά ότι, σύμφωνα με το άρθρο 8 του Ν.1599/1986, η παρούσα εργασία αποτελεί αποκλειστικά προϊόν προσωπικής μου εργασίας, δεν προσβάλλει κάθε μορφής δικαιώματα διανοητικής ιδιοκτησίας, προσωπικότητας και προσωπικών δεδομένων τρίτων, δεν περιέχει έργα/εισφορές τρίτων για τα οποία απαιτείται άδεια των δημιουργών/δικαιούχων και δεν είναι προϊόν μερικής ή ολικής αντιγραφής, οι πηγές δε που χρησιμοποιήθηκαν περιορίζονται στις βιβλιογραφικές αναφορές και μόνον και πληρούν τους κανόνες της επιστημονικής παράθεσης.