



Measles, mumps and rubella infections and encephalitis

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Over the past few years, measles mumps and rubella vaccination coverage has not been high enough in the UK. Increases in measles cases in 2006, and the first death of a child from measles for more than a decade, have highlighted how important it is to make sure that children are protected.

Measles infection and encephalitis

Measles causes encephalitis in around 1 in 1,000 children. Measles encephalitis caused the death of Roald Dahl's daughter Olivia in 1962. He became an ardent supporter of measles vaccination as a result of the tragic loss of his daughter. He wrote a letter to parents encouraging them to get their children vaccinated (see copy of letter attached). He dedicated James and the Giant Peach and the BFG to Olivia.

Other countries such as Italy and Ireland have had epidemics of measles in recent years because not enough children have had the MMR vaccine. As a result, children have developed encephalitis and children have died from measles in those countries.

Measles is also the cause of a disease called Subacute sclerosing panencephalitis (SSPE). This is a rare condition that can develop some years after natural measles infection. The average time between someone having measles to the first symptoms of SSPE is around 8 years. It is a degenerative neurological condition which progressively destroys nerve cells in the brain almost always leading to mental deterioration and death. Children are especially at risk of SSPE if they are very young when they catch measles. It affects around 1 in 8,000 children who are infected when they are under 2 years old.

SSPE is not caused by the MMR vaccine. Measles vaccine and MMR vaccine directly protect against SSPE.

Since the introduction of measles vaccine in the 1960s, the numbers of people diagnosed with SSPE has decreased dramatically, and the death rate from SSPE is expected to fall even further if measles remains under control.

Mumps infection and encephalitis

Mumps virus frequently infects the central nervous system. Before the MMR vaccine was introduced mumps used to be the most common cause of admission to hospital with meningitis or encephalitis, occurring in 1 in 200-5,000 children. It also causes deafness. MMR vaccine has had a dramatic impact and hardly any children are admitted to hospital with mumps these days. Outbreaks of mumps have occurred in the last few years in older children and young adults who were too old to have received the two doses of MMR vaccine recommended before going to school.

Rubella virus and encephalitis

Rubella virus causes severe brain injury in children if their mother is infected in early pregnancy. The brain injury is caused by meningo-encephalitis, part of the "congenital rubella syndrome". Rubella virus can also cause a progressive "pan-encephalitis" later in life in children who were infected in the womb and survived but remain chronically infected.

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Before MMR was introduced cases of congenital rubella still occurred in the UK. We could not control the infection when we only gave the vaccine to teenage girls because the rubella virus continued to circulate in younger children, teenage boys and young men. The small percentage of mothers who were not protected fully by rubella vaccine caught rubella, often from their own children or their partner. The only way to be sure of protecting unborn babies is to stop the rubella virus circulating in the whole community. Now this has happened, and it is one of the great successes of MMR vaccine.

Few young mothers will have any personal experience of the effects of rubella today, which were well known in the past. Agatha Christie illustrated it very well in her murder mystery story, *The Mirror Cracked from Side to Side*. An actress murders the person she finds gave her rubella years before when she was pregnant with her only child, who was born severely brain injured.

Charities such as Sense are campaigning to help restore MMR vaccination coverage to previous levels (<http://www.sense.org.uk/publications/allpubs/rubella/mmrmp.htm>)

MMR vaccine

MMR vaccine is a very effective way to prevent measles, mumps and rubella. All three of these infections are important causes of encephalitis, and before MMR vaccine was introduced all three infections were common in the UK

There is a wide range of authoritative information available on the good safety record of MMR vaccine (see <http://www.mmrthefacts.nhs.uk/>). The vaccine is unequivocally safer than letting children catch the diseases. The table below compares the risk of measles with MMR vaccine.

Balance of risk comparing measles and MMR vaccine

Condition	Children affected after catching measles	Children affected after the first dose of MMR
Convulsions	1 in 200	1 in 1000
Meningitis or encephalitis	1 in 200 to 1 in 5000	Less than 1 in a million
SSPE	1 in 8000 for children under 2	0
Death	1 in 2500 to 1 in 5000 depending on age	0

Useful and reliable websites

www.sense.org.uk

www.mmrthefacts.nhs.uk

www.hpa.org.uk/infections/topics_az/vaccination/mmr.htm

www.immunisation.org.uk/

MEASLES: A dangerous illness by ROALD DAHL (1986)

Olivia, my eldest daughter, caught measles when she was seven years old. As the illness took its usual course I can remember reading to her often in bed and not feeling particularly alarmed about it. Then one morning, when she was well on the road to recovery, I was sitting on her bed showing her how to fashion little animals out of coloured pipe-cleaners, and when it came to her turn to make one herself, I noticed that her fingers and her mind were not working together and she couldn't do anything.

“Are you feeling all right?” I asked her.

“I feel all sleepy,” she said.

In an hour, she was unconscious. In twelve hours she was dead.

The measles had turned into a terrible thing called measles encephalitis and there was nothing the doctors could do to save her.

That was twenty-four years ago in 1962, but even now, if a child with measles happens to develop the same deadly reaction from measles as Olivia did, there would still be nothing the doctors could do to help her.

On the other hand, there is today something that parents can do to make sure that this sort of tragedy does not happen to a child of theirs. They can insist that their child is immunised against measles. I was unable to do that for Olivia in 1962 because in those days a reliable measles vaccine had not been discovered. Today a good and safe vaccine is available to every family and all you have to do is to ask your doctor to administer it.

It is not yet generally accepted that measles can be a dangerous illness.

Believe me, it is. In my opinion parents who now refuse to have their children immunised are putting the lives of those children at risk.

In America, where measles immunisation is compulsory, measles like smallpox, has been virtually wiped out.

Here in Britain, because so many parents refuse, either out of obstinacy or ignorance or fear, to allow their children to be immunised, we still have a hundred thousand cases of measles every year.

Out of those, more than 10,000 will suffer side effects of one kind or another.

At least 10,000 will develop ear or chest infections.

About 20 will die.

LET THAT SINK IN.

Every year around 20 children will die in Britain from measles.

So what about the risks that your children will run from being immunised?

They are almost non-existent. Listen to this. In a district of around 300,000 people, there will be only one child every 250 years who will develop serious side effects from measles immunisation!

That is about a million to one chance. I should think there would be more chance of your child choking to death on a chocolate bar than of becoming seriously ill from a measles immunisation.

So what on earth are you worrying about?

It really is almost a crime to allow your child to go unimmunised.

The ideal time to have it done is at 13 months, but it is never too late. All school-children who have not yet had a measles immunisation should beg their parents to arrange for them to have one as soon as possible.

Incidentally, I dedicated two of my books to Olivia, the first was *James and the Giant Peach*. That was when she was still alive. The second was *The BFG*, dedicated to her memory after she had died from measles. You will see her name at the beginning of each of these books. And I know how happy she would be if only she could know that her death had helped to save a good deal of illness and death among other children.

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