



A small scar

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Vaccination is the medical sacrament corresponding to baptism.

Samuel Butler, *Notebooks*, 1912

I remember, as a child, lining up outside a community centre in Montreal, Que, for a special vaccine. The day was cloudy and drizzly, which was an accurate reflection of my mood. I didn't know which vaccine I was getting. I didn't know why I was getting it. All I knew was that some nurse was going to hurt me and that eventually I would have a shiny, round patch.

On that miserable day, I, along with hundreds of other children from my neighbourhood, received the smallpox vaccine. A vaccine that is no longer given in Canada. A vaccine that is no longer necessary in Canada.

Smallpox (variola virus) is one of the most devastating diseases known. It kills at least 25% of those affected, kings and paupers alike. Queen Mary II of England, Emperor Joseph I of Austria, King Luis I of Spain, Tsar Peter II of Russia, Queen Ulrika Eleonora of Sweden, and King Louis XV of France were killed by smallpox. As recently as the mid-20th century, an estimated 50 million cases occurred each year.¹ It is estimated that smallpox resulted in more than 300 million deaths in the 20th century alone.² Those who survive smallpox are usually left blind or with deep pitted scars.

In the 18th century, an English farmer, Benjamin Jesty, noticed that his 2 dairymaids had nursed family members with smallpox and had not become ill. Previously, they had both contracted cowpox. Because it was well known that survival after smallpox conferred immunity, Jesty, who had survived smallpox, reasoned that cowpox was protective as well. In 1774, he scratched his wife Elizabeth and their 2 boys on the arm with a needle and inserted pus taken from the udder of a cow infected with cowpox. The first known vaccination had taken place. Jesty was initially vilified for his actions, but later immunized friends and other family members.³

Twenty-two years later, Dr Edward Jenner first coined the term "vaccination" and demonstrated publicly that inoculation with cowpox could protect against smallpox.¹ The term vaccination was derived from the Latin word *vacca*—for cow.⁴ Almost 200 years after the first known immunization for smallpox, however, 10 to 15 million people per year were still developing the disease.¹

In 1967, the World Health Organization (WHO) launched a worldwide plan to eradicate smallpox. In addition to routine vaccination of healthy people, the WHO used the ring vaccination method.⁵ In this technique, those who come into contact with a person who has been exposed to smallpox

are vaccinated, as well as the exposed person. Thus, this "ring" of vaccinated persons is used to prevent transmission of the infection.⁶ Through the success of this worldwide campaign (in which I played my small part), the global eradication of smallpox was certified in the spring of 1980. The last known natural case occurred in Somalia in 1977.¹

When I was a baby, the usual immunization schedule included 5 vaccines. Today, at least 13 vaccines are routinely administered to infants and children in Canada—and counting. With the addition of new vaccines, children born a few years apart might be on completely different immunization schedules. Immunization schedules and coverage also vary between provinces. No wonder many parents are confused; others are suspicious about the need for so many vaccinations. As a consequence, some parents refuse to immunize their children. Fortune and Wilson (page 2083) address ways in which physicians can work with these parents without damaging the physician-patient relationship.

Moss (page 2150) reviews the risks and benefits of the latest vaccines, and Howard and Lytwyn (page 2157) critically appraise the FUTURE II study of the quadrivalent human papillomavirus vaccine. Greiver (page 2116) shares her tips on immunizations for babies.

In 1972, the National Advisory Committee on Immunization in Canada recommended that routine immunization of infants for smallpox be stopped.² Very few Canadians born after 1972 have been immunized against smallpox. Those, like me, who were immunized prior to that date have little or no immunity left. Nothing, but a small scar as testimony to a grand global achievement. 🌿

References

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