Aspetti nutrizionali del divezzamento tra controversie ed evidenze

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Piacenza

Non regole assolute, ma valutazione individuale tra….

…… scienza…….

……..e tradizione…….

Non linee guida ma commento……

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Medical Position Paper

Complementary Feeding: A Commentary by the ESPGHAN Committee on Nutrition

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Non più “weaning foods” ma “complementary foods”!!!

ESPGHAN CoN, 2008

Perché complementare?

Il volume di latte materno ingerito da lattanti allattati esclusivamente al seno diventa insufficiente per coprire i loro fabbisogni a circa 6 mesi di calorie, proteine, ferro, zinco e di alcune vitamine liposolubili (A e D).

ESPGHAN CoN, 2008

Quando complementare?

- Le funzioni gastrointestinali e renali sono sufficientemente mature a circa 4 mesi di età per consentire al lattante di tollerare alcuni alimenti complementari

- Esiste un range di età nel quale il lattante acquisisce competenze le motorie necessarie per ricevere senza rischi alimenti complementari

ESPGHAN CoN, 2008

Quando complementare?

- L’ obiettivo desiderabile è allattare al seno in modo esclusivo per circa 6 mesi (OMS).

World Health Organization (WHO), 55th World Health Assembly. Infant and young child nutrition. World Health Organization, 2002 (WHA55.25). http://apps.who.int/gb/archive/pdf_files/WHA55/ewha5525.pdf.

- In ogni caso, gli alimenti complementari non dovrebbero essere introdotti per nessun lattante prima dei 4 mesi compiuti (17 wks) ed a tutti proposti entro i 6 mesi compiuti (26 wks).

ESPGHAN CoN, 2008

- In quasi tutti i Paesi, gli schemi alimentari derivano da fattori culturali e dalla disponibilità degli alimenti.

- La composizione della dieta durante il periodo della ”complementazione”, come il tipo di allattamento, può avere effetti sulla salute sia nel breve che nel medio-lungo

ESPGHAN CoN, 2008

Benchè esistano ragioni teoriche per utilizzare differenti schemi di complementazione in base al tipo di allattamento, definire ed implementare raccomandazioni per l'introduzione di alimenti solidi differenti per allattati al seno o con formula può presentare problemi pratici rilevanti.

Take-home message:

- Le indicazioni sulla durata ideale dell'allattamento esclusivo al seno dell'OMS per 6 mesi valgono a livello di popolazione, in particolare per i Paesi *in transizione*

- A livello individuale vale la valutazione del contesto familiare, del rapporto mamma-bambino, delle esigenze specifiche della mamma, della valutazione della crescita attraverso curve appropriate ed aggiornate, ed eventualmente iniziare l'introduzione dei solidi tra 4° e 6° mese compiuto
- Se si decide per la complementazione tra 4° e 6° mese → non formula, ma alimenti solidi

ESPGHAN CoN, 2008

Esiste un "timing" per introdurre alimenti potenzialmente allergizzanti?

Sulla base dei dati disponibili sul ritardare o eliminare specifici alimenti ed anche sul conseguente potenziale rischio nutrizionale, non esiste evidenza scientifica che l'evitamento o la ritardata introduzione di alimenti potenzialmente allergizzanti, come pesce e uova, riduca le allergie, sia in lattanti considerati a rischio che in quelli non a rischio di sviluppare allergie.

Proteine allergizzanti o valore nutrizionale?

- L'esempio di uova e pesce: proteine all'origine di reazioni/patologie su base allergica ma fonte di numerosi nutrienti a valore funzionale (in particolare: acidi grassi polinsaturi a lunga catena della serie n-3)
- In letteratura dati contrastanti→ la ritardata introduzione potrebbe essere all'origine di una facilitata predisposizione allergica
- Un incontro più precoce con l'allergene + alcuni nutrienti funzionali (polinsaturi della serie n-3) + l'eventuale persistenza del latte materno → modulazione positiva della risposta immuno-allergica, migliore costituzione dei tessuti che rientrano nel "network" immunologico

ESPGHAN CoN, 2008

Esiste un “timing” per introdurre il glutine?

- Si dovrebbe evitarne sia l’introduzione precoce (<4 mesi) che tardiva (≥7 mesi)
- Il glutine dovrebbe essere introdotto gradualmente mentre il lattante è ancora allattato al seno.
- Evitarne l’introduzione precoce (<4 mesi) nei soggetti a rischio può anche ridurre il rischio di sviluppare diabete.

Perché meglio durante allattamento al seno??

- minore quantità di glutine assunto
- protezione contro infezioni a livello intestinale
- effetto immunomodulatore con stimolazione della tolleranza al glutine

ESPGHAN, 2008

Introduzione di glutine mentre il bambino è ancora allattato al seno

- Prevenzione della malattia celiaca
- Prevenzione del diabete di tipo 1

If our aim is to introduce solids while infants are still being breast fed, and assuming that the 4-6 months period may have an effect on the prevention of chronic illness (more evident for CD), to this aim, maybe the 6-month WHO theorem should be partly revised, and small amounts of solids, included gluten, be allowed in the 4 to 7 month period, emerging as critical temporary window to modulate the genetic predisposition towards autoimmune response, and considering the progressively decreasing breastfeeding rates.

ESPGHAN CoN, 2008

Diete ridotte in grassi > 2-3 aa di vita: Il caso del latte vaccino intero

- Considerevoli differenze tra i vari Paesi sull'età raccomandata per introdurre latte vaccino parzialmente scremato.
- L'aspetto più preoccupante riguarda le possibili conseguenze sulla crescita della restrizione energetica conseguente ad una dieta a ridotto apporto di grassi.
- La scelta di un latte vaccino parzialmente scremato (1,5-2%) è raccomandata a partire dal 2°-3° anno di età

ESPGHAN CoN, 2008

Diete speciali

- E’ importante che lattanti o bambini vegetariani assumano una quantità sufficiente (circa 500 ml) di latte e derivati.

- Nel primo anno di vita una dieta vegana (senza alcun alimento animale) risulta pericolosa per il rischio di deficit di vitamina B12, con gravi conseguente sullo sviluppo neuro-cognitivo e pertanto dovrebbe essere sconsigliata.

ERRORI DA EVITARE

- Il precoce abbandono del latte materno
- L’eccesso di proteine
- Il rischio di deficit di Ferro

COMPLEMENTARY FOOD INTERNATIONAL COMPARISON ON PROTEIN AND ENERGY/INTAKES

Agostoni C, Riva E, Giovannini M

Nestle Nutr Workshop Ser Pediatr Program (Switzerland)

2006, 58 p147-56; discussion 156-9

I dati della letteratura suggeriscono che tra 6 e 24 mesi al di sopra del limite del 14% di energia da proteine (3.5g/100 kcal) possano svilupparsi meccanismi in grado di smascherare una predisposizione genetica che favorisce un early adiposity rebound e lo sviluppo di obesità.

Protein-Adiposity hypothesis

↑ Protein intake → ↑ IGF-1 (insulin?) levels

→ ↑ adipocyte multiplication

→ early ”adiposity rebound”

→ ↑ risk of obesity

Rolland-Cachera et al. Int J Obes 1995;19:573-578

Quali proteine?

- La maggior parte degli studi hanno concentrato l'attenzione su intake di proteine totali, ma le fonti di proteine (carne, latticini e cereali) esercitano un diverso effetto metabolico.
- Studi recenti suggeriscono che soprattutto le **proteine assunte con il latte** (non con carne e cereali) stimolino la secrezione di insulina e IGF-1 in età pediatrica.

Hoppe C et al, AJCN 2004; 80: 447-452

Hoppe C et al Eur J Clin Nutr 2004: 58; 1211–1216
Hoppe C et al Eur J Clin Nutr 2005;59: 393–398.

Perché latte vaccino non prima del 12° (24 o 36°?) mese

- Eccesso proteico (futuro sviluppo di obesità?)
- Deficit di ferro (scarso contenuto, poco assorbito)
- Microemorragie intestinali

Fernandes SM, de Morais MB, Amancio OM: Intestinal blood loss as an aggravating factor of iron deficiency in infants aged 9 to 12 months fed whole cow's milk. J Clin Gastroenterol 2008; 2:152–156.

- Elevato carico renali di soluti
- Elevate perdite idriche
- Stipsi (se assunto in elevate quantità)
- Reazioni allergiche gravi
- Sviluppo di Diabete tipo I ? (ruolo delle beta-casomorfine?)

Scientific Report of EFSA prepared by a DATEX Working Group. Review of the potential health impact of β-casomorphins and related peptides. EFSA Scientific Report 2009;231:1–107.

Consumption of cow's milk as a cause of iron deficiency in infants and toddlers

doi:10.1111/j.1753-4887.2011.00431.x
Nutrition Reviews® Vol. 69(Suppl. 1):S37–S42

Ekhard E Ziegler

- Il latte vaccino si associa ad un rischio aumentato di deficit di ferro.
- L'effetto del LV sullo stato nutrizionale del ferro si pensa sia dovuto alla bassa biodisponibilità di questo.
- Il LV causa anche sanguinamenti intestinali e contiene inibitori dell'assorbimento del ferro.
- L'effetto negativo del LV sullo stato sideremico potrebbe essere bypassato attraverso l'utilizzo di fortificazioni

Il LV non modificato non dovrebbe essere assunto da lattanti e bambini nei primi 3 anni di vita.

Carne e ferro nel divezzamento

- Associazione positiva tra ferritina serica ed assunzione di carne tra 6 e 9 mesi

  Michaelsen et al, Acta Paediatr 1994;84:1035

- A 8 mesi, studio di intervento su 41 bambini randomizzati: 27 g/die vs 10 g/die di carne

  per due mesi, valori di emoglobina più stabili

  Engelmann MD et al, J Pediatr Gastroenterol Nutr 1998;26:26

- A 10 mesi, studio con isotopi stabili su 8 bambini: l'aggiunta di 25 grammi di carne a 100 grammi di purea vegetale aumenta di 2.7 volte il ferro assorbito

  Engelmann MD et al, Pediatr Res 1998;43:768

Latti di Crescita vs Latte Vaccino

- Ridotto tenore proteico
- Maggiore concentrazione di acidi grassi essenziali
- Fortificati in Fe, Zn
- Addizionati di vitamine e minerali
- Addizionati di fibre

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Special Feature

Breast-feeding: A Commentary by the ESPGHAN Committee on Nutrition

ESPGHAN Committee on Nutrition: *[1]Carlo Agostoni, †Christian Braegger, ‡Tamas Decsi, §Sanja Kolacek, ||[1]Berthold Koletzko, ¶[1]Kim Fleischer Michaelsen, #Walter Mihatsch, **Luis A. Moreno, ††John Puntis, ‡‡[2]Raanan Shamir, §§Hania Szajewska, ||||[3]Dominique Turck, and ¶¶Johannes van Goudoever

Main results in infants	WHO, 2007	US Agency for Healthcare Research and Quality, 2007	Dutch State Institute for Nutrition and Health, 2005
Otitis media	—	↓	Convincing evidence ↓
GI infections	—	↓	Convincing evidence ↓
Respiratory infections	—	—	Possible evidence ↓
Severe lower RTI	—	↓	—
Atopy	—	—	Possible evidence ↓
Atopic dermatitis	—	↓	Eczema Probable evidence ↓
Asthma (young children)	—	↓	Probable evidence ↓
Wheezing	—	—	Probable evidence ↓
Obesity	↓ OR 0.78 (0.72 to 0.84)	↓	Convincing evidence ↓
Type 1 diabetes	—	↓	Possible evidence ↓
Type 2 diabetes	↓ OR 0.63 (0.45 to 0.89)	↓	—
Childhood leukaemia	—	↓	Possible evidence ↓
SIDS	—	↓	Insufficient evidence
NEC	—	↓	—
Cardiovascular diseases	—	Not clear	No evidence
Crohn disease	—	—	Possible evidence ↓
Ulcerative colitis	—	—	Insufficient evidence
Infant mortality	—	—	—
High blood pressure	↓systolic MD −1.2 mmHg (−1.7 to −0.7) ↓diastolic MD −0.49 mmHg (−0.87 to −0.11)	—	Convincing evidence ↓
Serum cholesterol	Adulthood ↓ MD −0.18 mmol/l (−0.3 to −0.06) Children and adolescents NS	—	—
Intelligence and schooling	↑ MD 4.9 (2.97 to 6.92)	—	—
Intellectual and motor development	—	—	Probable evidence ↑

CONCLUSIONS

Breast-feeding is the natural and advisable way of supporting the healthy growth and development of young children. There are numerous indicators of benefits of breast-feeding on child health, both during infancy and later in life; a reduced risk of infectious diarrhoea and acute otitis media are the best documented effects.

Exclusive breast-feeding for around 6 months is a desirable goal, but partial breast-feeding as well as breast-feeding for shorter periods of time are also valuable. Continuation of breast-feeding after the introduction of complementary feeding is to be encouraged as long as mutually desired by mother and child.

Although it is acknowledged that parents are responsible for decisions on breast-feeding of their infants, the role of health care workers, including paediatricians, is to protect, promote, and support breast-feeding.

European Food Safety Authority

EFSA Journal (2009) 7(12): 1423

SCIENTIFIC OPINION

Scientific Opinion on the appropriate age for introduction of complementary feeding of infants[1]

EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)[2, 3]

European Food Safety Authority (EFSA), Parma, Italy

Panel members: Carlo Agostoni, Jean-Louis Bresson, Susan Fairweather-Tait, Albert Flynn, Ines Golly, Hannu Korhonen, Pagona Lagiou, Martinus Løvik, Rosangela Marchelli, Ambroise Martin, Bevan Moseley, Monika Neuhäuser-Berthold, Hildegard Przyrembel, Seppo Salminen, Yolanda Sanz, John (Sean) J Strain, Stephan Strobel, Inge Tetens, Daniel Tomé, Hendrik van Loveren and Hans Verhagen. Correspondence: nda@efsa.europa.eu

Acknowledgement: The Panel wishes to thank the members of the Working Group on Infant Formulae, subgroup Complementary Feeding for the drafting of this opinion: Carlo Agostoni, Renate Bergmann, Jean-Louis Bresson, Kim Fleischer Michaelsen, Hildegard Przyrembel, Yolanda Sanz and Daniel Tomé.

Many European countries have adopted the WHO recommendation for the duration of exclusive breast-feeding for 6 months, whilst other countries recommend the introduction of complementary feeding between 4 and 6 months. The Panel agrees with WHO and other authoritative national and international bodies that breast-milk is the preferred food for infants, but the focus in this opinion are the factors which determine the appropriate age for the introduction of complementary food into infants' diets. The Panel has evaluated predominantly studies in breast-fed healthy infants born at term for indicators of an appropriate age at which to introduce complementary food irrespective of existing recommendations on breast-feeding duration and on exclusivity of breast-feeding. The Panel has focussed its evaluation on data from developed countries. On the basis of present knowledge, the Panel concludes that the introduction of complementary food into the diet of healthy term infants in the EU between the age of 4 and 6 months is safe and does not pose a risk for adverse health effects (both in the short-term, including infections and retarded or excessive weight gain, and possible long-term effects such as allergy and obesity). Consistent with these conclusions, presently available data on the risk of celiac disease and type 1 diabetes mellitus support also the timing of the introduction of gluten containing food (preferably while still breast-feeding) not later than 6 months of age. Exclusive breast-feeding provides adequate nutrition up to 6 months of age for the majority of infants, while some infants may need complementary foods before 6 months (but not before 4 months) in addition to breast-feeding in order to support optimal growth and development.

When to wean? How good is the evidence for six months' exclusive breastfeeding

The recommendation that UK mothers should exclusively breast feed for six months is a controversial area in infant nutrition. **Mary Fewtrell and colleagues** review the evidence and ask if the time is right for reappraisal of this advice

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In 2001, the World Health Organization announced for the consideration of member states its global recommendation that infants should be exclusively breast fed for six months.[1] Many Western countries, including 65% of European member states[2] and the United States, elected not to follow this recommendation fully, or at all. However, in 2003 the health minister announced that the United Kingdom would comply.[3] Substantial evidence indicates that early nutrition has profound implications for long term health, by programming aspects of subsequent cognitive function, obesity, risk of cardiovascular disease, cancer, and atopy.[4] However, the evidence base supporting a major, population-wide change in public health policy underwent surprisingly little scrutiny. Indeed, the Department of Health's Scientific Advisory Committee on Nutrition (SACN) was not asked to formally consider the scientific evidence. A reappraisal of the evidence is timely in view of new data and a recent expert review for the European Food Safety Authority (EFSA), concluding that for infants across the EU complementary foods may be introduced safely between four and six months.[5]

Box 1 | Main conclusions of systematic review[8] underpinning WHO recommendation on exclusive breast feeding for six months

Exclusive breast feeding for six months, compared with three to four months, was associated with:

- No apparent growth deficits (though flaws in study design were recognised)
- No apparent relation with the development of allergy
- Poorer iron status: in the Honduras randomised trial, infants exclusively breast fed for six (versus four) months had lower mean haemoglobin (difference -5.00 g/L; 95% confidence interval -8.46 to -1.54), and ferritin concentrations
- Delayed return of menses and more rapid postpartum weight loss in mothers

Basis of the current recommendation

It is important not to confuse the evidence for promoting six months' exclusive breast feeding with that for breast feeding itself, which is extensive and is not considered here. WHO defines exclusive breast feeding as excluding solids or any other fluids (including infant formulas) except medicines, vitamins, and minerals.[6] In the United Kingdom and other countries where early formula feeding is prevalent, the timing of introduction of solid foods in all infants (often called weaning) is useful to consider,[7] and evidence on this subject is also included here.

The WHO recommendation rested largely on Kramer and Kakuma's systematic review[8] of infant and maternal health effects of exclusive breast feeding for six months versus three to four months. The review included 16 eligible studies, seven of which were from developing countries. Apart from two randomised trials in Honduras, the studies were observational, precluding proof of causation for the outcomes examined, since residual or unidentified confounding may remain even after adjusting for potential confounders. The study's conclusions (box 1) included evidence for the efficacy of six months' exclusive breast feeding (notably reduced infection rate) but also potential risk (iron deficiency anaemia, with its associated adverse neurodevelopmental outcomes). The health benefit for infants in developed countries, from an observational analysis in the Belarus promotion of breast feeding intervention trial (PROBIT) cohort, was a significantly reduced risk of gastroenteritis (adjusted odds ratio 0.61; 95% confidence interval 0.41 to 0.93).[9] By contrast, Lanigan and colleagues,[10] in a concurrent systematic review of 33 studies on the health effects of the timing of the introduction of solids in breastfed and formula fed infants, found no compelling evidence to support change from the then existing recommendation to introduce solids at four to six months.

Evidence published since the 2001 WHO recommendation

As with most of the evidence considered in the WHO review, these studies are observational and the same caveats regarding proof of causation therefore apply.

Infection

Four observational studies in developed countries have provided further evidence on exclusive breast feeding and risk of infection. Questionnaire based data from the National Health and Nutrition Examination Survey III (NHANES III) cohort[11] showed that US infants who were exclusively breast fed for more than six months had lower risk of pneumonia and recurrent otitis media than those breast fed for four to six months. A Spanish study found risk of hospital admission for all infant infections was decreased with longer exclusive breast feeding; this advantage, however, was seen principally before three months, with little

Box 1 | Main conclusions of systematic review[8] underpinning WHO recommendation on exclusive breast feeding for six months

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- Delayed return of menses and more rapid postpartum weight loss in mothers

Box 2 | Areas of clinical concern over recommendation to breast feed exclusively for six months

Evidence challenging the adequacy of breast milk as a reliable sole source of nutrition to six months

- Higher risk of iron deficiency anaemia (identified in data from the developing and developed worlds) known to be linked to irreversible adverse mental, motor, and psychosocial outcomes. The lack of a screening programme in the United Kingdom to detect such adverse population effects is a further concern
- Concerns over a higher incidence of food allergies
- Higher risk of coeliac disease, with concomitant long term complications

Firstly, Fewtrell and colleagues challenge the findings of the 2002 review of optimal duration of exclusive breast feeding by the World Health Organization (in fact updated in 2009[6]). Instead they cite a Nestle supported review that says that it "found no compelling evidence to support change" from four months to around six months of exclusive breast feeding. A quick appraisal of this review shows several factual errors and misrepresentation of its conclusions in Fewtrell and colleagues' summary.

Secondly, they list catastrophic consequences of iron deficiency as potential sequelae of exclusive breast feeding, yet the study they cite in support is not relevant. They omit to mention important related factors, including the increased bioavailablity of iron in breast milk and increased infection in infants who are not breast fed.

Why choose to examine this topic? The optimum duration of exclusive formula feeding is a more pressing public health question. International recommendations on the timing of introduction of solids are based only on evidence on exclusive breast feeding, and evidence on the health consequences of exclusive formula feeding after four months is completely lacking.

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Competing interests: None declared.

Infection more important than anaemia or allergy

It seems extraordinary that concern about possible effects on iron deficiency and coeliac disease should lead Fewtrell and colleagues to suggest shortening the recommended duration of exclusive breast feeding, when they acknowledge that longer durations of exclusive breast feeding are associated with substantial reductions in infectious diseases.[1] Excellent research evidence suggests that this effect applies to children in affluent as well as deprived societies.[2 3] Visit any UK paediatric ward and you will find it teeming with infants with infections, not iron deficiency and coeliac disease. Inevitably harms as well as benefits are associated with deferring solids, and the World Health Organization determined the age at which equipoise between the two was reached.

It also seems extraordinary that the *BMJ* published this highly subjective article in the same issue in which it repeatedly castigated the *Lancet* for its behaviour in relation to MMR.[4] Many children will lose the protective benefit of breast milk as the result of the *BMJ*'s inflammatory publicity and become ill as a consequence. Will the *BMJ* next mount an exposé of its own irresponsibility?

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Competing interests: None declared.

1 Fewtrell M, Wilson DC, Booth I, Lucas A. Six months of exclusive breast feeding: how good is the evidence? *BMJ* 2011;342:c5955. (13 January.)
2 Wright CM, Parkinson K, Scott J. Breast-feeding in a UK urban context: who breast-feeds, for how long and does it matter? *Public Health Nutr* 2006;9:686-91.
3 Ladomenou F, Moschandreas J, Kafatos A, Tselentis Y, Galanakis E. Protective effect of exclusive breastfeeding against infections during infancy: a prospective study. *Arch Dis Child* 2010;95:1004-8.
4 Deer B. The *Lancet*'s two days to bury bad news. *BMJ* 2011;342:c7001. (18 January.)

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RESPONSE Scientific Advisory Committee on Nutrition replies to Mary Fewtrell and colleagues

Fewtrell and colleagues selectively reviewed evidence on the appropriate age at which to introduce complementary food into the diet of breastfed infants.[1] We comment on several of their statements about the role of the Scientific Advisory Committee on Nutrition (SACN) in advising UK governments on this issue. SACN is a committee of independent experts appointed under Nolan principles to advise these governments.

It is incorrect that SACN "was not asked to formally consider the scientific evidence" supporting the World Health Organization's revised recommendations on breast feeding in 2001. The issue was initially considered in 2000 at a meeting chaired by the inaugural chair of SACN. It concluded: "There is sufficient scientific evidence that exclusive breast feeding for six months is nutritionally adequate." SACN endorsed this view in 2001, acknowledging the need for flexibility since mothers may introduce complementary foods earlier than this for personal, social, and economic reasons. It nevertheless stated these should not be given before the end of four completed months.[2]

SACN has subsequently published reports and commentaries on several topics relevant to Fewtrell and colleagues' review. All have been published and most were open to public consultation. Thus "broad professional consultation" has always been part of the SACN process. Fewtrell and colleagues did not acknowledge three reviews:

- In 2007 SACN recommended adoption of the 2006 WHO international growth standard for children up to 5 years old.[3] This describes the growth of exclusively or predominantly breastfed infants receiving complementary foods at an average age of 5.4 months[4]; this pattern of growth is internationally acknowledged as compatible with both short term and longer term infant health. This work was conducted collaboratively with experts nominated by the Royal College of Paediatrics and Child Health
- SACN will endorse the adequacy of iron and energy supply during exclusive breast feeding in forthcoming reports that were open for public consultation in 2010.[5] These examine the issues in depth and do not support the views of Fewtrell and colleagues
- SACN and the Committee on Toxicity (COT) have reviewed evidence relating the risk of coeliac disease and type 1 diabetes to the age at which gluten is introduced into an infant's diet.[6] The committees do not consider evidence sufficient to support introduction of gluten between 4 and 6 months of age. Fewtrell and colleagues suggest that changes to infant feeding policy should be subject to audit but fail to acknowledge that infant feeding policy has long been evaluated closely in the UK. Quinquennial surveys of infant feeding have documented trends since 1975, and a government funded national survey of the diet and nutritional status of infants and young children is in progress. Following changes to policy in 2003, the proportion of mothers in the UK introducing solids before 4 months of age fell to 51% from 65% in 2000.[7] The proportion introducing solids before 3 months more than halved. SACN believes that these changes will benefit infant health[8] and does not share the concerns of Fewtrell and colleagues.

Interpreting evidence relating infant feeding to health poses many challenges, but these are common to many areas of public health nutrition. SACN combines evidence from a range of sources to provide balanced advice to government.[9] Fewtrell and colleagues thus suggest nothing new in asking for "a synthesis balancing the risks and benefits of the proposed intervention, accounting for a range of possible outcomes."

SACN's advice to government on the nutritional adequacy of exclusive breast feeding for six months remains unchanged. The committee continues to review all new evidence and in September 2010 started investigating the scope of a detailed review of the scientific evidence underpinning infant and young child feeding policy.

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Ann Prentice chair, Scientific Advisory Committee on Nutrition (SACN), SACN Secretariat, Department of Health, London SE1 8UG

Competing interests: None declared.

1 Fewtrell M, Wilson DC, Booth I, Lucas A. Six months of exclusive breast feeding: how good is the evidence? *BMJ* 2011;342:c5955. (13 January.)
2 Minutes. 2nd meeting. 27 September 2001. Error! Hyperlink reference not valid..
3 Scientific Advisory Committee on Nutrition. *Application of WHO growth standards in the UK.* Stationery Office, 2007
4 WHO Multicentre Growth Reference Study Group. Complementary feeding in the WHO Multicentre Growth Reference Study. *Acta Paediatr Suppl* 2006;450:27-37.
5 Scientific Advisory Committee on Nutrition. Reports. www.sacn.gov.uk/reports_position_statements/reports/index.html.
6 Scientific Advisory Committee on Nutrition. Paper for discussion. Draft SACN/COT statement on the timing of introduction of gluten into the infant's diet. 2011. www.sacn.gov.uk/pdfs/SMCN1101%20%20Draft%20SACNCOT%20gluten.pdf.
7 Bolling K, Grant C, Hamlyn B, Thornton A. *Infant feeding survey 2005.* Information Centre, 2007.
8 Scientific Advisory Committee on Nutrition. *Infant feeding survey 2005: A commentary on infant feeding practices in the UK.* Stationery Office, 2008.
9 Scientific Advisory Committee on Nutrition. SACN framework for evaluation of evidence. 2008. Error! Hyperlink reference not valid..

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Commentary

ESPGHAN's 2008 recommendation for early introduction of complementary foods: how good is the evidence?

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In our view, the ESPGHAN position paper is not evidence based and does not justify a change of the current public health recommendation for 6 months of exclusive breastfeeding. At an individual level, health professionals should understand that developmental readiness for starting solid foods has an age range like other developmental milestones; that fewer infants will probably be ready to start complementary feeding before, rather than after, 6 months; and that their role is to equip parents with the confidence and skills to recognise the signs of developmental readiness. This empowerment process for infants and parents should be preferred over the prescriptive ESPGHAN approach.

Key messages

- Since 2002, the World Health Organization, many governments and many professional associations recommend exclusive breastfeeding for 6 months.
- In 2008, the European Society for Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) recommended that all infants should start complementary feeding between 17 and 26 weeks of age.
- The ESPGHAN recommendation is based on weak evidence and does not consider infant feeding from a broad social, cultural, health and developmental perspective.
- A change of the current public health recommendation for 6 months of exclusive breastfeeding is not justified; for individual infants, readiness for the introduction of complementary foods has an age range like other developmental milestones.

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Letter to the Editor

Response to Cattaneo *et al.* on ESPGHAN recommendations

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The aim of that paper (ESPGHAN Committee on Nutrition 2008) was to provide evidence-based guidance on the introduction of solid foods. We concluded with recommendations not to postpone the introduction of solid foods later than the beginning of the seventh month of life, and not to introduce solids before the beginning of the fifth month of life. Very similar recommendations were made at the same time by the American Academy of Pediatrics (Greer *et al.* 2008) and more recently by the European Food Safety Authority [EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) 2009], indicating that there is consistent scientific agreement on the available evidence. All these reviews have concluded that at this time there is no compelling evidence to demonstrate important advantages of exclusive breastfeeding for 6 months over and above advantages of breastfeeding for 6 months along with appropriate and safe complementary feeds, a point that does not apply to populations under poor hygienic conditions. Personal and emotional attacks are not convincing arguments with which to challenge a thorough scientific evaluation.

We should like to point out that recommendations on the timely introduction of solids are unrelated to the recommendation to breast feed for the first 6 months of life and thereafter, and also unrelated to discussions on the potential use of infant formulae. Furthermore, in both our paper on complementary feeding (ESPGHAN Committee on Nutrition 2008) and on breastfeeding (ESPGHAN Committee on Nutrition 2009), we state that exclusive breastfeeding for about 6 months is a desirable goal. Indeed, ESPGHAN strongly promotes the protection, promotion and support of breastfeeding for 6 months andthereafter as long as mutually desired by both mother and child (ESPGHAN Committee on Nutrition 2009).

CONCLUSIONI

- Latte materno, o , in caso di sua mancanza, un sostituto funzionalmente analogo, anche nel divezzamento fino a 12 (24?) mesi
- Valutazione corretta della crescita del bambino
- Introduzione degli alimenti tenendo conto che varietà e valore nutrizionale vanno tenuti in considerazione (valore *positivo*) più delle paure di teorici rischi (valore *negativo*)
- Mai essere disgiunti dalle tradizioni e credenze familiari se accettabili scientificamente

Grazie per l'attenzione

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