

 **ESPGHAN** **49th** **ANNUAL**
MEETING

of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition

Abstracts

25–28 May 2016



Athens • Greece

Megaron International Conference Centre

www.espghancongress.org

REVIEWERS

ESPGHAN would like to thank the following people for their services as Abstract Reviewers:

Nadeem Afzal	Nedim Hadzic	Anders Paerregaard
Carlo Agostoni	Jane Hartley	Ioanna Panayotou
Jorge Amil Dias	Corina Hartman	Alexandra Papadopoulou
Andras Arato	Almuthe Christine Hauer	Joanna Pawlowska
Henrik Arnell	Bruno Hauser	Noel Peretti
Renata Auricchio	Olle Hernell	Eva Pfister
Irene Axelsson	Loreto Hierro	Alan Phillips
Ulrich Baumann	Ilse Hoffman	Isabel Polanco
Mark Beattie	Iva Hojsak	Irit Poraz
Marc Benninga	Roderick Houwen	Hildegard Przyrembel
Beint Bentsen	Jean-Pierre Hugot	Shimon Reif
Frank Bowedes	Jessie Hulst	Carmen Ribes
Christian Braegger	Steffen Husby	Edmond Rings
Efrat Broide	Seamus Hussey	Eleftheria Roma
Jiri Bronsky	Warren Hyer	Frank Rümmele
Pierre Broue	Flavia Indrio	Reene Scheenstra
Stephan Buderus	Oleg Jadresin	Marco Sciveres
Yoram Bujanover	Joerg Jahnel	Raanan Shamir
Samy Cadranel	Paloma Jara	Eyal Shteyer
Jaoquim Calvo Lerma	Panayota Kafritsa	Marco Silano
Angelo Campanozzi	Nicolas Kalach	Francoise Smets
Cristina Campoy Folgoso	Ino Kanavaki	Piotr Socha
Gemma Castillejo	Thomai Karagiozoglou	Johannes Spalinger
Christophe Chassard	Stavroula Karyda	Annamaria Staiano
Ania Chmielewska	Alemka Jaklin Kekez	Birgitta Strandvik
Carla Colombo	Kathy Kennedy	Ekkehard Sturm
Paula Crespo Escobar	Angelika Kindermann	Hania Szajewska
Nick Croft	Frank Kneepkens	Laszlo Szonyi
Salvatore Cucchiara	Brigitte Kochavi	Nikhil Thapar
Lorenzo D' Antiga	Henrik Köhler	Rut Anne Thomassen
Gerard Damen	Sanja Kolacek	Patrick Tounian
Barbara de Koning	Berthold Koletzko	Riccardo Troncone
Lissy De Ridder	Sibylle Koletzko	Dominique Turck
Thierry De Vreker	Bart Koot	Dan Turner
Dominique Debray	Ilma Korponay-Szabo	Christos Tzivinikos
Tamas Decsi	Florence Lacaille	Vaidotas Urbonas
Antal Dezsofi	Alain Lachaux	Pietro Vajro
Tietie Dijkstra	Alexandre Lapillone	Anemone van den Berg
Jernej Dolinsek	Aron Lerner	Hans Van Goudoever
Magnus Domellöf	Keith Lindley	Indra Van Mourik
Christoph Dupont	Andrea Lo Vecchio	Patrick Van Rheenen
Ozlem Durmaz	Thomas MacDonald	Myriam Van Winckel
Nick Embleton	Sarah Macdonald	Yvan Vandenplas
Johanna Escher	Giuseppe Maggiore	Gigi Veereman-Wauters
Jackie Falconer	Claude Marcus	Gabor Veres
John Fell	Patrick McKiernan	Henk-Jan Verkade
Mary Fewtrell	Valerie McLin	Batia Weiss
Natasa Fidler Mis	Luisa Mearin	Zvi Weizman
Yigael Finkel	Erasmus Miele	Michael Wilschanski
Bjorn Fischler	Giorgina Mieli-Vergani	David Wilson
Kim Fleischer Michaelsen	Walter Mihatsch	Harland Winter
Maria Fotoulaki	Zrinjka Mišak	Heiko Witt
Esteban Frauca	Christian Molgaard	Ioannis Xinias
Elvira George	Yael Mozer-Glassberg	Gitte Zachariassen
Imeke Goldschmidt	Thomas Müller	Aglaia Zellos
Isabel Goncalves	Simon Murch	Noam Zevit
Emmanuel Gonzales	Antal Nemeth	Matthias Zilbauer
Frederic Gottrand	Tena Niseteo	Klaus-Peter Zimmer
Olivier Goulet	Valerio Nobili	
Enke Grabhorn	Andreas Nydegger	
Alfredo Guarino	Giuseppina Oderda	
Girish Gupte	Inger Ohlund	
Figen Gurakan	Rok Oreš	

Nutrition in preschool children and later risk of obesity: a systematic review and meta analysis

Julie Lanigan¹, Amanda Adegboye², Kate Northstone³, Catherine Salisbury¹, Atul Singhal¹

¹University College London, Institute of Child Health, London, United Kingdom

²University of Westminster, Department of Life Sciences, London, United Kingdom

³University of Bristol, School of Social and Community Medicine, Bristol, United Kingdom

Objectives and study: Nutrition in infants and preschool children has been suggested to influence the risk of later obesity. However, the evidence for this association is conflicting and few studies have investigated this prospectively or considered the role of energy and specific macronutrients. Here we report a systematic review and meta-analysis of studies that tested the hypothesis that nutrition in the preschool period, between the ages of 6 months and 3 years, is associated with later obesity risk.

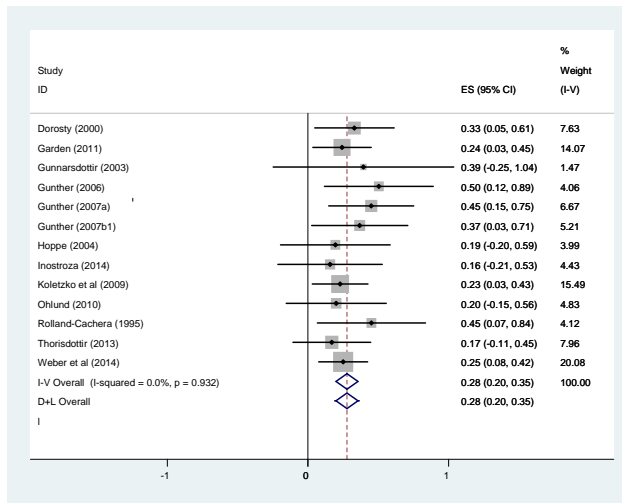
Methods: MEDLINE, EMBASE and CENTRAL databases were searched from January 1988 to June 2015 for studies reporting nutritional intake in infants and preschool children aged 6-36 months and later measures of obesity. Bibliographies of included studies were hand searched and authors and other experts consulted to identify omissions. We included all studies that investigated dietary energy and/or macronutrient intake during 6-36 months in relation to later measures of obesity.

Methodological quality was assessed using the Downs and Black checklist designed specifically to appraise both randomised and non-randomised studies¹. The checklist was adapted to include aspects of particular relevance to studies investigating nutritional exposures. Two reviewers independently scored studies against the 28 item checklist which included questions on study reporting, external validity, internal validity (bias and confounding), and statistical power. A statistician independently scored questions relating to statistical methods and their decision was final. Data from studies amenable to meta-analysis were analysed using STATA (StataCorp 12, Texas). For continuous outcomes, results were expressed as standardised mean difference (SMD) between the high and low protein intake groups. For dichotomous outcomes, results for each study were expressed as relative risk (RR). Both dichotomous and continuous outcomes were presented with 95% confidence intervals (CI). Between-study heterogeneity was assessed by the Q and I^2 statistics.²

Results: 24 eligible articles (comprising 16 primary studies) were included in a narrative synthesis, and 13 studies in a random-effects meta-analysis. A higher protein intake was associated with later risk of obesity in 15 studies. In 13 studies included in the meta-analysis protein in the preschool period was associated with higher BMI z-score later in childhood (pooled effect size: 0.28 z-scores, 95% CI 0.20 to 0.35)(Figure 1). There was no significant heterogeneity between studies (I^2 0.0%, $p = 0.932$).

Associations of energy, fat and carbohydrate were inconclusive.

Figure 1: Protein intake and BMI z-score – pooled effect estimate



Conclusion: Our findings suggest that nutrition and particularly high protein intake in infants and preschool children is important for risk of later obesity. Although further experimental data are required to establish causality, these findings suggest that optimising the protein intake of these children could be important for their long term health.

Disclosure of interest: The authors declare no conflicts of interest.

Reference List

- (1) Downs SH, Black N. The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. *J Epidemiol Community Health* 1998; 52(6):377-384.
- (2) Higgins JP, Thompson SG, Deeks JJ, Altman DG. Measuring inconsistency in meta-analyses. *BMJ* 2003; 327(7414):557-560.