Autism and Vaccines: Is the Myth True?

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“At thirteen, Michelle Cedillo can’t speak, wears a diaper and requires round-the-clock monitoring in case she has a seizure. While her peers go to school or the mall or spend time with friends, the teenager remains at home, where she entertains herself with picture books and Sesame Street and Blue’s Clues DVDs” (Martin, p.1). “Joshua Eisenstat began showing signs of autism when he was eighteen months old. He wouldn’t hug, so his mother took it upon herself to teach him how. With that first hug, Joshua began his mission of love. He touched the lives of people in his community and gave his family ‘a little slice of heaven and a pure love in [their] home.’ At age twenty-two, Joshua died of an enlarged heart, which perfectly defined who he was” (CNN Health, p. 1). “Mila Trammell was diagnosed with a classic case of autism at eighteen months. Four years later, mother Sandra says Mila is excelling in school: As a kindergartener, she reads one hundred words a minute and is estimated to be at a fourth-grade reading level” (CNN Health, p. 2). “Demetrius Vega is a seventeen-year-old with autism and just attended his junior prom, unaccompanied by his parents” (CNN Health, p. 4). “Rhys Fletcher’s face is centimeters from the TV screen. He is watching a Wiggles video for the umpteenth time. It is, explains his mom, the latest obsession. Before the Wiggles, it was Thomas the Tank. Four year old Rhys is autistic. When Rhys was a toddler, his parents had no idea anything was wrong. It was only when he stopped talking at fifteen months that his parents began to worry” (Parents, 2004).

These stories are just a few of the millions in regards to the ups and downs that are consistently present in an autistic world. Autism is a complex neurobiological disorder of development that lasts throughout a person’s life. Autism is part of a group of disorders known as an autism spectrum disorder (ASDs) that are termed developmental
disabilities because they generally show signs of existence before the age of three. Although autism is very prevalent in children in the United States, it has only recently started showing up on the radar screen. In the past twenty years, parents of children with autism have started speaking up. There is a strong belief amongst these parents that vaccinating their children has led to the prevalence of autism. In fact, since 1999, more than 4,800 families have filed claims with the government alleging that their children developed autism as a result of routine vaccinations. Therefore, the question behind the thousands of governmental claims circles around the idea of whether or not there truly is any validity to a link between vaccines and autism spectrum disorders.

As previously stated, autism is a complex neurobiological disorder of development that lasts throughout a person’s life. Autism is one of a group of disorders known as autism spectrum disorders (ASDs). These are sometimes referred to as developmental disabilities because they usually begin around the age of three, which is during the developmental period of a child. Developmental disabilities generally persist throughout a child’s life, causing delays and problems throughout childhood and into adulthood. ASDs will cause substantial impairments in language, social behavior, and behaviors concerning objects and routines. There is sometimes the presence of unusual behaviors and interests. It has also been found that many people with ASDs have unusual ways of learning, thinking, paying attention, and reacting to different sensations. It is important to mention that the thinking and learning disabilities of people on the autism spectrum can greatly vary; it can vary as far as from gifted to severely-challenged.

Because different people with autism can have very different features or symptoms, autisms is thought of as a “spectrum” disorder. The three main forms of
autism spectrum disorders are autism, Asperger’s syndrome, and pervasive developmental disorder not otherwise specified (PDD-NOS). In a 2005 study by the World Health Organization, there was an estimated prevalence of six to six and a half people per one thousand that had an autism spectrum disorder. Of this amount and the varying forms of ASD, it was found that pervasive developmental disorder not otherwise specified persisted in the vast majority. Autism was prevalent in about 1.3 people per one thousand, and Asperger’s syndrome was in about 0.3 people per one thousand.

PDD-NOS is a diagnosis for people with some signs and symptoms of autism, but for those who can not be completely diagnosed with autism. For these people, it is very difficult to be categorized with the actual autism disorder. PDD-NOS is usually milder than autism, with some of the symptoms similar and present and some not ever present. Occasionally there is a boundary between pervasive developmental disorder not otherwise specified and non-autistic. There can be some cases where the symptoms are late-onset or very miniscule that it can be difficult for a doctor to diagnose. With PDD-NOS, there are generally some of the same symptoms, but there is a difference as to when the symptoms start, how severe the symptoms are, and the nature of the symptoms. There are two identified disorders within PDD-NOS: Rett Syndrome and childhood disintegrative disorder. Rett Syndrome and childhood disintegrative disorder share definite symptoms with autism, but research has shown that there are several unrelated causes. Rett syndrome is a neuro-developmental disorder that is classified in the autism spectrum and is typically found in females. It is commonly linked with a decelerated rate of head growth, small hands and feet, seizures, gastrointestinal disorders, and rapid movements of body parts. Childhood disintegrative disorder is a rare condition that is
characterized by late onset of developmental delays. This disorder shows very close similarity to autism, except for the fact that the disorder typically develops at an age greater than three. It commonly results in communication, social, and motor problems. Also, there will typically be very few delays in the beginning of development, but there will be a regression of communication, motor, and social skills as the age of the child increases. However, Rett syndrome and childhood disintegrative disorder are both very rare disorders on the autism spectrum. For these atypical forms, their prevalence is generally much lower than the prevalence of Asperger’s syndrome.

Asperger’s syndrome is a neurobiological disorder that is typically identified within the autism realm. It is only in the more recent years that Asperger’s syndrome has been added to the Diagnostic Statistical Manual (DSM) and even more recently that it has started being recognized by physicians, parents, and teachers (Kirby, 2005). Asperger’s syndrome is four times more likely to occur in males rather than in females. To put the symptoms of Asperger’s syndrome simply, individuals with Asperger’s syndrome can be described as “having a dash of autism” (Kirby, 2005). Along with this, these individuals have been described as “someone who think and perceives the world differently than others” (Weber, 2008). Physicians and psychologists today identify Asperger’s syndrome with six different characteristics that are required for diagnosis: social impairments, narrow interests, repetitive routines, speech and language peculiarities, non-verbal communication difficulties, and motor clumsiness. Individuals will also have a tendency to become very preoccupied in one particular subject area. This preoccupation will force the individual to become somewhat of a social outcast and might lead to a child being a bit more rigid in social situations. In today’s world, with the availability of
testing and up-to-date screening, the diagnosis of Asperger’s syndrome is rapidly increasing. However, there are some difficulties with this diagnosis because many of the characteristics of Asperger’s syndrome can easily be masked as behavior problems and/or a lack of parenting.

Autism spectrum disorders (ASDs) have been found to occur in all racial, ethnic, and socioeconomic groups, with individuals in one group no more or less likely to have ASDs than those in other groups. There are three groups that are at a higher risk than others for ASDs including: boys, siblings, and people with certain other developmental disorders. With boys, ASDs are typically four times more likely to occur in boys rather than in girls. In regards to siblings, amongst families that have one child with an autism spectrum disorder, a recurrence of an ASD in other sibling is between two percent and eight percent. These figures are much higher than the likelihood of having an autism spectrum disorder. Finally, people with certain other developmental disorders are a high-risk group. For certain disorders, such as Fragile X syndrome, mental retardation, and tuberous sclerosis, autism is common in addition to the primary symptoms of the disorder. In general, ASDs can be detected as early as eighteen months old. It is important that all children are observed and regularly taken to a doctor in order to maintain that they are reaching all developmental milestones on time. Also, it is very important that children at a high-risk of developing an ASD are constantly monitored and watched closely. Research has consistently proven that early intervention in regards to ASDs can greatly improve a child’s development. As parents and teachers, it is necessary to increase the public awareness and to education parents about the benefits of being aware of your child’s development in his/her first few years of life.
In regards to autism specifically, autism may seem like a very modern disorder, but this is not true. People have lived with what we now know today as autism throughout history. Some of the earliest published descriptions of behavior that actually depicts what is now known as autism dates back to the eighteenth century. From the early 1900s, the term autism has refereed to a wide range of psychological conditions. In 1908, Eugen Bleuler coined the word “autism” in schizophrenic patients who screened themselves off and were self-absorbed (History, 2004). Eugen Bleuler coined the term autism, from the Greek word “autos,” meaning “self.” The term was basically used to describe conditions in which a person is completely removed from social interaction, making them an isolated being. Next, in the 1940s, researchers in the United States began to use this term to describe children with emotional or social problems. In 1943, Leo Kanner, an American child psychiatrist from John Hopkins University, used the term to discuss several children that he was studying. At the time, he used the term “autism” to describe eleven children with very withdrawn behaviors. The common traits of these children included: impairments in social interaction, anguish for changes, good memory, belated echolalia, over sensitivity to certain stimuli (especially sound), food problems, limitations in spontaneous activity, and good intellectual potential. Kanner described that almost half of these children came from talented families. Kanner was one of the first to coin the term “autistic” when speaking of these children. Around the identical time as Leo Kanner’s discoveries, in 1944, Hans Asperger, a Viennese child psychiatrist, published a report on his case study of several young boys who were displaying several alarming characteristics. The boys seemed to demonstrate several autism-like characteristics, such as problem in communication and social skills. The difference with
from these young boys and the children in Kanner’s case study with full-fledged autism was that they demonstrated almost normal intelligence and language development. This similar condition is now termed Asperger’s syndrome (Grossman, 2004). Finally, Bruno Bettelheim wrote about his own therapy sessions with children in the Empty Fortress. Bettelheim termed these children autistic and claimed that the disorder was a result of coldness from their mothers (History, 2004).

Sadly, until about the 1960s, autism was consistently linked with schizophrenia. In the 1970s, knowledge of autism began to spread to Sweden and the Erica Foundation was started. The Erica Foundation’s goal was to provide therapy and education for psychotic and autistic children and adolescents. They are given credit for starting the first special education classes for those with autism. The Erica Foundation still exists today and is located in Stockholm, Sweden. It is an “independent institute providing psychotherapy for children and adolescents, professional training at the university level, and research. It is largely funded through central government and county support” (Erica Foundation, 2008). During the 1980s, the research by Hans Asperger was finally translated into English. At this time, medical professionals in the United States began to have a separate understand of the difference between schizophrenia and autism in children and adolescents. Throughout this extensive research into autism, several theories on treatments surfaced. From the 1960s to the 1970s, there was research involving medications including LSD, electric shock, and behavior change techniques. These medication and therapy techniques were later ruled out because they involved extensive pain and punishment for the patients. During the 1980s and 1990s, the role of
behavior therapy and the use of highly controlled learning environments emerged as a possible treatment for autism.

In today’s world, it is believed that about 1.3 people in one thousand have autism. It is very hard for researchers to explain that exact number of people that have an ASD in the United States. It is difficult to put a number on the amount of people who are living with autism for several reasons. First, researchers consistently use different ways to determine the prevalence of autism. This will lead to different results. Also, some estimates rely on previously published studies. Finally, there are many cases of autism that remain undiscovered by pediatricians and doctors. This is because some of the signs and symptoms of autism and the ASDs can be masked for years as simply behavioral issues. There is much curiosity about whether autism is more common now than it was in the past. Again, this is a very difficult thing to measure because so little was known about autism and the autism spectrum disorders until recently. It is clear that there are more cases that are being identified today. It is unclear as to why this is happening. This increase could be directly related to the fact that there is more information available today in regards to autism and its signs and symptoms. This could also be related to the fact that we are now more accurately able to diagnose autism. However, an increase in the identified cases could be directly linked to the fact that the new definition of autism as a spectrum disorder means that even people with mild symptoms of autism can be classified as having an ASD. Researchers are hopeful that as more research becomes readily available in regards to autism and the spectrum that they will be able to more closely identify reasons for this sharp increase in autism cases throughout the world.
Although signs and symptoms of adolescents and children might sometimes be masked or hidden, there are definitely some telltale signs of autism. In most cases of autism, a number of behavioral symptoms will become evident by the age of eighteen months. This might include problems with eye contact, not responding to one’s name, joint attention problems, underdeveloped skills in pretend play and imitation, and problems with nonverbal communication and language. Some researchers have even said that they have seen rare cases where signs and symptoms of autism were present at eight months. For most autism cases, the average age of a typical diagnosis of autism is around three years old. People with autism tend to have problems with social skills, communication, repeated behaviors and routines, and additional disabilities and conditions.

In regards to social skills, an autistic child will have serious problems that will affect their everyday life. In general, a typical infant without autism is very interested in the world around them. They generally try to imitate words, use simple gestures, grasp fingers, and smile at people (Johnson, 2004). However, children with autism will have problems with interacting with people. For example, an autistic child will not show an interest in playing social games like peek-a-boo or pat-a-cake. The autistic child will significantly struggle with their ability to imitate people. Children with autism also have problems making social connections with friends. They typically like to be alone or spend time with other autistic children. Also, many children have a hard time learning to share and take turns in the elementary school setting. Finally, children with autism have problems with expression. Their problems revolve around showing their own expression and reading others expressions. Many children with autism do not enjoy being touched.
and seldom like to be cuddled. In terms of adults with severe autism, their trouble with interacting with peers, saying whatever comes to mind, difficulty adapting to change, and often poor grooming habits has made it difficult to find an accepting and appropriate career. Autistic adults often have trouble keeping a job and, more often than not, suffer from anxiety and depression. There have been several research studies on the effect of adults with autism who have learned to show social expressions based upon reading self help books. These self help books have helped autistic adults learn to be in relationships with the opposite sex, as well as learn how to read other’s emotions. It is important to realize that adults and (sometimes) adolescents can be taught the correct social skills. Social skills can be learned from watching others. It is very important for adults with autism to learn independent living skills, such as toilet training and other basic grooming skills (Johnson, 2004).

In regards to communication skills, every person on the autism spectrum has a wide range of communication skills. It varies on a case to case basis. For example, some children might have very good verbal skills, with only a slight delay in their language skills and social skills. However, in some autistic cases, the person may not speak at all or have limited ability or interest in communicating with others. Research shows that about forty percent of children with an autism spectrum disorder do not speak at all, whereas twenty-five to thirty percent of children with autism might have a few words at eighteen months, but then completely lose their communication ability. Other children with autism may not develop their communication and language skills until much later in childhood. For those children with autism who have only limited speech or for those who do not speak at all, they often develop their own method of speaking. For example, some
children might only speak single words. Others might simply repeat the same phrase over and over again. When a child repeats the same word or repeats what another person says, this is referred to as echolalia. The words that are repeated might be repeated immediately after they are heard or they might be repeated minutes or hours later in the day. On the other hand, some people with autism are able to speak very clearly, but they have difficulty comprehending what others are saying to them. Another aspect of communication involves hand gestures and tone of voice. Some autistic children and adults have difficulty expressing themselves with hand gestures. For example, they might be waving hello or goodbye when they are saying the opposite. Another example is that they might be smiling when they are delivering really sad news. Finally, with tone of voice, autistic people tend to have very one-pitched, monotone voices. They usually have a very difficult time using expression in their voices.

In regards to repeated behaviors and routines, autistic people tend to have unusual behaviors that need to be repeated that will make interactions socially very difficult. A very prevalent sign of autism is the concept of a repeated routine. A person will repetitively repeat an action with a toy, a body part, or their entire body for a certain number of times until they feel comfortable. These repeated movements can be highly noticeable or unnoticeable. For example, if a child is consistently flapping their hands in the air or switching a light switch on and off, this would be a very noticeable routine. However, if a child is constantly fidgeting with a toy inside of their pocket, this would not be very noticeable (Johnson, 2004). People with autism typically like to be on a very set and rigid schedule. Any disruptions to their normal schedules might cause a problem for them. Again, problems with routines can be very noticeable or unnoticeable. For
example, if a child in an elementary school has issues with transitions from subject to 
subject, this can easily be solved with a daily schedule on their desk. However, some 
autistic people might try to look in every window he or she walks by in a building. If an 
autistic person is unable to complete his or her set routine, it might result in severe 
tantrums and frustrations.

In regards to associate features, it is important to remember that signs and 
symptoms of autism are not always going to fit neatly into these categories. People with 
autism will have a wide range of symptoms that might lead to their autism to fall 
somewhere on the autism spectrum disorder. Several other behaviors that can typically 
be associated with autism include: hyperactivity, short attention span, impulsivity, 
aggressiveness, self-injury, and temper tantrums. Children might have odd responses to 
touch, smell, and sound.

As previously explained, the early that autism is detected within children the 
better. Research has proven that early detection and early intervention strategies are the 
best methods for helping an autistic child lead a normal life. The Center for Disease 
Control has developed a list of several “red flags” that parents, caregivers, family 
members, teachers, and others can be aware of in regards to delays in development:

- The child does not respond to his/her own name.
- The child cannot explain what he/she wants.
- The child’s language skills are slow to develop or speech is delayed.
- The child does not follow directions.
- At times, the child seems to be deaf.
- The child seems to hear sometimes, but not other times.
- The child does not point or wave “bye-bye.”
- The child used to say a few words or babble, but now he/she doesn’t.
- The child throws intense or violent tantrums.
- The child has odd movement patterns.
- The child is overly active, uncooperative, or resistant.
- The child doesn’t know how to play with toys.
- The child doesn’t smile when smiled at.
- The child has poor eye contact.
- The child gets “stuck” doing the same things over and over and can’t move on to other things.
- The child seems to prefer to play alone.
- The child gets things for him/herself only.
- The child is very independent for his/her age.
- The child does things “early” compared to other children.
- The child seems to be in his/her “own world.”
- The child seems to tune people out.
- The child is not interested in other children.
- The child walks on his/her toes.
- The child shows unusual attachment to toys, objects, or schedules (i.e., always holding a string or having to put socks on before pants).
- Child spends a lot of time lining things up or putting things in a certain order.

The discussion of the red flags of autism has forced a lot of parents, educators, and researchers to think about the causes of autism. What actually causes autism? This
is a question on a lot of minds. At this time, scientists do not really know what causes autism. There is a lot of evidence that supports the idea that genetic factors are one of the underlying causes of autism. As explained, a child is much more likely to have autism if they have a parent or sibling with autism. It is believed that genes, including their function and interactions, have a part in developing autism. However, it is understand that it is not just one gene that causes autism. Instead, researchers are investigated approximately ten or more genes that are on different chromosomes that might be linked to the different degrees of autism. There have been several different studies within families of autistic children that have proven helpful in learning more about the causes of autism. Studies have shown that among identical twins, if one child has autism, then the other will be affected about seventy-five percent of the time (Boyle, 2004). In non-identical twins, if one child has autism, then the other has it about three percent of the time. Finally, it has been shown through several more family studies that parents who have a child with autism have a two to eight percent higher chance of having a second child who is also affected (Boyle, 2004). Some researchers also believe that environmental factors could play a role in the cause of autism. However, there is very little research on this and there have been no positive feedback in regards to these claims.

One of the major pushes by parents and caregivers of children, adolescents, and adults of autism is the idea that there is a positive link between autism and vaccines. It has become evident in the past few years that the linkage between autism and vaccines combined with the drastic increase in autistic cases has become a parent’s number one fear. A lot of parents have made significant claims that the Measles, Mumps, and Rubella vaccines (otherwise known as MMR) and thimerosal (otherwise known as
mercury) have played a large part in the increase of autism cases. It is important to mention that up to this date, there is no conclusive evidence that any part of any vaccine or any combination of any vaccines will cause autism. There has been a great deal of research studies carried out by the Center for Disease Control and several other research groups to try to justify these claims. There is also no proof that any of the materials that possibly could have been used to make or preserve these vaccines will cause autism. It is important to conclude that there have been many reports of studies that relate vaccines to autism, especially those where the symptoms have shown up immediately after a vaccination, but the findings have not held up to be true when they underwent further investigation.

Therefore, although there have been a significant amount of claims that have linked autism and vaccinations, the weight of evidence that has been shown indicates that there is not a direct relationship between the two. The Center for Disease Control “knows that some parents and others may still have concerns with this issue. The Center for Disease Control is committed to protecting the health of children and to identifying the biological and environmental causes of autism and other developmental disabilities” (CDC, 2008). This statement from the CDC was provided as a measure to help reassure parents and caregivers that every step is carefully being measured in regards to these claims. The CDC has spent a significant amount of time studying the effects of different vaccines and what they contain in order to further dispel these beliefs.

Thimerosal is a mercury containing preservative that has been used in some vaccines since about the 1930s. There has been no convincing scientific evidence found that shows harmful side effects as a result of using this preservative in vaccines. Again,
with the increase in autism cases throughout the United States, some people believe that an increased exposure to thimerosal explains the increase in autism. These people claim that an increased exposure to thimerosal has come because of the increase in the number of vaccines that children are required to have during their developmental stages.

The CDC conducted their own research study in regards to these findings. The study, “Autism and Thimerosal-Containing Vaccines: Lack of Consistent Evidence for an Association” was published in the American Journal of Preventive Medicine in August 2003. This study was a result of findings in July 2001 that showed “an increase in autism incidence in California in association with increases in the use of thimerosal-containing vaccines in the late 1990s” (CDC, 2009). To further prove their findings in this study, the CDC looked at a similar research study completed in Denmark and Sweden in 1992. Around this year in Denmark and Sweden, thimerosal was no longer used in vaccinations. However, from 1987-1999, there was an increase in autism cases, contrary to the decrease that would have been expected from the termination of thimerosal in vaccines. Currently, the CDC is in the process of completing a second research study: “Thimerosal and Autism Case Control Study.” Their description reports that “preliminary results from the Thimerosal Screening Study published in 2003 did not find an association between thimerosal exposure and autism risk and recent ecological studies have not found a correlation between thimerosal content of vaccines and autism rates” (CDC, 2009). Through this case-controlled study, the CDC has match children who were diagnosed with autism to control children. The CDC is currently in the process of reviewing all of the medical histories of the children in order to look for their vaccination
histories and information on other potentially confounding factors that could have led to their diagnosis. The results of this study should be concluding in January 2010.

There is also a strong belief that the Measles, Mumps, and Rubella vaccine (MMR) has a strong correlation to autism. This vaccine is a combination of medicines that has been used since 1971 to protect our children from the measles, mumps, and rubella. Before this vaccine became available, there were multiple outbreaks of each of these potentially deadly diseases throughout the year. Today, almost ten million MMR vaccines are distributed yearly and this has resulted in a very low outbreak of measles, mumps, and rubella. It is important to mention that for those parents and caregivers who select not to give children the MMR vaccine (either for religious or unknown reasons), you are putting your child at risk to three very contagious and deadly diseases. There is one very important linkage between the MMR vaccine and the onset of autism symptoms. This is one of the reasons why many people feel that there is this strong correlation between the MMR vaccine and autism. It is recommended that the MMR vaccine be given in two doses to children. The first dose is recommended at ages twelve to fifteen months, whereas the second dose is recommended at ages four to six years old. Because the doses are given around the time where signs and symptoms of autism generally materialize, it is believed by some that the vaccine is a direct result of the autism symptoms. However, it is pertinent to mention that the only direct side effects of the MMR vaccine include pain where the vaccine was administered, fever, mild rash, and swollen glands in the cheek or neck (CDC, 2008).

The CDC has also spent time investigating their own research in regards to this matter. The study, “Denmark MMR/Autism Study” was published in the New England
Journal of Medicine in November 2002. This study was a direct result of the ongoing relationship between the CDC and the Danish Medical Research Council. This relationship provides “opportunities for CDC to pursue causes of birth defects and developmental disabilities through Denmark’s unique public health data infrastructure” (CDC, 2009). Through this study, the Danish followed more than 500,000 children who had received the MMR vaccine, over seven years, and found no association between the MMR vaccination and autism. In a second study, “Lack of Association between Measles Virus Vaccine and Autism with Enteropathy: A Case-Control Study,” the CDC investigated the relationship between the MMR vaccine, gastrointestinal disorders (GI), and autistic spectrum disorder (ASD). This study was later published in PLoS ONE. The study investigated bowel tissues from twenty-five children with autism and GI disturbances in comparison to thirteen control children with only GI disturbances. The results showed only two biopsy samples with measles virus, one in the autism group and one in the control group. The overall results showed “that the presence of measles virus sequences was not associated with an autism diagnoses” (CDC, 2009). Therefore, the conclusion of the study was that the MMR vaccine does not play a causal role as a trigger for GI difficulties or autism.

Because there have been so many families and federal governments claims in regards to the linkage of autism and these vaccines, along with the Center for Disease Control, the United States government has also become involved. The United States began the National Vaccine Injury Compensation Program (VICP) in 1986 that was designed “to resolve a perceived crisis in vaccine tort liability claims that threatened the continued availability of childhood vaccines nationwide” (Autism, 2008). The overall
aim of this program was to reduce the liability of vaccine makers when threatened through these claims. The Vaccine Injury Compensation Program originally covered vaccines against seven diseases including: diphtheria, tetanus, pertussis, measles, mumps, rubella, and polio. Later, an amendment was added to the program that extended coverage to hepatitis B, hemophilus influenza type b, varicella (chicken pox), rotavirus, human papillomavirus (HPV), hepatitis A, meningococcal vaccines, and pneumococcal conjugate (Autism, 2008). In 2005, the act was also modified again to include the annual influenza vaccine. Today, the VICP covers sixteen vaccines. For the vaccines that are covered under this program, individuals must claim injury from covered vaccines and file a no-fault compensation with the United States Court of Federal Claims. The petition must also be served upon the Secretary of Health and Human Services, who will then replace the vaccine manufacturer or vaccine administrator to defend the claim. In this manner, the manufacturers and administrators are protected and never have the lawsuits filed directly against them personally. Once the case has been filed, the initial question that is open for discussion is the issue of causation. There are two manners in which causation can be proven. First, the VICP has a Vaccine Injury Table, which lists certain injuries and conditions which if they are found within a certain period of time that is defined for each particular vaccine, can create proof of causation. For example, “if a petitioner proves that her child received a DPT vaccine that the child suffered an encephalopathy (brain injury) within three days thereafter, causation is presumed” (Autism, 2008). In the case of autism, there have been no actual cases where causation was proven in the time period allotted under the Vaccine Injury Table for the specified vaccines. Here is a glance at the table:
### Vaccine Injury Table

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Adverse Event</th>
<th>Time Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Tetanus toxoid-containing vaccines</strong> (e.g., DTaP, Tdap, DTP-Hib, DT, Td, TT)</td>
<td>A. Anaphylaxis or anaphylactic shock</td>
<td>0-4 hours</td>
</tr>
<tr>
<td></td>
<td>B. Brachial neuritis</td>
<td>2-28 days</td>
</tr>
<tr>
<td></td>
<td>C. Any acute complication or sequela (including death) of above events</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>II. Pertussis antigen-containing vaccines</strong> (e.g., DTaP, Tdap, DTP, P, DTP-Hib)</td>
<td>A. Anaphylaxis or anaphylactic shock</td>
<td>0-4 hours</td>
</tr>
<tr>
<td></td>
<td>B. Encephalopathy (or encephalitis)</td>
<td>0-72 hours</td>
</tr>
<tr>
<td></td>
<td>C. Any acute complication or sequela (including death) of above events</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>III. Measles, mumps and rubella virus-containing vaccines in any combination</strong> (e.g., MMR, MR, M, R)</td>
<td>A. Anaphylaxis or anaphylactic shock</td>
<td>0-4 hours</td>
</tr>
<tr>
<td></td>
<td>B. Encephalopathy (or encephalitis)</td>
<td>5-15 days</td>
</tr>
<tr>
<td></td>
<td>C. Any acute complication or sequela (including death) of above events</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>IV. Rubella virus-containing vaccines</strong> (e.g., MMR, MR, R)</td>
<td>A. Chronic arthritis</td>
<td>7-42 days</td>
</tr>
<tr>
<td></td>
<td>B. Any acute complication or sequela (including death) of above event</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>V. Measles virus-containing vaccines</strong></td>
<td>A. Thrombocytopenic purpura</td>
<td>7-30 days</td>
</tr>
<tr>
<td>Vaccine</td>
<td>Adverse Event</td>
<td>Time Interval</td>
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<tr>
<td>---------</td>
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<tr>
<td>(e.g., MMR, MR, M)</td>
<td>B. Vaccine-Strain Measles Viral Infection in an immunodeficient recipient 8</td>
<td>0-6 months</td>
</tr>
<tr>
<td></td>
<td>C. Any acute complication or sequela (including death) of above events 4</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**VI. Polio live virus-containing vaccines (OPV)**

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Adverse Event</th>
<th>Time Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Paralytic polio</td>
<td>• in a non-immunodeficient recipient</td>
<td>0-30 days</td>
</tr>
<tr>
<td></td>
<td>• in an immunodeficient recipient</td>
<td>0-6 months</td>
</tr>
<tr>
<td></td>
<td>• in a vaccine associated community case</td>
<td>Not applicable</td>
</tr>
<tr>
<td>B. Vaccine-strain polio viral infection 2</td>
<td>• in a non-immunodeficient recipient</td>
<td>0-30 days</td>
</tr>
<tr>
<td></td>
<td>• in an immunodeficient recipient</td>
<td>0-6 months</td>
</tr>
<tr>
<td></td>
<td>• in a vaccine associated community case</td>
<td>Not applicable</td>
</tr>
<tr>
<td>C. Any acute complication or sequela</td>
<td>Not</td>
<td></td>
</tr>
<tr>
<td>Vaccine</td>
<td>Adverse Event</td>
<td>Time Interval</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>(including death) of above events</td>
<td></td>
<td>applicable</td>
</tr>
<tr>
<td>VII. Polio inactivated-virus containing</td>
<td>A. Anaphylaxis or anaphylactic shock</td>
<td>0-4 hours</td>
</tr>
<tr>
<td>vaccines (e.g., IPV)</td>
<td>B. Any acute complication or sequela (including death)</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>of above event</td>
<td></td>
</tr>
<tr>
<td>VIII. Hepatitis B antigen-containing vaccines</td>
<td>A. Anaphylaxis or anaphylactic shock</td>
<td>0-4 hours</td>
</tr>
<tr>
<td></td>
<td>B. Any acute complication or sequela (including death)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>IX. Hemophilus influenzae (type b polysaccharide conjugate vaccines)</td>
<td>A. No condition specified for compensation</td>
<td>Not applicable</td>
</tr>
<tr>
<td>X. Varicella vaccine</td>
<td>A. No condition specified for compensation</td>
<td>Not applicable</td>
</tr>
<tr>
<td>XI. Rotavirus vaccine</td>
<td>A. No condition specified for compensation</td>
<td>Not applicable</td>
</tr>
<tr>
<td>XII. Pneumococcal conjugate vaccines</td>
<td>A. No condition specified for compensation</td>
<td>Not applicable</td>
</tr>
<tr>
<td>XIII. Any new vaccine recommended by the Centers for Disease Control and Prevention</td>
<td>A. No condition specified for compensation</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
The second manner to prove causation is much more difficult. This is the steps that should be taken if the petitioner demonstrates that the receiver of the particular vaccine received a medical condition that is not listed in the Vaccine Injury Table or that the conditions occurred after the time limitation had expired. For this to completely work, the petitioner must be able to establish some method of actual causation. The Act’s legislative writings explain, “simple similarity to conditions or time periods listed in the Table is not sufficient evidence of causation; evidence in the form of scientific studies or expert medical testimony is necessary to demonstrate causation for such a petitioner” (Autism, 2008). As previously stated, it is very difficult to prove complete causation of a medical condition from a vaccine. The VICP, however, does report that with some of the vaccines it is easier to find causation than others. If causation is proven, The VICP will provide compensation for past and future medical expenses, rehabilitation, therapies, special education expenses, equipment, and placement. They will provide a maximum of $250,000 for the pain and suffering. Along with this, the VICP will also provide amounts based upon the yearly lost salary earnings if you are above eighteen years of age. The VICP reports that as of January, 2009, 12,850 cases have been filed with their program. Out of these, 5,535 were autism-vaccine linked cases. Autism cases

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Adverse Event</th>
<th>Time Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention for routine administration to children, after publication by Secretary, HHS of a notice of coverage</td>
<td>c</td>
<td></td>
</tr>
</tbody>
</table>

(VICP, 2008)
are very difficult to find causation. Out of the 12,850 total cases filed, on 6,979 have been adjudicated and only 2,260 have received compensation (Autism, 2008).

In regards to the VICP and autism-related cases, there are several identified proceedings that are followed for these cases in particular. The United States government has started a Petitioner’s Steering Committee (PSC) that works collaboratively with the VICP in all of the autism proceedings. The Petitioner’s Steering Committee has advanced three different theories of causation or how they think that vaccines can cause autism. The three general theories of causation are: (1) the theory that MMR vaccines and thimerosal-containing vaccines can combine to cause autism; (2) the theory that thimerosal-containing vaccines can cause autism; and (3) the theory that MMR vaccines, without regard to any thimerosal additive, can cause autism. The third theory was later dropped because there were not enough court cases to follow along with it. The PSC has independently conducted hearings on each of the three theories.

The main case that was conducted in regards to the first theory was the case of *Cedillo v. Secretary of Health and Human Services*, No. 98-916V. This case was presided over by Special Master George Hastings. The Cedillo’s, parents of the Michelle Cedillo (as described above), were seeking compensation from the National Vaccine Injury Compensation Program because of autism and gastrointestinal problems that affect their daughter. The parents believed that they had proof of causation theory because: (1) that thimerosal-containing vaccines can cause immune dysfunction, (2) that the MMR vaccine can cause autism, and (3) that the MMR vaccine can cause gastrointestinal dysfunction. The Special Master presiding over this case found their evidence to be contrary of their contentions. He explains, “the expert witnesses presented by the
respondent were far better qualified, far more experienced, and far more persuasive than
the petitioner’s experts, concerning most of the points. The numerous medical studies
concerning these issues, performed by medical scientists worldwide, have come down
strongly against the petitioner’s contentions. Considering all of the evidence, I found that
the petitioners have failed to demonstrate…I further conclude that while Michelle Cedillo
has tragically suffered from autism and other severe conditions, the petitioners have failed
to demonstrate that her vaccinations played any role at all in causing these problems”
(Cedillo, 2009).

The second case that included a hearing conducted by the PSC for the first theory
was the case of Colten Snyder, by and through Kathryn Snyder and Joseph Snyder v.
Secretary of the Department of Health and Human Services, No. 01-162V. This case was
presided over by the Special Master Denise Vowell. In this case, the parents were asking
for compensation from the VICP because they believed that the MMR vaccination cased
a “post-vaccinal encephalopathy.” They also allege that a combination of thimerosal-
containing vaccines and the MMR vaccine cause their son to develop a pervasive
development disorder that is on the autism spectrum. This case was different from the
previous case because the petitioners did not contend that the child had suffered an injury
from the Table. Therefore, in order to receive compensation, it was necessary for them to
prove that there was a medical theory connecting the vaccination and the injury, show a
logical sequence of cause and effect showing that the vaccination was the reason for the
injury, and show a proximate relationship between the vaccination and the injury in
regards to time. The Special Master concluded that: “I hold that petitioners have failed to
establish preponderant evidence that Colten’s conditions was caused or significantly
aggravated by a vaccine or any component thereof. The evidence presented was both
voluminous and extraordinarily complex. After careful consideration of all of the
evidence, it was abundantly clear that the petitioners’ theories of causation were
speculative and unpersuasive” (Colten, 2008).

The main case that was conducted in regards to the second theory was the case of
Rolf and Angela Hazlehurst, parents of William Yates Hazlehurst v. Secretary of the
Department of Health and Human Services, No. 03-654V. This case was presided over
by Special Master Patricia Campbell Smith. In this case, the parents of William Yates
Hazlehurst filed for a claim with the National Vaccine Injury Compensation Program.
His parents, Rolf and Angela Hazlehurst, alleged that “the MMR (measles, mumps,
rubella) vaccination that Yates Hazlehurst received on February 8, 2001, or a
combination of the MMR vaccination and the Thimerosal containing vaccinations that he
received during the first twelve months of life, causes Yates Hazlehurst to develop autism.
The Special Master residing over this case came to the following conclusion: “The
Hazlehursts’ experience as parents of an autistic child, as described during the
evidentiary hearing of this case, has been a very difficult one. The undersigned…having
carefully and fully considered the evidence, I conclude that the combination of the
thimerosal-containing vaccines and the MMR vaccine are not causal factors in the
development of autism and therefore, could not have contributed to the development of
Yates’ autism. The weight of the presented evidence that is scientifically reliable and
methodologically sound does not support the petitioners’ claim” (Hazlehurst, 2009).

These before-mentioned cases only slightly touch on the wealth of court cases that
are filed each year in the United States. The linkage between autism and vaccines is
causing an almost epidemic-like scare throughout the country. As previously stated, the information on autism is vast. Around the world, doctors are furiously working to try to solve the mystery that is autism. To this day, it is very difficult for us to understand the makings of this developmental disorder. Still, very little is known about the exact causes of autism, as well as possible methods of treatment. Some people even believe that finding a treatment and/or cure for autism is futile. The linkage between autism and vaccines is becoming a dangerous problem for our country. Although there is overwhelming research and thousands of court cases that have all discovered that there is not enough evidence to prove a link, there is still much doubt in parents’ eyes. In May 2008, the federal health officials announced that this United States is on track to see its highest incidence of measles since 2001. Furthering this, Times Magazine reported in January that an unvaccinated seven year old boy contracted measles on a trip to Switzerland and when he returned home, the boy infected eleven other children. The question that we must force ourselves to ask when we hear of these alarming statistics is: what is causing parents, caretakers, guardians, and people in general to refuse to vaccinate their children? This is a difficult question to answer. It seems that even our strongest governmental leaders have difficulty facing the facts. During the presidential campaign, Barack Obama, Hillary Clinton, and John McCain all stated their opinions in regards to the matter. Their opinions seemed to be quite the opposite of the truth. McCain explained that “It’s indisputable that autism is on the rise amongst children, the question is what’s causing it. And we go back and forth and there’s strong evidence that indicates that it’s got to do with a preservative in vaccines” (Manjoo, 2008). Obama stated: “We’ve seen just a skyrocketing autism rate. Some people are suspicious that it’s
connected to the vaccines. The science right now is inconclusive, but we have to research it” (Manjoo, 2008). Finally, Clinton explained, “I am committed to make investments to find the causes of autism, including possible environmental causes like vaccines. I have long been a supporter of increased research to determine the links between environmental factors and diseases, and I believe that we should increase our government’s ability to engage in this type of research” (Manjoo, 2008). Based upon the evidence, the statements made during the campaign by McCain, Clinton, and Obama are all false. Through this paper and through the thousands of court cases about the link, it has been stated that there is not strong evidence that the rise in autism is linked to vaccines. The evidence states the exact opposite. Also, the science is not conclusive; it actually states that there is not a link between autism and vaccines. Finally, we do not need to pay for more research to search for a link between vaccines and autism because this research has already been funded and there was not link found.
References


