

# Administration of measles-mumps-rubella vaccination with other childhood schedule vaccines

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The Measles Control Campaign, which is in progress, will offer measles-mumps-rubella (MMR) vaccination to all primary school children in Australia. In addition, MMR vaccination will be promoted for pre-school and secondary school children who are not already up to date with the Standard Vaccination Schedule. During the Campaign, some children will simultaneously require or will have recently received other vaccinations as part of the Schedule. There is clear evidence that MMR can be administered safely and effectively at any time relative to all inactivated vaccines on the Schedule, such as DTP, Hib, and HBV.<sup>1</sup> However, because oral polio (OPV) is a live vaccine, possible interactions between it and MMR deserve further consideration.

The National Health and Medical Research Council (NHMRC) recommends that OPV and MMR may be safely administered at the same time, but if given on separate days the second live vaccine should be deferred for at least four weeks.<sup>2</sup> This precaution is based on theoretical concerns that response to the first vaccine could, via circulating interferon, reduce immunogenicity of the second. However, there is comparatively little data in support of this recommendation,<sup>3</sup> and there are several empirical and pragmatic arguments against it:

- intercurrent febrile illnesses, including viral infections, are no longer considered a contraindication to MMR vaccination;
- OPV viruses replicate in the intestine and induce local immunity that is unlikely to interfere with MMR response; and
- in the context of a MMR catch-up campaign, most OPV doses will be boosters and diminished responses to these are unlikely to be critical.

Deferring vaccination increases the risk of incomplete immunisation. Theoretical concerns regarding reduced immunogenicity in an individual must be weighed against the objective of achieving high coverage. Outbreak reports have shown that many cases of measles might have been

prevented if MMR had been co-administered with another vaccine.<sup>5</sup>

For these reasons, and in the absence of contrary evidence, it is recommended both in the United States of America and the United Kingdom that OPV and MMR vaccines can be administered at any time in relation to each other.<sup>6,7</sup> In view of this, the NHMRC guidelines will be reviewed. In the mean time, for the purposes of the Measles Control Campaign we recommend that MMR vaccination should not be deferred because of recent OPV vaccination.

1. King GE, Hadler SC. Centers for Disease Control: current issues in pediatrics. Editor: Orenstein W. Simultaneous administration of childhood vaccines: an important public health policy that is safe and efficacious. *Pediatr Infect Dis J* 1994;13:394-407.
2. National Health and Medical Research Council. Measles, Mumps and Rubella; Poliomyelitis. In: The Australian Immunisation Handbook. Australian Government Publishing Service. Canberra, 1997:87,101.
3. Petralli JK, Merigan TC, Wilbur JR. Action of endogenous interferon against vaccinia infection in children. *Lancet* 1965;2:401-5.
4. King GE, Markowitz LE, Heath J, et al. Antibody response to measles-mumps-rubella vaccine of children with mild illness at the time of vaccination. *JAMA* 1996;275:704-707.
5. Hutchins SS, Escolan J, Markowitz LE, et al. Measles outbreak among unvaccinated preschool-aged children: opportunities missed by health care providers to administer measles vaccine. *Pediatrics* 1989;83:369-374.
6. (UK) Department of Health. Immunisation intervals. In Salisbury D, Begg NT, eds. Immunisation against infectious disease. HMSO. London, 1996:24-25.
7. Centers for Disease Control. General recommendations on immunisation. Recommendations of the Advisory Committee on Immunisation Practices (ACIP). *MMWR* 1994;43:14-15.

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