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Every time we have an outbreak of a vaccine-preventable illness, medical journals, the skeptical blogosphere, and even one oddball astronomy site seize the opportunity to re-iterate two related points: 1) Vaccines are safe, and they are unrelated to autism. 2) When rates of vaccinations drop, diseases return. These incidents are exceedingly salient to the current public debate surrounding vaccination and more than worthy of the attention they receive.

And yet, in spite of the evidence, in spite of our vigilance, people still fear vaccines and outbreaks continue. Faced with a frustrating and seemingly perpetual battle, it is easy for skeptics to become jaded and cynical, feeling as though we are either preaching to a silent choir or an unfortunately vocal brick wall. That's why I think it is worth taking another look at the most recent measles outbreak to have gained skeptical attention because the situation may not be as bleak as it sometimes appears.[1]

In January of '08, an unvaccinated 7-year-old boy on vacation with his family in Switzerland contracted measles. On return to his home in San Diego he managed to infect 11 other children before the outbreak was contained.

All of the children infected with measles were unvaccinated, 9 of them intentionally so. Three infants were under a year of age and thus too young to have been vaccinated. This is an entirely typical pattern of infection for a vaccine-preventable outbreak, and while it is extremely important to point out the fact that vaccines do work, that's not necessarily the most important point for skeptics to hear.

You see, the school the index case attended had 376 children. 36 of them had a Personal Belief Exemption (PBE) on file, meaning their families had opted out of vaccination. 7 of these 36 kids contracted measles. This is in sharp contrast to the other 340 vaccinated children in the school, none of whom became infected; like I said, vaccines work.

But here's the silver lining: of the 29 unvaccinated, uninfected children,11 were vaccinated by their parents during the outbreak. These parents were not the unreachable, hopeless vaccine denialists. They were not members of the choir, nor the wall. They were parents who made a decision they felt to be in the best interest of their child. Once it became clear their decision to not vaccinate was a mistake, they *changed their minds*. True, in this case an undeniable, immediate threat to their child's health and life was the motivator, but it is reasonable to hope

they might find a more subtle, less lethal argument equally persuasive.

A majority of these families appear to have been staunch anti-vaccinationists whose fear of vaccines was unlikely to ever be overcome, but not all of them. Families who fail to vaccinate are a far more heterogeneous group than we as skeptics often credit them for. Different families will be persuaded by different arguments, and scientific, rational, personal, anecdotal, even emotional arguments all have value. This outbreak, and others as well, show me that there is still hope.

That's why I'm preaching to the choir now and hoping it does not fall silent. Keep blogging, podcasting, and writing about vaccination. Loudly and publicly confront the campaigns of misinformation spread by anti-vaccinationist groups. Most importantly, continue to talk to the people around you, your family, friends, and co-workers. Individual skeptics can have a real impact, one measured in children's suffering prevented and lives saved.

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http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5708a3.htm