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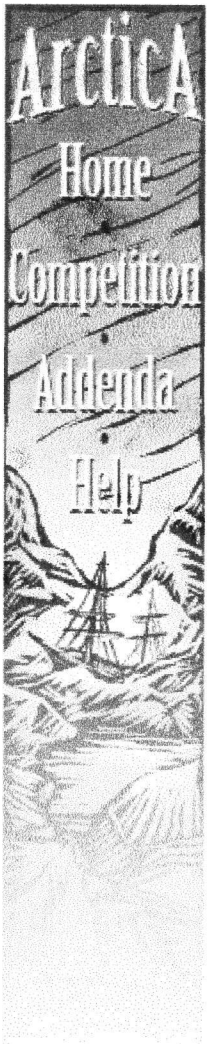

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Tell Me More About Polio

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POLIO (Poliomyelitis) is one of the most dramatic infectious diseases of the 20th century, which, thanks to the mass use of two types of polio vaccines introduced in the mid-1950s and early 1960s, is now approaching global eradication. During the first half of the 20th century, the grim terror of crippling polio epidemics regularly, though randomly, swept across the United States and Canada (and most of the industrialized world) with increasing ferocity, suddenly leaving large numbers of otherwise healthy children, and adults, permanently disabled, or dead due to paralysis of their breathing muscles.

Polio is caused by damage to the motor neurons (or voluntary nerves) of the spinal cord after an infection by the poliovirus. About two weeks after exposure to the virus, paralytic polio is characterized by an acute illness with fever and muscle pain, followed by varying degrees of weakness or paralysis in one or more parts of the body, such as the arms, legs, feet, hands, and back. These effects are often permanent. The most vulnerable to the disease are young children from about 4 to 14. The poliovirus can also strike nerves in the upper spinal cord and brain and cause deadly paralysis of the throat and chest, and sometimes even the heart. For chest paralysis cases, which included many adults, large "iron lungs" did the breathing for them; their entire body, except their head, sealed inside these "marvellous metal monsters," as iron lungs were described in the 1930s when they first became available. During the major epidemics of the 1950s there were often hospital polio wards crammed with 50 to 100 iron lungs running at once.

Polio is an ancient, though mainly harmless, infection of the intestinal tract that rarely progresses beyond a mild flu-like illness to invade the central nervous system and cause damage in the spinal cord. In nature, the poliovirus can only multiply in humans, although some monkey species can be deliberately infected in laboratories, and it can only survive outside the body in water or sewage for limited periods of time. The virus is spread from person to person by invisible carriers, mostly by faecal oral contamination through such common activities as changing a baby's diaper. During the late 19th and early 20th century, paralytic polio moved from an isolated childhood affliction, to a worsening epidemic threat, ironically, because of improving public health and hygiene standards that prevented, or delayed, an almost universal immunizing exposure to the virus during infancy when the body's immune system could easily fight it off before it caused any damage.

Until the late 19th century, and even into the 1930s, polio was generally known as "infantile paralysis." It was not medically described until 1789, and was not believed to be contagious until the 1910s, despite an increasing frequency of reported cases and outbreaks in Europe and North America during the second half of the 19th century. Though the specific damage it caused in the spinal cord was recognized by 1860, the poliovirus itself was not discovered until 1908. Despite one of the greatest fundraising and medical research efforts in history inspired by U.S. President Franklin D. Roosevelt, who was paralyzed in the legs by polio as an adult in 1921, little was understood about how the virus spread

until the 1940s. The first great step towards prevention came when the injectable Salk vaccine was developed and mass tested by American and Canadian scientists in the early 1950s and first made widely available to children in 1955. In the early 1960s a second type of polio protection, the Sabin oral vaccine, was introduced.

During the epidemic era, polio was known as the "summer plague," its incidence peaking each "polio season" with the summer heat and vanishing with the first autumn frost. However, a deadly polio epidemic among the native Inuit (Eskimos) in the Canadian Arctic during the winter of 1948-49 shattered this illusion and dramatically showed that polio had no geographical nor environmental boundaries. The virus had been brought into a small community in the Eastern Arctic by a missionary who had been infected while in the south, causing it to spread amongst an Inuit population that had no natural immunity. Adults were the most seriously affected. There is evidence of previous polio outbreaks in the Arctic among the native population, as well as settlers, but none any earlier than the 1920s.

Though nearing extinction today, polio remains a major problem in parts of Asia and Africa where access to the vaccines is limited. For those stricken by paralytic polio during the epidemic era, or who were not vaccinated, and who had compensated for its damage, an alarming number are now facing the debilitating late effects of the disease in the form of Post Polio Syndrome (PPS). Among those who faced epidemic polio as children and who are struggling now with PPS are such celebrities as musicians Neil Young and Joni Mitchell. Though likely eradicated by the end of the 20th century, the disabling physical and psychological effects of polio will continue to echo around the world well into the new millennium.

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POLIO WEBSITE LINKS

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