Vaccini: Falsi Miti

Giovanni Rezza

I vaccini possono sovraccaricare o indebolire il sistema immunitario?

A quanti antigeni può rispondere un lattante?

Calcolando il numero di cellule B presenti, ogni bambino sano potrebbe teoricamente rispondere a 5.000-10.000 stimoli contemporaneamente

I vaccini che si somministrano nel primo anno rappresentano lo **0,1%** del carico che il sistema immunitario può gestire

Oggi più vaccini…NON…più antigeni!

1900: vaccino antivaiolo: circa **200** antigeni

1960: antivaiolo (200), difterite (1), tetano (1), pertosse (circa 3000), polio (15): oltre **3000**

2017: esavalente (DTaP-polio-hib-HepB), MPR, varicella, pneumococco e meningococco B e C: circa **150** antigeni

Esavalente + pneumococco: **37** antigeni

I vaccini che contengono metalli sono pericolosi?

NO!

Mercurio

- Dal 1930 alcuni componenti del mercurio (Thimerosal) sono stati usati come conservanti nei vaccini, nelle gocce oculari, nell’inchiostro per tatuaggi
- La quantità di mercurio contenuta in un vaccino era molte volte inferiore a quella ingerita quotidianamente con cibo o acqua
- Numerose pubblicazioni autorevoli hanno escluso associazione tra mercurio e danni neurologici
- **Oggi i vaccini pediatrici non contengono più thimerosal come conservante**

Alluminio

- L'alluminio viene utilizzato come adiuvante, in minime quantità, nella maggior parte dei vaccini (no MPR)

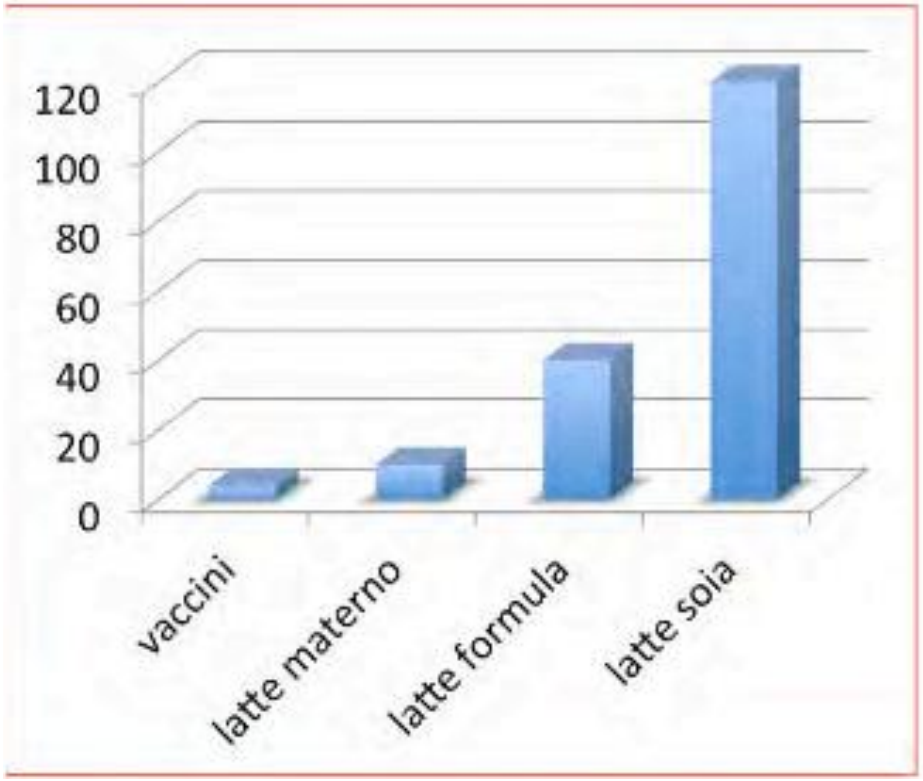
- L'alluminio è il metallo più frequente in natura: nel cibo che mangiamo, nell'acqua che beviamo e nell'aria che respiriamo

http://www.chop.edu/export/download/pdfs/articles/vaccine-education-center/aluminum.pdf

Quanto alluminio nei vaccini?

- Nei primi 6 mesi di vita un bambino può ricevere **4 mg** di alluminio dai vaccini

- Nello stesso periodo il bambino riceverà 10 mg di alluminio dal latte materno, 40 mg se prenderà latte preparato, 120 mg se prenderà latte di soia



http://www.chop.edu/export/download/pdfs/articles/vaccine-education-center/aluminum.pdf

Il vaccino morbillo-parotite-rosolia può causare l’autismo?

NO!

MMR e disordini dello spettro autistico

L’articolo di Andrew Wakefield

EARLY REPORT

Early report

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

Lancet. 1998 Feb 28;351(9103):637-41.

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

- **Background**: Una serie consecutiva di bambini con enterocolite cronica e disordine regressivo dello sviluppo
- **Metodi**: 12 bambini inviati ad un'unità di gastroenterologia pediatrica con una storia di normale sviluppo seguita da perdita di abilità acquisite, incluso il linguaggio
- Valutazione gastroenterologica, neurologica, e dello sviluppo

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

- **Risultati**: Comparsa dei sintomi comportamentali associata dai genitori alla vaccinazione MMR i 8 dei 12 bambini, a morbillo e ad otite media in un bambino

  Tutti e 12 i bambini anomalie intestinali, da iperplasia nodulare linfoide a ulcerazione aftoide. All'istologia, infiammazione cronica irregolare nel colon di 11 bambini e iperplasia linfoide ileale reattiva in 7

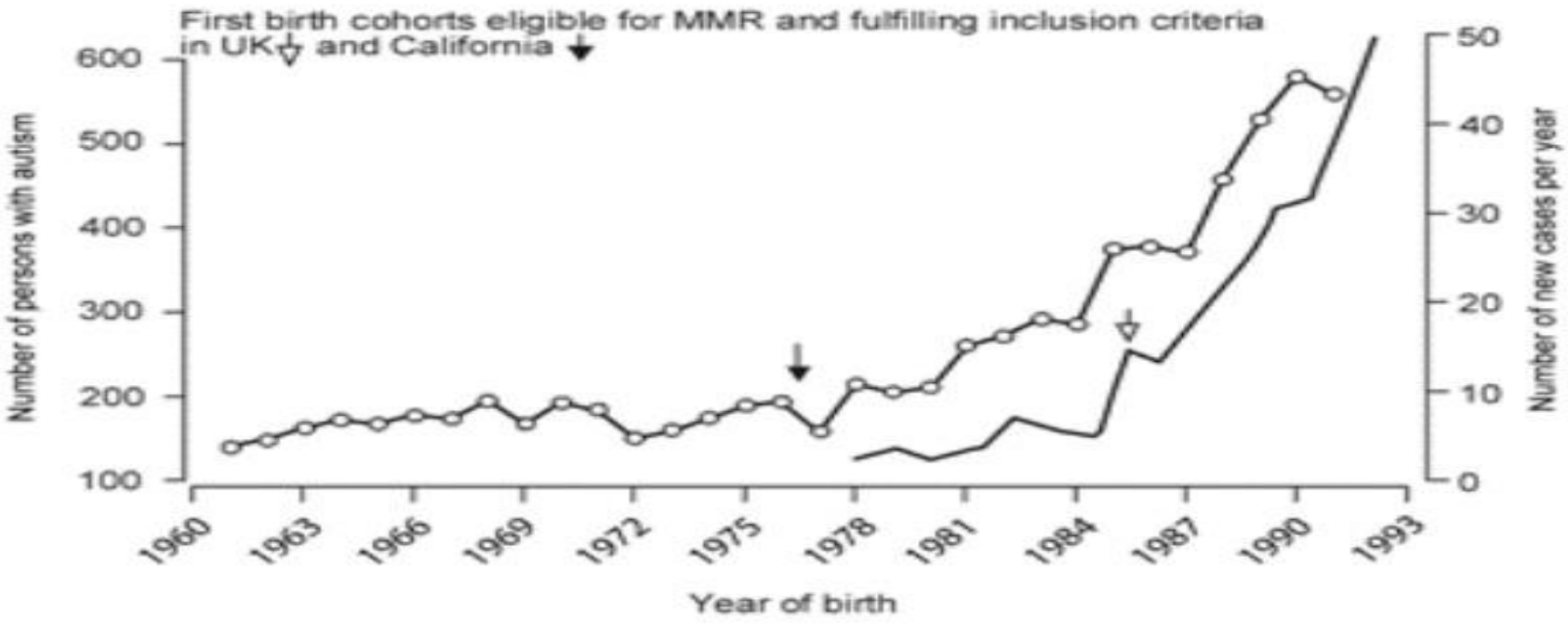
  Disordini comportamentali: autismo (9), psicosi disintegrativa (1), possibile encefalite post-virale o vaccinale (2)

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

- **Risultati**: Nessuna anomalia neurologica focale, MRI ed EEG normali
- **Interpretazione:** Malattia gastrointestinale associata a regressione dello sviluppo in un gruppo di bambini precedentemente normali, in genere associata a possibili trigger ambientali

Associazione temporale fra introduzione vaccino anti-morbillo e ASD?



Wakefield AJ. MMR vaccination and autism. *Lancet* 1999;**354**:949-50.

STATEMENT

THE LANCET • Vol 363 • March 6, 2004 • www.thelancet.com

A statement by the editors of *The Lancet*

Gravi accuse di *Research misconduct*:

- Contrariamente a quanto dichiarato, il consenso informato per procedure invasive non era stato fornito
- L'autorizzazione etica era stata data ad uno studio dal titolo «A new paediatric syndrome: enteritis and disintegrative disorder following measles/rubella vaccination»
- I bambini non era stati inviati bensì invitati a partecipare, determinando un bias di selezione a favore dei figli di genitori che riferivano un'associazione fra la malattia del bambino e la vaccinazione MMR
- I bambini era parte di un progetto finanziato da un Legal Aid Board diretto da Wakefield,
- I risultati erano stati passati ad avvocati ed usati per un'azione legale
- Wakefield aveva ricevuto 55.000 £ dal Legal Aid Board per condurre il progetto, e che i bambini inclusi erano sostanzialmente gli stessi

Ne derivava pertanto un palese conflitto di interessi

Retraction of an interpretation

This statement refers to the Early Report "Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children",[1] published in *The Lancet* in 1998. It is made by 10 of the 12 original authors who could be contacted. It should be noted that this statement does not necessarily reflect the views of the other co-authors.

The main thrust of this paper[1] was the first description of an unexpected intestinal lesion in the children reported. Further evidence has been forthcoming in studies from the Royal Free Centre for Paediatric Gastroenterology and other groups to support and extend these findings.[2,3] While much uncertainty remains about the nature of these changes, we believe it important that such work continues, as autistic children can potentially be helped by recognition and treatment of gastrointestinal problems.

We wish to make it clear that in this paper no causal link was established between MMR vaccine and autism as the data were insufficient. However, the possibility of such a link was raised and consequent events have had major implications for public health. In view of this, we consider now is the appropriate time that we should together formally retract the interpretation placed upon these findings in the paper, according to precedent.[4]

We were unable to contact John Linnell.

*Simon H Murch, Andrew Anthony, David H Casson, Mohsin Malik, Mark Berelowitz, Amar P Dhillon, Michael A Thomson, Alan Valentine, Susan E Davies, John A Walker-Smith

Centre for Paediatric Gastronenterology (SHM, MAT, JAW-S); and Departments of Histopathology (AA, APD), Child Psychiatry (MB), and Radiology (AV), Royal Free and University College Medical School, Royal Free Campus, London NW3 2PF, UK; Institute of Child Health, Royal Liverpool Children's Hospital, Liverpool (DHC); Department of Paediatrics, Queen Elizabeth the Queen Mother Hospital, Margate, Kent (MM); and Department of Histopathology and Cytology, Addenbrooke's Hospital, Cambridge, UK (SED)
(e-mail: s.murch@rfc.ucl.ac.uk)

1 Wakefield AJ, Murch SH, Anthony A, Linnell J, Casson DM, Malik M, Berelowtiz M, Dhillon AP, Thomson MA, Harvey P, Valentine A, Davies SE, Walker-Smith JA. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet* 1998; **351:** 637–41.

2 Murch S. MMR and autism: the debate continues. *Lancet* 2004; **363:** 568–69.

3 Horvath K, Perman JA. Autistic disorder and gastrointestinal disease. *Curr Opin Pediatr* 2002; **14:** 583–87.

4 Zhang L, Lopez P, He T, Yu W, Ho DD. Retraction of an interpretation. *Science* 2004; **303:** 467.

RETRACTION: February 2010

Retraction—Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

Following the judgment of the UK General Medical Council's Fitness to Practise Panel on Jan 28, 2010, it has become clear that several elements of the 1998 paper by Wakefield et al[1] are incorrect, contrary to the findings of an earlier investigation.[2] In particular, the claims in the original paper that children were "consecutively referred" and that investigations were "approved" by the local ethics committee have been proven to be false. Therefore we fully retract this paper from the published record.

The Editors of The Lancet
The Lancet, London NW1 7BY, UK

1 Wakefield AJ, Murch SH, Anthony A, et al. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet* 1998; **351**: 637–41.
2 Hodgson H. A statement by The Royal Free and University College Medical School and The Royal Free Hampstead NHS Trust. *Lancet* 2004; **363**: 824.

Published Online
February 2, 2010
DOI:10.1016/S0140-6736(10)60175-4

Early report

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

RETRACTED

Summary

Background We investigated a consecutive series of children with chronic enterocolitis and regressive developmental disorder.

Methods 12 children (mean age 6 years [range 3–10], 11 boys) were referred to a paediatric gastroenterology unit with a history of normal development followed by loss of acquired skills, including language, together with diarrhoea and abdominal pain. Children underwent gastroenterological, neurological, and developmental assessment and review of developmental records. Ileocolonoscopy and biopsy sampling, magnetic-resonance imaging (MRI), electroencephalography (EEG), and lumbar puncture were done under sedation. Barium follow-through radiography was done where possible. Biochemical, haematological, and immunological profiles were examined.

Findings Onset of behavioural symptoms was associ[illegible] by the parents, with measles, mumps, and rub[illegible] vaccination in eight of the 12 children, with meas[illegible] infection in one child, and otitis media in [illegible]. All 1[illegible] children had intestinal abnormalities, rang[illegible] from lymphoid nodular hyperplasia to [illegible]hoid u[illegible]ration. Histology showed patchy chronic inflam[illegible] in 11 children and reactive ileal lymph[illegible]perplasia in seven, but no granulomas. Behavioural disorders included autism (nine), disintegrative [illegible]sis (one), a[illegible] possible postviral or vaccinal encephalitis [illegible]). There were no focal neurological ab[illegible]malities and [illegible] and EEG tests were normal. Abno[illegible] laboratory results [illegible]re significantly raised urinary [illegible]thylma[illegible] acid compared with age-matched contro[illegible]03), low haemoglobin in four children, [illegible] low s[illegible]m IgA in [illegible] children.

Interpretation [illegible] identi[illegible] associated gastrointestinal di[illegible]se and [illegible]evelopmental regression in a group of previ[illegible]ly [illegible]n, which was generally associated in time [illegible] possible environmental triggers.

Lancet 199[illegible]**351:** 637–41
See Commentary page

Inflammatory Bowel Disease Study Group, University Departments of Medicine and Histopathology (A J Wakefield MRCS, A Anthony MB, J Linnell MD, A P Dhillon MRCPath, S E Davies MRCPath) **and the University Departments of Paediatric Gastroenterology** (S H Murch MB, D M Casson MRCP, M Malik MRCP, M A Thomson FRCP, J A Walker-Smith FRCP,), **Child and Adolescent Psychiatry** (M Berelowitz FRCPsych), **Neurology** (P Harvey FRCP), **and Radiology** (A Valentine FRCR), **Royal Free Hospital and School of Medicine, London NW3 2QG, UK**

Correspondence to: Dr A J Wakefield

Introduction

We saw several children who, after a p[illegible] of apparent normality, lost acquired skills, incl[illegible] com[illegible]ication. They all had gastrointestinal [illegible]ymptoms, [illegible]luding abdominal pain, diarrhoea, and [illegible]ting and, [illegible] some cases, food intolerance. We [illegible]cribe [illegible] clinical [illegible]ings, and gastrointestinal featur[illegible] of these ch[illegible]en.

Patients and meth[illegible]s

12 children, com[illegible]ively [illegible]red to [illegible] department of paediatric gastr[illegible]rology [illegible] a hi[illegible]y of a pervasive developmental [illegible]der with los[illegible]ed skills and intestinal symptoms [illegible] abdomina[illegible]in, bloating and food intolerance), were inv[illegible]ated. All children were admitted to the ward f[illegible]ck, accomp[illegible]d by their parents.

[illegible]ical investigations

[illegible] took histo[illegible] including details of immunisations and [illegible]ure to infec[illegible] diseases, and assessed the children. In 11 ca[illegible] the histo[illegible] obtained by the senior clinician (JW-S). Neur[illegible]l psychiatric assessments were done by [illegible]ultant staff (PH, MB) with HMS-4 criteria.[illegible] Developmental [illegible] included a review of prospective developmental records from [illegible], health visitors, and general practitioners. Four children did not undergo psychiatric assessment in hospital; all had been assessed professionally elsewhere, so these assessments were used as the basis for their behavioural diagnosis.

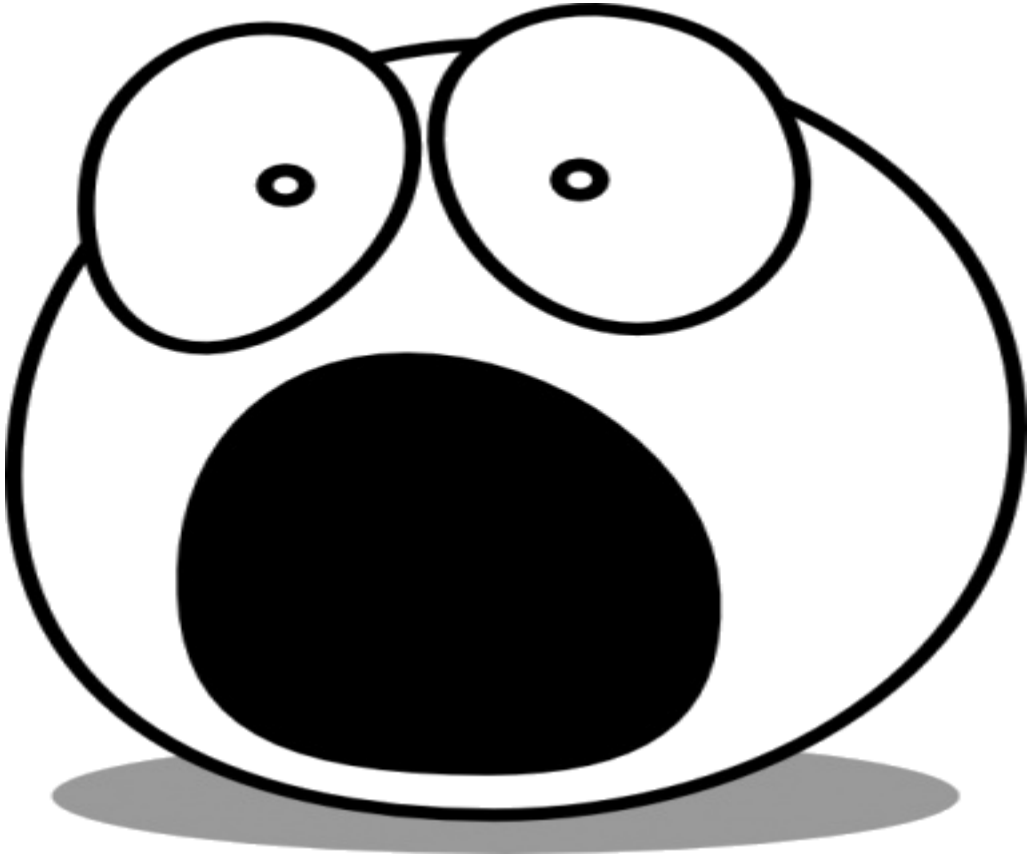
After bowel preparation, ileocolonoscopy was performed by SHM or MAT under sedation with midazolam and pethidine. Paired frozen and formalin-fixed mucosal biopsy samples were taken from the terminal ileum; ascending, transverse, descending, and sigmoid colons, and from the rectum. The procedure was recorded by video or still images, and were compared with images of the previous seven consecutive paediatric colonoscopies (four normal colonoscopies and three on children with ulcerative colitis), in which the physician reported normal appearances in the terminal ileum. Barium follow-through radiography was possible in some cases.

Also under sedation, cerebral magnetic-resonance imaging (MRI), electroencephalography (EEG) including visual, brain stem auditory, and sensory evoked potentials (where compliance made these possible), and lumbar puncture were done.

Laboratory investigations

Thyroid function, serum long-chain fatty acids, and cerebrospinal-fluid lactate were measured to exclude known causes of childhood neurodegenerative disease. Urinary methylmalonic acid was measured in random urine samples from eight of the 12 children and 14 age-matched and sex-matched normal controls, by a modification of a technique described previously.[2] Chromatograms were scanned digitally on computer, to analyse the methylmalonic-acid zones from cases and controls. Urinary methylmalonic-acid concentrations in patients and controls were compared by a two-sample *t* test. Urinary creatinine was estimated by routine spectrophotometric assay.

Children were screened for antiendomysial antibodies and boys were screened for fragile-X if this had not been done



thebmj

Editorials

Wakefield's article linking MMR vaccine and autism was fraudulent

BMJ 2011; 342 doi: http://dx.doi.org/10.1136/bmj.c7452 (Published 06 January 2011) Cite this as: BMJ 2011;342:c7452

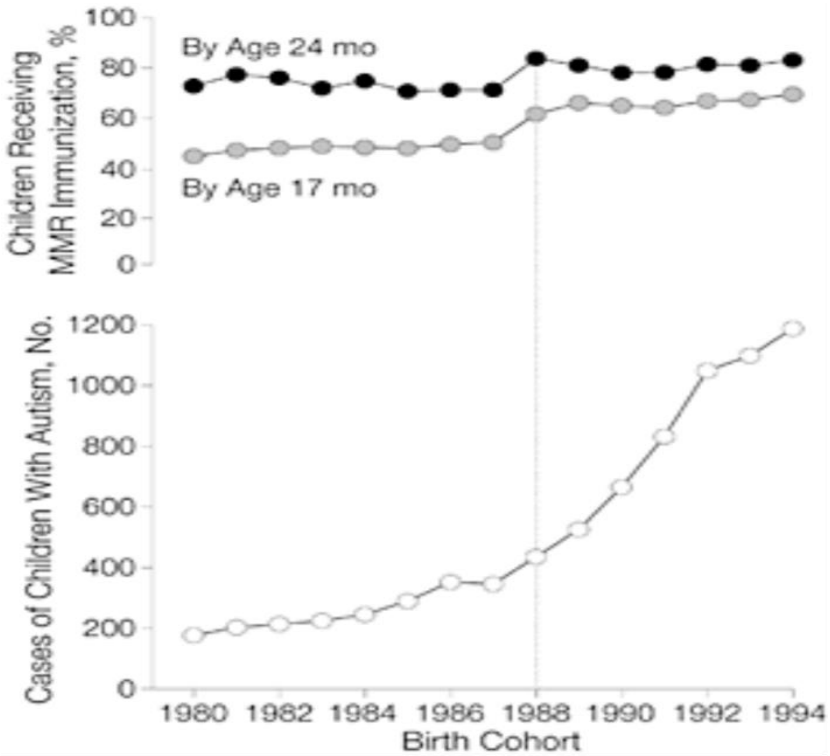
Fiona Godlee, editor in chief, Jane Smith, deputy editor, Harvey Marcovitch, associate editor
[1]*BMJ, London, UK*

Correspondence to: F Godlee fgodlee@bmj.com

Clear evidence of falsification of data should now close the door on this damaging vaccine scare

From: **Time Trends in Autism and in MMR Immunization Coverage in California**

Dales L. JAMA. 2001;285(9):1183-1185. doi:10.1001/jama.285.9.1183



The upper 2 curves indicate the percentages of children receiving MMR immunization by 17 and 24 months of age, respectively. The lower curve indicates the number of cases of children with autism(and California Department of Development Services, unpublished data, 2000).The vertical dotted line at birth year 1988 is provided as a temporal reference point in comparing the shapes of these curves.

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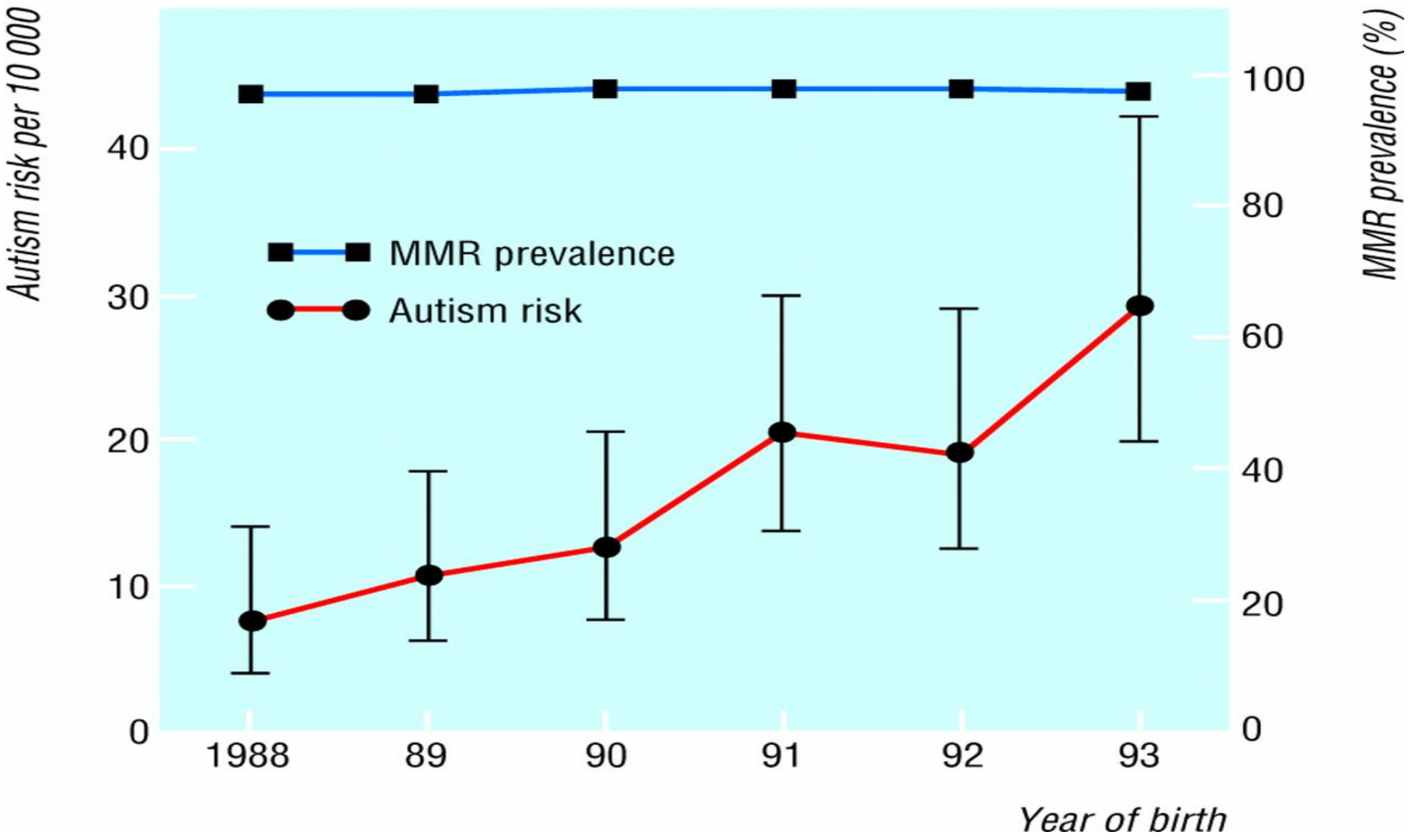
Nessuna associazione temporale fra MMR e autismo in UK



Kaye JA, BMJ 2001

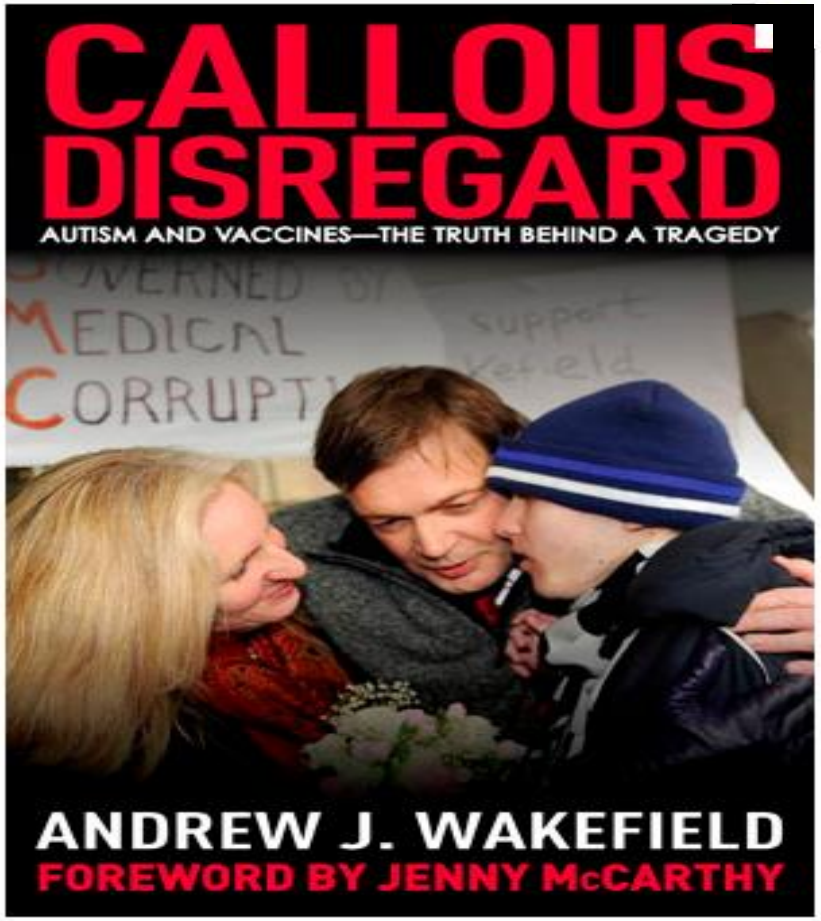
Meta-analisi di studi su vaccini (incluso MPR) e ASD

- Luke E. Taylor, Vaccine 2014: 5 studi di coorte per un totale di 1.256.407 bambini e 5 studi caso-controllo coinvolgenti 9.920 bambini.
  Nessuna associazione fra l'autismo e/o i disordini dello spettro autistico e vaccinazioni, vaccino MPR, o possibili componenti dei vaccini quali mercurio e thimerosal.

- De Micheli V, the Cochrane Collaboration 2012: Nessuna associazione diretta fra vaccino MPR e disturbi dello spettro autistico.

Effetto della campagna anti-vaccini

- Bambini non vaccinati, aumento del rischio di malattia e di morte
- Cattiva reputazione per i vaccini
- Fondi e tempo per la ricerca buttati al vento

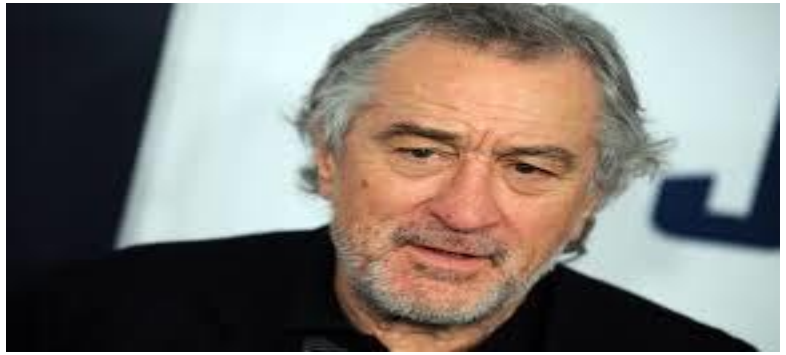


Wakefield radiato dall'OdM UK nel 2012

2010

Red Ronnie: demenziale vaccinare i bambini

Jenny McCarthy



«I’m not anti-vaccine… let’s find out the truth

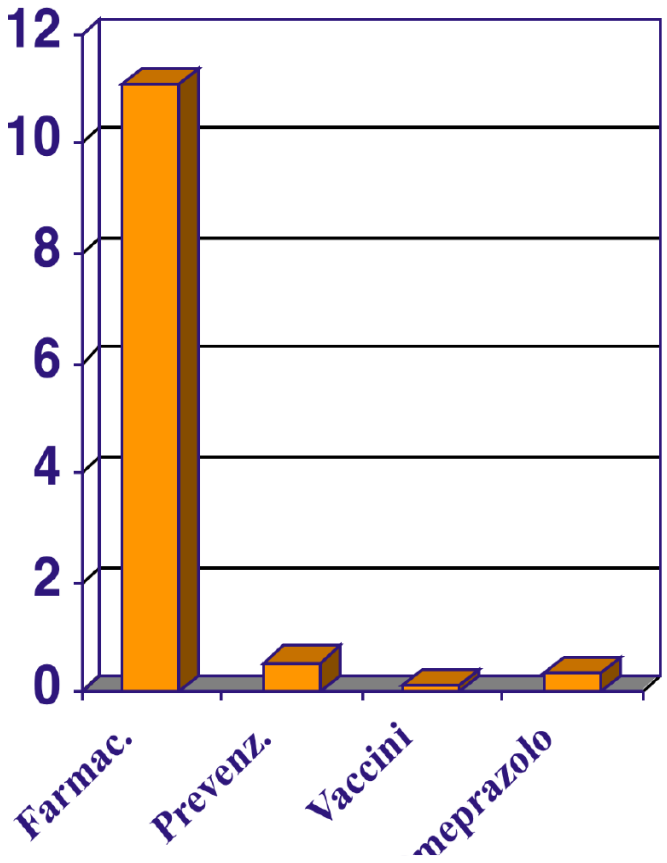
Sicurezza dei vaccini contro l'HPV

Tutti i vaccini hanno dimostrato un profilo di sicurezza favorevole:

- dati dei trial clinici
- dati di sorveglianza post-marketing (studi ad hoc e farmacovigilanza)
- revisioni sistematiche e metanalisi di trial clinici, randomizzati e **controllati**, su vaccini contro l'HPV

Chissà quanti interessi economici ci stanno dietro…

Analisi spesa farmaceutica, prevenzione e vaccini



Spesa Vaccini: pari all’1,4% della spesa totale del SSN per i farmaci