MMR Vaccination

MMR vaccine is a three part vaccine, given by injection, which is to protect (immunise) against Measles, Mumps and German Measles (Rubella). In the UK it is given to children at 12 to 15 months, with a reinforcing dose (a booster) before school, usually between 3 and 5 years.

The Vaccine

The vaccine is a freeze-dried preparation which contains live virus particles of the three viruses, which have been modified (attenuated) to stop them from producing the full effects of the disease.

The vaccine is given, by injection, into the thigh or upper arm. It has been found that a booster, before school, makes it likely that more people will be properly protected.

The idea is to fool the body's defence system into thinking it is under attack by the viruses, and to produce defence mechanisms (antibodies) which will fight off the conditions if they are encountered in the future. There is no risk of someone who has been vaccinated infecting other people with the viruses.

Usually the vaccine is for children, but it can be given to non-immune adults. It is suggested that people in long term institutional care, who are not immune, should have the vaccine. It is also recommended that students starting at college or university, who have not received the vaccine previously, should be offered it.

Reasons for having the inoculation

The most serious of these, as far as how ill the child gets, is Measles, but all of them can have serious and even fatal complications. In the case of German Measles the major worry is that of risk to the unborn baby if caught by a woman during early pregnancy. Mumps too can have serious affects, and affect male fertility, when caught after puberty.

These conditions are still common on a world-wide basis. In countries like the UK, where the take-up rate of immunisations is high, the actual occurrence of the conditions becomes rare. It is not, however, possible to stop immunisation, because of the high level of the conditions elsewhere in the world, and the volume of international travel.

It is true that the amount that a disease occurs (the incidence) will reduce once a certain percentage of the population has been inoculated. This is called "herd immunity". It is possible for some individuals to depend on this and avoid having

the vaccine themselves. This is, however, selfish and if everybody had that attitude, the diseases would remain widespread.

Side effects

Anything we take into our body can have side effects. Medicines, and in this case MMR vaccine, are no exception, but vaccines are among the safest medicines.

The commonest side effects are similar to a mild version of one of the viruses involved, and not very different to the measles vaccine which was previously used. The child may be generally less vigorous, have a slight fever and possibly a rash, most often about a week after the immunisation and lasting about two or three days. Swelling of the glands in the cheeks, as seen in mumps, may happen about three weeks after the injection in about 1 in 100 cases.

Occasionally more serious events, such as convulsions, occur. This happens in about 1 in 1000 cases, six to eleven days after the injection. If your child develops worrying side effects you should contact your doctor.

Other conditions where a link with MMR Vaccine has been suggested

Asthma

Asthma has been linked, by some studies, with MMR vaccine, but the current view of the experts (epidemiologists) is that there is no strong evidence to support this.

Guillain-Barré syndrome

Guillain-Barré Syndrome is a rare condition of the nervous system which causes acute paralysis. There is strong evidence that this is not brought about by by measles vaccination, which was a worry previously expressed by some people.

(Ref: de Silveira C M, Salisbury D M, de Quadros C A. Measles Vaccination and Guillain-Barré Syndrome. The Lancet 1997: 349, 14-16.)

Crohn's Disease

Crohn's Disease is a chronic inflammatory disease of the bowels. Many factors have been linked to this illness. Some research has been published which suggests a possible link between measles vaccine and Crohn's Disease.

The World Health Organisation (WHO) has apparently rejected this work, as have many other experts in the field. Independent researchers have not been able to confirm the link, which is what the scientific community would expect in order to

accept it. The National Association for Colitis and Crohn's has looked at the evidence and supports the two dose MMR programme in the UK.

Autism

Autism is a condition which leads to delayed speech and communication and intellectual impairment, which is usually diagnosed in the second year of life. Research in Sweden shows that the number of cases of Autism diagnosed did not rise after the introduction of the MMR vaccine.

Subacute Sclerosing Panencephalitis

Subacute Sclerosing Panencephalitis (SSPE) is a rare condition which causes degeneration of the nervous system some years after a natural infection with measles. It leads to brain damage and death. This is a rare complication of measles (1 in 8000 who catch it under two years old) and comes on after about eight years.

The evidence is that the number of people with SSPE has fallen dramatically since the introduction of measles vaccine in the UK in the 1960s. ie that the measles component of the MMR vaccine directly protects against this terrible condition.

(Ref: Miller C Farrington C P, Herbert K. The epidemiology of subacute sclerosing panencephalitis in England and Wales, 1970 to 1989 . International Journal of Epidemiology. 1992; 21: 998 -1006.)

Allergy to eggs

If your child is strongly allergic to eggs you should mention it to your doctor. The administration of the vaccine (which has eggs involved in its production) has been proved to be safe, even in such cases, but your doctor may prefer the injection to be given as a day case at the hospital, if there is any doubt.

(Ref: James J M, Burks A W, Robertson P K, Sampson H A. Safe administration of the measles vaccine to children allergic to eggs. New England Journal of Medicine; 1995; 332:19,1262-1266.)

Weighing up the risks versus the benefits

Nothing in life is without risk, but here the balance, for most people, is in favour of having the MMR Vaccine. It not only protects the patient, but also unborn babies.

Complications	Risk after natural disease	Risk after first dose of MMR
Fits (convulsions)	1 in 200	1 in 1000
Meningitis / encephalitis	1 in 200 to 1 in 5000	1 in 1000000
Conditions affecting the clotting of the blood	1 in 3000	1 in 24000
Severe allergic response (anaphylaxis)	-	1 in 100000
Deaths	1 in 8000 to 1 in 10000 (depends on age)	0

Some children are at particular risk from a measles infection and should have the MMR vaccine (or measles vaccine in countries where only that is available). Children with:

- Cystic Fibrosis
- Congenital heart disease
- Kidney disease
- Downs syndrome
- Poor growth

Also children, from one year of age, who are in residential care or day care.