State of Alaska Epidemiology Bulletin

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Egg Allergy and Vaccination with MMR

**Should Persons Allergic to Eggs Receive Measles, Mumps, or Rubella Vaccine?**
**Generally, "Yes"**

Currently, measles and mumps vaccines are produced in chick fibroblast cell cultures while rubella vaccine is produced in duck fibroblast cultures. In contrast to vaccines prepared from viruses grown in whole eggs, those prepared from cell cultures are essentially devoid of potentially allergenic substances derived from host tissue. Experience has borne this out: though more than 90 million live measles vaccine doses have been administered in the U.S., there has not been a single report of immediate or anaphylactic type reaction. Furthermore, Kamin et *al* in two studies found no reactions to measles vaccine in 22 persons who reported histories of severe allergic reaction after eating egg protein.[1,2]

Recent recommendations from both the USPHS Advisory Committee on Immunization Practices and the American Academy of Pediatrics Committee on Infectious Diseases specifically state that the currently available measles, mumps, and rubella vaccines can be given to persons allergic to eggs, chickens, or ducks.3.4 Nonetheless, manufacturers of measles, mumps, and rubella vaccines have been reluctant to discontinue listing these allergies as contraindications in their package inserts.

In a recent memorandum, the Immunization Division of the Bureau of State Services, CDC, stated, "...we consider (egg, chicken, or duck allergy) as, at most, a relative contraindication (for measles, mumps, or rubella immunization). Physicians caring for persons with these types of allergies must weigh several factors when making a decision regarding these vaccines...(including) the risk of the child contracting the illness, the fact that severe anaphylactic reactions have not been reported in association with these vaccines, and the relative severity of the child's allergic reaction to eggs, ducks, or chickens. It should be remembered that the risk from measles, mumps, and rubella continues until the disease is contracted, while the minimal risk from the vaccines occurs only once .*If* a patient has demonstrated a previous **severe** reaction to egg protein (e.g., anaphylaxis), then it would of course be prudent to administer vaccine in a setting where this type of reaction could be treated." In these rare situations, we would add, a physician should also consider omitting the vaccine entirely.

Thus, aside from those individuals who have a history of previous **anaphylactic reaction to egg protein**, the currently available measles, mumps and rubella vaccines can be given to persons allergic to eggs, chickens or ducks.

References:

1. Kamin PB et al: Live attenuated measles vaccine; its administration to children allergic to egg protein. JAMA 183:647, 1963

2. Kamin PB et al: Use of live, attenuated measles virus vaccine in children allergic to egg protein. JAMA 193:1125, 1965

3. MMWR 25:350, 1976

4. Report of the Committee on Infectious Disease: American Academy of Pediatrics. Evanston, III., 1977 *(California Morbidity, Weekly Report from the Infectious Disease Section, State Department of Health, April* 14, 1978, *No.* 14)