

HEADING: Beware the spinal trap

STANDFIRST: Some practitioners claim it is a cure-all, but the research suggests chiropractic therapy has mixed results – and can even be lethal, says **Simon Singh**.

TEXT: You might be surprised to know that the founder of chiropractic therapy, Daniel David Palmer, wrote that “99% of all diseases are caused by displaced vertebrae”. In the 1860s, Palmer began to develop his theory that the spine was involved in almost every illness because the spinal cord connects the brain to the rest of the body. Therefore any misalignment could cause a problem in distant parts of the body.

In fact, Palmer’s first chiropractic intervention supposedly cured a man who had been profoundly deaf for 17 years. His second treatment was equally strange, because he claimed that he treated a patient with heart trouble by correcting a displaced vertebra.

You might think that modern chiropractors restrict themselves to treating back problems, but in fact they still possess some quite wacky ideas. The fundamentalists argue that they can cure anything, including helping treat children with colic, sleeping and feeding problems, frequent ear infections, asthma and prolonged crying – even though there is not a jot of evidence.

I can confidently label these assertions as bogus because I have co-authored a book about alternative medicine with the world’s first professor of complementary medicine, Edzard Ernst. He learned chiropractic techniques himself and used them as a doctor. This is when he began to see the need for some critical evaluation. Among other projects, he examined the evidence from 70 trials exploring the benefits of chiropractic therapy in conditions unrelated to the back. He found no evidence to suggest that chiropractors could treat any such conditions.

But what about chiropractic in the context of treating back problems? Manipulating the spine can cure some problems, but results are mixed. To be fair, conventional approaches, such as physiotherapy, also struggle to treat back problems with any consistency. Nevertheless, conventional therapy is still preferable because of the serious dangers associated with chiropractic.

In 2001, a systematic review of five studies revealed that roughly half of all chiropractic patients experience temporary adverse effects, such as pain, numbness, stiffness, dizziness and headaches. These are relatively minor effects, but the frequency is very high, and this has to be weighed against the limited benefit offered by chiropractors.

More worryingly, the hallmark technique of the chiropractor, known as high-velocity, low-amplitude thrust, carries much more significant risks. This involves pushing joints beyond their natural range of motion by applying a

short, sharp force. Although this is a safe procedure for most patients, others can suffer dislocations and fractures.

Worse still, manipulation of the neck can damage the vertebral arteries, which supply blood to the brain. So-called vertebral dissection can ultimately cut off the blood supply, which in turn can lead to a stroke and even death. Because there is usually a delay between the vertebral dissection and the blockage of blood to the brain, the link between chiropractic and strokes went unnoticed for many years. Recently, however, it has been possible to identify cases where spinal manipulation has certainly been the cause of vertebral dissection.

Laurie Mathiason was a 20-year-old Canadian waitress who visited a chiropractor 21 times between 1997 and 1998 to relieve her low-back pain. On her penultimate visit she complained of stiffness in her neck. That evening she began dropping plates at the restaurant, so she returned to the chiropractor. As the chiropractor manipulated her neck, Mathiason began to cry, her eyes started to roll, she foamed at the mouth and her body began to convulse. She was rushed to hospital, slipped into a coma and died three days later. At the inquest, the coroner declared: "Laurie died of a ruptured vertebral artery, which occurred in association with a chiropractic manipulation of the neck."

This case is not unique. In Canada alone there have been several other women who have died after receiving chiropractic therapy, and Edzard Ernst has identified about 700 cases of serious complications among the medical literature. This should be a major concern for health officials, particularly as under-reporting will mean that the actual number of cases is much higher.

If spinal manipulation were a drug with such serious adverse effects and so little demonstrable benefit, then it would almost certainly have been taken off the market.

ENDBY: Simon Singh is a science writer in London and the co-author, with Edzard Ernst, of *Trick or Treatment? Alternative Medicine on Trial*. This is an abridged version of an article published in *The Guardian* for which Singh is being personally sued for libel by the British Chiropractic Association.