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MMR and autism: 10 years of controversy

It is now 10 years since *The Lancet* published the study that triggered concern of a link between measles vaccine and the development of autistic spectrum disorder (ASD)[1]. A subsequent virological study was cited as evidence that supported this association[2]. These reports were viewed with scepticism by the scientific community at the time due to the lack of clinical and technical validation and detail. A recent detailed review of the methods used in these studies has now discredited them[3]. At the same time a range of carefully designed and conducted epidemiological[4,5,6] and biological studies[7,8,9] have failed to support any link. Studies examining time trend links between ASD and MMR failed to find an association between introduction[5] or cessation[6] of MMR vaccination and rate of autism diagnosis. A large case-control study in the UK reported no association between individual vaccination and ASD diagnosis[4]. Biological studies using methods designed specifically to identify measles virus have failed to find evidence of its persistence in peripheral blood[7,8]. Our study investigated a large community sample of children with ASD from the South of England and found no difference in the level of circulating measles virus and measles antibody between children with ASD and controls; this adds to the overwhelming body of evidence that has found no link between MMR and autism[10].

The controversy has had significant consequences for MMR uptake in the UK. The MMR programme had been effective in controlling measles following its introduction in 1988 and the 1994 mass campaign that successfully vaccinated 92% of children targeted led to the interruption of measles transmission in the mid 1990s. Only small numbers of cases linked to importation were recognised over the next 10 years. This picture has changed since 1998. There has been a significant drop in vaccine coverage that is particularly marked in parts of London[11]. The consequences are inevitable – a rise in the number of measles cases has been seen over the last few years as susceptibles have built up in the population[12]. Indigenous circulation of measles is now re-established and the consequential burden of disease will follow unless efforts to reach unvaccinated and partially vaccinated children of all ages take place.

Several factors are likely to have contributed to the drop in vaccine uptake, including changes in services delivering the vaccines. There continues to be general public concern of risk that is reflected in parental decisions about MMR vaccination[13,14]. Notably in the Baird et al. study, in which children received MMR1 prior to the Lancet study suggesting a link with autism, there was lower uptake of the MMR2 amongst both children with ASD and children with statements of special educational needs without ASD, likely reflecting parental concern about vaccination following a diagnosis of developmental abnormality.

It is well known that parents most frequently refer to primary health professionals, in particular health visitors and general practitioners, as their source of information about immunisation. Primary care providers therefore play a vital role in communicating with parents of children approaching the age for MMR and with those who chose not to immunise their children at the height of the national debate. By

reminding parents of the risk of measles and by supplying evidence based advice - specifically that there is no support for an association with ASD – the opportunity to make a real difference to public health exists.

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